## Weed control in winter crops 2023

NSW DPI MANAGEMENT GUIDE




## Weed control in winter crops 2023

## Penny Heuston

Project Officer - Publications Northern Cropping Systems, Trangie 0428474845 penny.heuston@dpi.nsw.gov.au

Michael Macpherson
AR\&C Consulting Rosella, Queensland 0497476299
info@arandc.com.au

OState of NSW through the Department of Regional New South Wales 2023
ISSN 0812-907X (print)
ISSN 2206-5490 (online)
Job No. 17051
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## Acknowledgements

Special thanks to Narelle Moore (Leader Crop Agronomy and Protection (North) Tamworth) for all her efforts behind the scenes to enable this guide to happen. The contributions of Jenene Kidston, Trevor Klein, Aphrika Gregson and Karl Adamson (Farm Chemicals Team, Orange); Bill Gordon (Grains Biosecurity Officer, Biosecurity and Food Safety) Dr Amanda Warren-Smith (editorial and layout); and the various chemical companies, are most appreciated.

## Cover photos

Main image: A spray rig in action. Photo: Dave Farmer, Croplands. Inset photos from left: a mix of wild oats and annual ryegrass, milk thistle and marshmallow weed. Photos: Penny Heuston.
Illustrations: originals by Alison Chambers and Dianne Gardoll, formerly NSW DPI. Redrawn by Michel Dignand. The pulse crop growth stages diagrams are reproduced with the permission of Di Holding and Annabel Bowcher, formerly CRC for Australian Weed Management.

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## Availability

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## What's new in 2023

## Aptitude ${ }^{\circledR}$ Herbicide

Aptitude ${ }^{\ominus}(90 \mathrm{~g} / \mathrm{kg}$ carfentrazone-ethyl $+375 \mathrm{~g} / \mathrm{kg}$ metribuzin) from FMC is a Group $14+5$ early post-emergence herbicide for the control of certain broadleaf weeds in weeds and is a useful rotation tool for areas with multi-herbicide resistance.

## Boxer Gold ${ }^{\circledR}$ Herbicide

Boxer Gold ${ }^{\circledR}(800 \mathrm{~g} / \mathrm{L}$ prosulfacarb $+120 \mathrm{~g} / \mathrm{L}$ s-metolachlor) is a Group 15 pre-emergent herbicide from Syngenta. Boxer Gold ${ }^{\ominus}$ is now registered in barley, chickpea, faba bean, field pea, lentil, lupin, oats, triticale and wheat for the contro of annual ryegrass, silver grass and some broadleaf weeds. The recent registration in oats and triticale will provide improved options to control annual grasses.

## Callisto ${ }^{\circledR}$ Herbicide

Callisto ${ }^{\circ}$ ( $480 \mathrm{~g} / \mathrm{L}$ mesotrione) is a pre-emergent herbicide from Syngenta. Callisto ${ }^{\ominus}$ is a Group 27 (HPPD) inhibitor that forms a layer in the soil where it is readily absorbed by the roots of emerging broadleaf weeds, disrupting photosynthesis, range of broadleaf weeds. Callisto is registered for pre-emergent and split application (post-sowing, pre-emergence) use patterns in knife-point and press-wheel seeding systems. Callisto ${ }^{*}$ provides effective in-crop, residual control to manage multiple broadleaf weed germinations.

## Dropzone

Dropzone ${ }^{\circledR}$ ( $500 \mathrm{~g} / \mathrm{L}$ 2,4-D present as the dimethylamine and monomethylamine salts) is a Group 4 knockdown herbicide from Nufarm. Dropzone ${ }^{\ominus}$ is new 2,4-D technology with a range of benefits including spray droplet optimisation, increased speed of action, low odour in a non-volatile formulation. It is also registered for optical spot spraying.

## CRUCIAL ${ }^{\text {® }}$

CRUCIAL ${ }^{\oplus}$ ( $600 \mathrm{~g} / \mathrm{L}$ glyphosate) is a Group 9 knockdown herbicide from Nufarm. It is a new triple salt and triple surfactant product with a high $600 \mathrm{~g} / \mathrm{L}$ glyphosate registrations, Pre-harvest uses for lupins, mustard, and various oilseeds have been recently added to the label.

## Frequency ${ }^{\otimes}$ Herbicide

Frequency ${ }^{\ominus}$ ( $60 \mathrm{~g} / \mathrm{L}$ topramezone) from BASF is a contact herbicide that provides excellent control of a wide range of broadleaf weeds, including hard-to-kill weeds such as fleabane and wild radish. It also offers suppression of wild oats in winter cereals. It is a new Group 27 chemistry with the flexibility to tailor tank-mix partners to suit the weed spectrum.

## Galaxy ${ }^{\circledR}$

Galaxy ${ }^{\ominus}$ ( $75 \mathrm{~g} / \mathrm{L}$ pyrasulfotole) from Nufarm is a Group 27 flexible tank mix partner for in-crop weed control. Galaxy's ${ }^{\star}$ ideal mix partners include Nufarm
bromoxynil 200, MCPA LVE 570, Gromoxynil MCPA Saracen bromoxynil 200, MCPA LVE 570, bromoxynil MCPA, Saracen ${ }^{\ominus}$, and Archer ${ }^{\ominus} 750$ sowthistle and wireweed.

## Grindstone ${ }^{\circledR}$

Grindstone ${ }^{\oplus}$ ( $240 \mathrm{~g} / \mathrm{L}$ aminopyralid) from ADAMA is a Group 4 herbicide Grindstone ${ }^{\ominus}$ can be tank-mixed with various herbicides applied in fallow and postemergent cereals. In the northern cropping zone, Grindstone ${ }^{\ominus}$ can be used as a flexible option for winter and summer broadleaf weed control, including climbing buckwheat and fleabane, with minimal effect on rotation crops.

## Liberty ${ }^{\otimes}$ Herbicide

The Australian release of the LibertyLink ${ }^{\ominus}$ canola means Liberty ${ }^{\ominus}$ Herbicide ( $200 \mathrm{~g} / \mathrm{L}$ glufosinate-ammonium) from BASF can now be sprayed over crops with this technology to enhance existing annual ryegrass management programs. Liberty ${ }^{\ominus}$ Herbicide introduces an extra mode of action (Group 10) for broadacre cropping.

## Mateno ${ }^{\circledR}$ Complete

Mateno ${ }^{*}$ Complete from Bayer (aclonifen $400 \mathrm{~g} / \mathrm{L}+$ diflufenican $66 \mathrm{~g} / \mathrm{L}+$ pyroxasulfone $100 \mathrm{~g} / \mathrm{L}$ ) combines 3 active ingredients from 3 chemical groups (Group 32) Mateno ${ }^{\circ}$ Complete is now registered for early post-emergence use in barley, and has an expanded use pattern to include more grass and broadleaf weeds for both wheat and barley. Mateno ${ }^{\oplus}$ Complete can also be used IBS (incorporated by sowing) in both wheat and barley.

## Saracen ${ }^{\circledR}$

Saracen ${ }^{\oplus}$ ( $50 \mathrm{~g} / \mathrm{L}$ florasulam) from Nufarm is the first straight florasulam (Group 2) product to be Australian registered. Saracen ${ }^{\circ}$ is a flexible mixing partner for controlling a variety of broadleaf weeds in barley, wheat, oats, triticale and ryegrass pasture. It has excellent efficacy on volunteer pulses. It is registered for
both in crop and fallow situations.

## Sierra ${ }^{\circledR}$ Herbicide

Sierra ${ }^{\circledR}$ ( $160 \mathrm{~g} / \mathrm{L}$ saflufenacil) is a Group 14 herbicide from ADAMA. It improves knockdown herbicide brownout and weed control before planting annual crops or commencing a fallow. Sierra ${ }^{\star}$ is also registered for optical spot-spray in fallow, pre-harvest in winter pulses, and weed management in established lucerne. Sierra ${ }^{\ominus}$ will be commercially available in June.

## Terrain ${ }^{\circledR}$ Flow

Terrain ${ }^{\ominus}$ Flow ( $480 \mathrm{~g} / \mathrm{L}$ flumioxazin) is a Group 14 flowable herbicide from Nufarm. Terrain ${ }^{\oplus}$ Flow offers residual control of broadleaf weeds and grasses in a range of broadacre crops including wheat, faba bean, lentil, chickpea, field pea and lucerne. The product has label additions for use in lentil, fallow and summer crops.

## Valor ${ }^{\circledR}$ EZE

Valor ${ }^{\otimes}$ EZE ( $480 \mathrm{~g} / \mathrm{kg}$ flumioxazin) is a Group 14 flowable herbicide from Sumitomo. It can be used as a pre-plant, burndown 'spike' with non-selective knockdown herbicides such as paraquat, glyphosate or diquat/paraquat mixtures. It is also registered as a pre-emergent, residual herbicide in wheat (not durum).

## Herbicide mode of action alignment

Source: CropLife Australia
Herbicide mode of action (MoA) classifications have been updated internationally to capture new active constituents and ensure the MoA classification system is globally relevant.
The global MoA classification system is based on numerical codes. This provides infinite capacity to accommodate new herbicide MoA coming to market, unlike the alphabetical codes currently used in Australia.
CropLife Australia is working with key herbicide resistance management experts, advisors and the APVMA to ensure farmers and agronomists are aware of the changes.
Growers should have already started seeing labels with the new classification system, as it was introduced in early 2022. During the transition period, herbicide labels with the alphabetical MoA classifications will still be in the supply chain. The numerical classification system is now live, and all labels should be updated by the end of 2024.

Table 1. High resistance risk herbicides.

| Chemical family | Active constituent (first registered trade name) |
| :---: | :---: |
| Group 1 (previously A) inhibition of acetyl co-enzyme A carboxylase (ACC'ase inhibitors) |  |
| Aryloxyphenoxy-propionates (FOPs) | Clodinafop (Topik), cyhalofop (Agixa**), diclofop (Cheetah* Gold*, Decision**), fenoxaprop (Cheetah ${ }^{\circledR}$ Gold ${ }^{*}$ ), fluazifop (Fusilade ${ }^{\ominus}$ ), haloxyfop (Verdict ${ }^{\ominus}$ ), propaquizafop (Shogun ${ }^{\ominus}$ ), quizalofop (Targa) |
| Cyclohexanediones (DIMs) | Butroxydim (Factor**), clethodim (Select ${ }^{\ominus}$ ), profoxydim (Aura®), sethoxydim (Cheetah ${ }^{\ominus}$ Gold*, Decision**), tralkoxydim (Achieve ${ }^{\text {® }}$ ) |
| Phenylpyrazoles (DENs) | Pinoxaden (Axial ${ }^{\circ}$ ) |
| Group 2 (previously B) inhibition of acetolactate synthase (ALS inhibitors), acetohydroxyacid synthase (AHAS) |  |
| Imidazolinones (IMIs) | Imazamox (Intervix**, Raptor ${ }^{\ominus}$ ), imazapic (Flame ${ }^{\oplus}$, OnDuty ${ }^{\oplus *}$ ), imazapyr (Intervix**, OnDuty ${ }^{\oplus *}$ ), imazethapyr (Spinnaker®) |
| Pyrimidinyl-thiobenzoates | Bispyribac (Nominee ${ }^{\text {® }}$ ), pyrithiobac ( Staple $^{\circ}$ ) |
| Sulfonylureas (SUs) | Azimsulfuron (Gulliver ${ }^{\ominus}$ ), bensulfuron (Londax ${ }^{\ominus}$ ), chlorsulfuron (Glean ${ }^{\ominus}$ ), ethoxysulfuron (Hero${ }^{\ominus}$ ), foramsulfuron (Tribute ${ }^{\ominus}$ ), halosulfuron (Sempra$\left.{ }^{\ominus}\right)$, iodosulfuron (Hussare), mesosulfuron (Atlantis®), metsulfuron (Ally ${ }^{\ominus}$, Harmony ${ }^{\oplus} \mathrm{M}^{*}$, Stinger ${ }^{\circledR *}$, Trounce ${ }^{\circledR *}$ ), prosulfuron (Casper${ }^{\star *}$ ), rimsulfuron (Titus ${ }^{\ominus}$ ), sulfometuron ( Oust $^{\ominus}$ ), sulfosulfuron (Monza${ }^{\ominus}$ ), thifensulfuron (Harmony ${ }^{\ominus} \mathrm{M}^{*}$ ), triasulfuron (Triasulfuron 750), tribenuron (Express ${ }^{\ominus}$ ), trifloxysulfuron (Envoke ${ }^{\ominus}$ ) |
| Triazolopyrimidines - type 1 | Florasulam (Paradigm ${ }^{\text {®*, }}$, Saracen${ }^{\circ}$, Vortex**), flumetsulam (Broadstrike ${ }^{\text {® }}$ ) |
| Triazolopyrimidines - type 2 | Pyroxsulam (Crusader, ${ }^{\text {® }}$ Rexade**) |
| Notes: |  |
| 1. List of approved active constituents in each 'Group' and, for ease of identification, at the discretion of the Expert Committee on Herbicide Resistance, the trade name of the first registered product or successor. |  |
| 2. Refer to the APVMA website (apvma.gov.au) to obtain a complete list of registered products from the PUBCRIS database. |  |

Table 2. Moderate resistance risk herbicides.

| Chemical family | Active constituent (first registered trade name) |
| :---: | :---: |
| Group 3 (previously D) inhibition of microtubule assembly |  |
| Benzamides | Propyzamide (Effigy**, Kerb*) |
| Benzoic acids | Chlorthal (Dacthal ${ }^{\oplus}$, Prothal ${ }^{\text {®**) }}$ |
| Dinitroanilines (DNAs) | Oryzalin (Surflan ${ }^{\text {® }}$, , pendimethalin (Stomp ${ }^{\text {® }}$ ), prodiamine (Barricade ${ }^{\ominus}$ ), trifluralin (Triflur X ${ }^{\text {® }}$ ) |
| Pyridines | Dithiopyr (Dimension ${ }^{\text {® }}$ ) |
| Group 4 (previously I) disruptors of plant cell growth (auxin mimics) |  |
| Benzoates | Dicamba (Kamba ${ }^{\text {® }} 750$ ) |
| Phenoxy-carboxylates (phenoxys) | 2,4-D (Amicide ${ }^{\oplus}$, Fallow Boss Tordon**, Pyresta ${ }^{\oplus *}$, Vortex ${ }^{\oplus *}$ ), 2,4-DB (2,4-DB 500), dichlorprop (Lantana $600^{\ominus}$ ), MCPA (MCPA LVE 570, MCPA amine 750, Kamba M**, Paragon ${ }^{* *}$, Precept ${ }^{\bullet *}$, Quadrant ${ }^{\bullet *}$, Triathlon ${ }^{\bullet *}$ ), MCPB (Thistrol Gold**) |
| Pyridine carboxylates (pyridines) | Aminopyralid (Fallow Boss Tordon ${ }^{\otimes *}$, Grazon Extra**, Hotshot ${ }^{* *}$, Stinger ${ }^{\circledR *}$, Grindstone ${ }^{\oplus}$ ), clopyralid (Lontre ${ }^{\ominus}$ ), florpyrauxifen (Agixa**), halauxifen (Paradigm**, Pixxaro ${ }^{\circledR *}$, Rexade ${ }^{\circledR *}$ ), picloram (Fallow Boss Tordon ${ }^{\oplus *}$, Grazon Extra ${ }^{\circledR *}$, Tordon ${ }^{\circledR}$ ) |
| Pyridyloxy-carboxylates | Fluroxypyr (Hotshot**, Pixxaro**, Starane ${ }^{\circ}$ ), triclopyr (Garlon ${ }^{\circ}$, Grazon Extra**) |
| Quinoline-carboxylates | Quinclorac (Drive ${ }^{\text {® }}$ ) |
| Group 5 (previously C) inhibition of photosynthesis at photosystem II - D1 Serine 264 binders (and other non-histidine binders) (PS II Serine 264 inhibitors) |  |
| Amides | Propanil (Stam ${ }^{\circ}$ ) |
| Phenylcarbamates | Phenmedipham (Betanal ${ }^{\circ}$ ) |
| Pyridazinones | Chloridazon (Pyramin ${ }^{\text {® }}$ ) |
| Triazines | Ametryn (Gesapax ${ }^{\ominus}$ Combi*), atrazine (Atrazine 900, Gesaprim ${ }^{\ominus}$, Primextra ${ }^{\circ}$ Gold*), cyanazine (Bladex ${ }^{\ominus}$ ), prometryn (Cotogard ${ }^{* *}$, Gesagard ${ }^{\ominus}$ ), propazine (Agaprop ${ }^{\ominus}$ ), simazine (Gesatop, Simazine 900 ), terbuthylazine (Palmero TX ${ }^{\circ *}$, Terbyne ${ }^{\circ}$ ), terbutryn (Terbutryn 500 SC) |
| Triazinones | Amicarbazone (Amitron**), hexazinone (Velpar ${ }^{\text {® }} 4^{*}$ ), metribuzin (Aptitude ${ }^{\text {*** }}$, Sencor ${ }^{\text {® }}$ ) |
| Uracils | Bromacil (Hyvar®, Bromacil 800), terbacil (Sinbar®, Trimac Plus ${ }^{\text {**) }}$ |
| Ureas | Diuron (Diuron 900 WG), fluometuron (Cotogard ${ }^{\ominus *}$, Cotoran ${ }^{\ominus}$ ), linuron (Afalon ${ }^{\ominus}$ ), methabenzthiazuron (Tribunil${ }^{\ominus}$ ), siduron (Tupersan ${ }^{\ominus}$ ), tebuthiuron (Graslan ${ }^{\ominus}$ ) |
| Group 6 (previously C) inhibition of photosynthesis at photosystem II - D1 Histadine 215 binders (PS II Histadine 215 inhibitors) |  |
| Benzothiadiazinones | Bentazone (Basagran ${ }^{\circ}$ ) |
| Nitriles | Bromoxynil (Buctril', Flight**, Quadrant**, Talinor**, Triathlon*, Velocity**), ioxynil (Totril ${ }^{\circ}$ ) |
| Group 9 (previously M) inhibition of 5-enolpyruvyl shikimate-3 phosphate synthase (EPSP inhibition) |  |
| Glycines | Glyphosate (Weedmaster Duo ${ }^{\circ}$, Roundup UltraMAX ${ }^{\text {® }}$ ) |
| Group 10 (previously N ) inhibition of glutamine synthetase |  |
| Phosphinic acids | Glufosinate (Bastå, Liberty ${ }^{\circ}$ ) |
| Group 12 (previously F) inhibition of carotenoid biosynthesis at the phytoene desaturase step (PDS inhibitors) |  |
| N -phenyl heterocycles | Norflurazon (Zoliar®) |
| Phenyl-ethers |  |
| Group 13 (previously Q) inhibition of deoxy-D-xyulose phosphate synthase (DOXP inhibitors) |  |
| Isoxazolidinones | Bixlozone (Overwatch ${ }^{\circ}$ ), clomazone (Clomazone) |

| Chemical family | Active constituent (first registered trade name) |
| :---: | :---: |
| Group 14 (previously G) inhibition of protoporphyrinogen oxidase (PPO inhibitors) |  |
| Diphenyl ethers | Acifluorfen (Blazer`), fomesafen (Reflex ${ }^{\circ}$, oxyfluorfen (Goal ${ }^{\circ}$, Oxyfluorfen 240) |
| N-phenyloxadiazolones | Oxadiargyl (Oxadiargyl), oxadiazon (Ronstar*) |
| N -phenyl-imides | Butafenacil (Butafenacil 200, Resolva**), flumioxazin (Valor ${ }^{\ominus}$, Terrain ${ }^{\ominus}$ ), saflufenacil (Sharpen®, Voraxor**), tiafenacil (Terrad'or ${ }^{\ominus}$ ), trifludimoxazin (Voraxor**) |
| N-phenyl-triazolinones | Carfentrazone (Affinity ${ }^{\text {® }}$, Aptitude ${ }^{\text {®*, }}$, Broadway ${ }^{\text {® }}$ ) |
| Phenylpyrazoles | Pyraflufen (Condor**, Ecoparo, Pyresta**) |
| Group 15 (previously J, K) inhibition of very long chain fatty acid synthesis (VLCFA inhibitors) |  |
| a-chloroacetamides | Metazachlor (Butisan ${ }^{\ominus}$ ), metolachlor (Boxer Gold ${ }^{\ominus *}$, Dual Gold ${ }^{\oplus}$, Primextra ${ }^{\circledR}$ Gold*), propachlor (Ramrod ${ }^{\circ}$ ) |
| Benzofurans | Ethofumesate (Tramat*) |
| Isoxazolines | Pyroxasulfone (Sakura*) |
| Thiocarbamates | EPTC (Eptam ${ }^{\ominus}$ ), molinate ( Ordram $^{\ominus}$ ), pebulate (Pebulate), prosulfocarb (Arcade ${ }^{\ominus}$, Boxer Gold ${ }^{\ominus}$ ), thiobencarb (Saturn ${ }^{\ominus}$ ), tri-allate (Avadex ${ }^{\ominus}$ ), vernolate (Vernolate) |
| Group 18 (previously R) inhibition of dihydropteroate synthase (DHP inhibitors) |  |
| Carbamates | Asulam (Asulox ${ }^{\text {a }}$ ) |
| Group 19 (previously P) inhibition of auxin transport (ATIs) |  |
| Aryl-carboxylates | Naptalam (Naptalam) |
| Group 22 (previously L) inhibition of photosynthesis at photosystem I via electron diversion (PSI electron diversion) |  |
| Pyridiniums | Diquat (Reglone ${ }^{\bullet}$, Spray Seed**), paraquat (Alliance ${ }^{\text {***, Gramoxone }}{ }^{\text {® }}$, Spray Seed**) |
| Group 23 (previously E) inhibition of microtubule organisation |  |
| Carbamates | Carbetamide (Ultro ), chlorpropham (Chlorpropham) |
| Group 27 (previously H) inhibition of 4-hydroxyphenyl-pyruvate dioxygenase (HPPD inhibitors) |  |
| Isoxazoles | Isoxaflutole (Balance ${ }^{\text {® }}$, Palmero TX**) |
| Pyrazoles | Benzofenap (Taipan ${ }^{\text {® }}$ ), pyrasulfotole (Precept**, Velocity ${ }^{\text {®**) }}$, topramezone (Frequency ${ }^{\text {® }}$ ) |
| Triketones | Bicyclopyrone (Talinor*), mesotrione (Callisto ${ }^{\circ}$ ) |
| Group 29 (previously O) inhibition of cellulose biosynthesis |  |
| Alkylazines | Indaziflam (Specticle ${ }^{\circ}$ ) |
| Benzamides | Isoxaben (Gallery ${ }^{\circ}$ ) |
| Nitriles | Dichlobenil (Casoron) |
| Group 30 (previously T) inhibition of fatty acid thioesterase |  |
| Benzyl ether | Cinmethylin (Luximax ${ }^{\text {® }}$ ), methiozolin (PoaCure Turf ${ }^{\text {e }}$ ) |
| Group 31 (previously Z) inhibition of serine-threonine protein phosphatase (STPP inhibitors) |  |
| Unknown | Endothal (Endothal ${ }^{\circ}$ ) |
| Group 32 (new active, new group) inhibition of solanesyl diphosphate synthase |  |
| Diphenyl ether | Aclonifen (Mateno ${ }^{\circ}$ Complete*) |



The WeedSmart Big 6 provides practical ways for farmers to fight herbicide resistance.

Herbicide resistance is a growing threat but there are practice changes you can make to reduce the risk on your farm.
We've weeded out the science into six simple messages which will help arm you in the war against weeds. By farming with diverse tactics, you can keep your herbicides working. While it might not be possible to adopt all the practices all the time, the Big 6 is an aspirational ook at what's possible in weed control. You can use it as a checklist as part of your ong-term strategic planning.

## Rotate crops and pastures

Crop and pasture rotation is the recipe for diversity

- Use break crops and double break crops, fallow and pasture phases to drive the weed seed bank down.
- In summer cropping systems, use diverse rotations of crops including cereals, pulses, cotton,
oilseed crops, millets and fallows.
- Add greater diversity to weed management strategies by adopting herbicide tolerance traits.


## Increase crop competition

## Optimise crop growth

Adopt at least one competitive strategy, but two is better.

- Target higher plant populations using increased seeding rates, weed-free seed tested for germination, vigour and 1,000 seed weight. Aim for even seed distribution and establishment Sow competitive crop types and varieties. Improve soil health (fertility and structure) and crop nutrition, e.g., soil amelioration (if necessary), no-till, stubble retention, nutrient budgeting.
Utilise early sowing and adopt East/West sowing if practical.
Reduce row spacing where possible.



## Mix and rotate herbicides

 Rotating buys you time, mixing buys you shots Rotate between herbicide modes of action Mix different modes of action within the same herbicide mix or in consecutive applications.Always use full label rates.
Incorporate multiple modes of action in a double knock e.g., glyphosate/Group 1/ Group 2 knockdown followed by paraquat and Group 14 and pre-emergent herbicide.
Test weeds for resistance to know what herbicides will and won't work for you. - In cotton systems, aim to target both grasses and broadleaf weeds using two non-glyphosate tactics in crop and two non-glyphosate tactics during the summer fallow, and always remove any survivors ( $2+2 \&$ no survivors).

## Optimise spray efficacy

Make every droplet count
To maximise efficacy and reduce spray drift, follow spray application guidelines and ensure the correct speed, nozzles, water volume, boom height, and adjuvants are used. Avoid antagonistic tank mixes.

- Always use the largest spray droplet feasible that gives the highest efficacy and consider water quality.
Avoid spraying during inversions (particularly from evening through to early morning), in high temperatures, frost and dew conditions, and when the wind speed is below $5 \mathrm{~km} / \mathrm{h}$ or above $20 \mathrm{~km} / \mathrm{h}$

Stop weed seed set Take no prisoners
Aim for $100 \%$ control of weeds and diligently monitor for survivors in all post weed control inspections.

Crop top or pre-harvest spray in crops to manage weedy paddocks
Consider hay or silage production, brown manure or long fallow in high-pressure situations.

- Use all appropriate strategies in the pasture phase to reduce the weed seed bank prior to cropping phase. - Consider shielded spraying, optical spot spraying technology, targeted tillage, inter-row cultivation or chipping.
- Windrow (swath) to collect early shedding weed seed. - Use two or more different weed control tactics (herbicide or non-herbicide) to control survivors In cotton farming systems, consider late season strategic tillage operations for better overall weed and Helicoverpa pupae control.

Implement harvest weed seed control Capture weed seed survivors
Capture weed seed survivors at harvest using weed seed impact mills, chaff lining, chaff tramlining/ decking, chaff carts, narrow windrow burning, or bale direct.

- Ensure optimal harvester set-up.


Weed glossary: common and botanical names
amaranth
amsinckia
annual ground cherry
annual ryegrass (Wimmera) Australian bindweed barley grass barnyard grass Bathurst burr bedstraw
bell vine
bifora
black bindweed/
climbing buckwheat
blackberry nightshade
bladder ketmia
Boggabri weed
brome grass
button grass
caltrop/cat head
canary grass
capeweed
charlock
cleavers
clovers
common chickweed
corn gromwell/sheep weed/ white iron weed couch
cow vine/peach vine
crassula/stonecrop
cudweed
datura (thornapple)
deadnettle
docks
false castor oil
fat hen
feathertop Rhodes grass
fleabane
fumitory
heliotrope (white/common)
Hexham scent
Indian hedge mustard
Johnson grass
liverseed grass
London rocket
marshmallow
medics
melon camel/afghan

Amaranthus spp.
Amsinckia spp.
Physalis angulata
Lolium rigidum
Convolvulus graminetinus Hordeum leporinum Echinochloa crus-galli Xanthium spinosum Galium tricornutum

Ipomoea plebeia
Bifora spp.
Fallopia convolvulus
Solanum nigrum
Hibiscus trionum
Amaranthus mitchelli
Bromus spp.
Dactyloctenium radulans
Tribulus terrestris
Phalaris canariensis
Arctotheca calendula
Sinapis arvensis
Galium aparine
Trifolium spp.
Stellaria media
Buglossoides arvense
Cynodon dactylon
Ipomoea lonchophylla
Crassula spp.
Gnaphalium spp.
Datura spp.
Lamium amplexicaule
Rumex spp.
Datura stramonium
Chenopodium album
Chloris virgata
Conyza spp.
Fumaria spp.
Heliotropium europaeum
Melilotus indicus
Sisymbrium orientale Sorghum halepense Urochloa panicoides Sisymbrium irio Malva parviflora
Medicago spp. Citrullus lanatus
melon paddy/prickly Mexican poppy mintweed
mouse-ear chickweed
mustards
New Zealand spinach
Noogoora burr
nut grass
oxalis/soursob
paradoxa grass
Paterson's curse
peppercress
phalaris (annual)
phalaris (perennial)
pigweed
plantain
potato weed/quena
prickly/wild lettuce red root amaranth rough poppy saffron thistle scotch thistle shepherd's purse skeleton weed slender thistle sorrel sowthistle/milk thistle spear/black thistle spiny emex/doublegee spurge
St Barnaby thistle
star thistle
stinging nettle stink grass/black grass stinking goosefoot stork's bill/Erodium summer grass
toad rush
turnip weed
variegated thistle
vetch
Vulpia/silver grass
wild oats
wild radish
wild turnip
windmill grass
winter grass
wireweed/hogweed

Cucumis myriocarpus Argemone ochroleuca Salvia reflexa Cerastium spp. Sisymbrium spp. Tetragonia tetragonoides Xanthium occidentale Cyperus rotundus Oxalis spp. Phalaris paradoxa Lepidium spp.
Phalaris minor; Phalaris paradoxa
Phalaris aquatica
Portulacca oleracea
Plantago spp.
Solanum esuriale
Amaranthus retroflexus Papaver hybridum Carthamus lanatus
Onopordum acanthium
Capsella bursa-pastoris Chondriajuncea Rum pycnocephalus Sumex acetosella
Sonchus spp. Cirsium vulgare Emex australis Euphorbia spp. Centaurea solstitialis Centaurea calcitrapa Urtica spp. Eragrostis cilianensis Chenopodium spp.
Erodium spp. Erodium spp. Juncus bufonius Rapistrum rugosum Silybum marianum

Vicia spp.
Vulpia spp.
Avena sterilis sub. ludoviciana
Raphanus raphanistrum Brassica tournefortii Chloris truncata Polygonum aviculare

## Methods for weed control in winter crops

Effective weed control in winter crops is a vital part of successful and profitable crop production. Yield losses from weeds can vary from almost negligible to crop loss.
Weeds reduce crop yields by competing for soil moisture, nutrients, space and light and can carry diseases that infect crops. This competition reduces grain yield and quality, and can impede harvesting.
Some weeds can restrict cropping options as herbicides for control are sometimes limited. Thoroughly investigate which weed species are likely to germinate in a paddock before sowing crops with limited herbicide control options.
Weed control is a numbers game. Growers should aim to reduce weed numbers and keep them low with an ongoing program. The key to successful weed control is an integrated weed management system, combining all the available methods. Crop rotation: a well-managed rotation in each paddock (alternating pastures, broadleaf and cereal crops) is a useful technique to control weeds. For example, grass weeds are more easily and cheaply controlled with chemicals in broadlea crops, whereas broadleaf weeds are much easier to control in cereal crops. In strategy for weed control. Good crop rotations can substantially reduce the cost of chemical weed control.
Hay-making or silage-making in crops and pastures can effectively reduce the weed burden.
Pasture management techniques such as pasture topping by mowing or using herbicides, spray grazing, strategic heavy grazing or burning can all be part of a weed control program. Cleaning grasses out of legume pastures in winter is a common practice that involves spraying grasses such as barley grass and silver grass to stop seed set, improve nitrogen build-up and reduce root diseases in the
subsequent cereal crops.
Good agronomic practices such as using weed-free seed, sowing on time with optimal plant populations and adequate nutrition all contribute to good weed control. Be extremely vigilant with new weed incursions; do not allow them to set
seed. Some crops and varieties are more competitive against weeds than others. Early sown varieties with early vigour can compete with emerging weeds more effectively than later sown varieties whose growth habit will be less vigorous due to the cooler conditions.
All weeds growing in a paddock should be controlled before the crop emerges. Large weeds that have not been controlled before sowing can be the most difficult, and often impossible, to manage with in-crop herbicides.
Timely cultivation is a valuable method for killing weeds and preparing seedbeds. Some growers use varying combinations of mechanical and chemical weed control to manage their fallows or stubbles.
Harvest weed-seed management is an integral part of managing herbicideresistant weed populations by reducing weed numbers, whether resistant or not, in the paddock via mechanical not chemical methods. See the Grains Research and Development Corporation website for further information.
in-crop weed control: a wide range of pre-emergent and early post-emergent herbicides is available. Weeds should be removed from crops as early as possible and no later than 6 weeks after sowing to minimise yield losses. Yield responses will depend on weed species, weed and crop densities and seasonal conditions. The growth stages of both weed and crop, as well as the effects of environmental conditions on plant stress and herbicide efficacy, must be considered before varieties of each cereal. Read herbicide labels carefully for these details and information on the best conditions for spraying.

## Using herbicides successfully

Annual weeds typically compete with most cereals and broadleaf crops when the crops are in their earlier growth stages, e.g. emergence to tillering in cereals. Weeds should be removed no later than 6 weeks after sowing to minimise losses, however, only rarely are selective herbicides completely non-toxic to the crop. Early post-emergence contro branching in broadleaf crops.
Points to remember for successfully using herbicides:

- This document is a guide; it cannot tell you all the information you need to know. This document is a guide; it cannot tell you all the informa
Always read and follow all recommendations on the label
- Plan the operation: check paddock sizes, tank capacities, water availability and supply
- Read the label: check to make sure the chemical will do the job; note any mixing instructions, especially when tank mixing more than one chemical.
- Conditions inhibiting plant cell growth, e.g. stress from drought, waterlogging, poor nutrition, high or low temperatures, low light intensity and disease or insect attack can inhibit good herbicide uptake and movement.
- Check boom height with spray pattern operation for full target coverage.
- Check the accuracy of boom width with guidance systems or marking equipment.
- Check wind speed:
a light breeze helps the herbicide to penetrate crops; the ideal safe wind speed is $7-10 \mathrm{~km} / \mathrm{hour}$.
- do not spray when wind speeds greater than $15-20 \mathrm{~km} / \mathrm{h}$; there could be spray drift onto sensitive crops and pastures, roadways, dams, trees, watercourses or public places. Note: all chemicals can drift - see Reducing herbicide spray drift on page 19 do not spray in zero wind conditions.
- Select the appropriate nozzle type for the application - see Nozzle selection on page 25. Beware of compromising nozzle types when tank mixing herbicides with fungicides or insecticides. Use the coarsest spray quality that will provide efficacy.
. Calculate the amount of herbicide required for each paddock and tank load. Add surfactant where recommended - see Calibrating boom sprays on page 26.
- Use good equipment and check it frequently for performance and output - see Cleaning and decontaminating boom sprays on page 28.
- Keep a record of each spray operation. It is a legal requirement in NSW and in most other Australian states and territories. Forms are available online from several sources - see How to complete a Pesticide Application Record Sheet on page 31.
- Use good quality water, preferably rainwater. Bore, hard, dirty or muddy water needs special additives or conditioners to improve results with certain herbicides - see Wate quality for herbicide application on page 32.
- Carefully check crop and weed growth stages before deciding upon a specific post emergent herbicide. Use the diagrams in Timing herbicide applications with crop growth stages on page 36 .
Do not spray if rain is imminent or when heavy dew or frost is present - see Rainfastness - stock withholding periods - harvest withholding periods on page 46.


## Reducing herbicide spray drift

Spray in favourable conditions for increased efficacy. This results in

- maximum herbicide effectiveness
- reduced damage and/or contamination to off-target crops and areas.

In areas where a range of agricultural enterprises co-exist, conflicts can arise, particularly from herbicide use. All herbicides are capable of drift
People have a moral and legal responsibility to prevent herbicides from drifting and contaminating or damaging neighbours' crops and sensitive areas.
Some labels now carry spray drift management instructions including buffer zones. Read and follow all label instructions.

## Types of spray drif

Sprayed herbicides can drift as droplets, particles or vapours.
Droplet drift is the easiest to control because, under good spraying conditions, droplets are carried downwards by air turbulence and gravity to collect on plant surfaces. Droplet example spraying fallows with glyphosate under the wrong conditions often leads to nearby establishing crops being severely damaged.
Particle drift occurs when water and other herbicide carriers evaporate quickly from the droplet, leaving tiny particles of concentrated herbicide. This can happen with any herbicide formulation, not just esters.
Vapour drift is confined to volatile herbicides such as 2,4-D ester. Vapours can arise Vapour drift is confined to volatile herbicides such as 2,4-D ester. Vapours can arise
directly from the spray or evaporation from the herbicide-sprayed surfaces. Using 2,4-D ester in summer can lead to vapour drift damage to highly susceptible crops such a tomatoes, sunflowers, soybeans, cotton and grapevines, and can happen hours after the herbicide has been applied. Even small quantities of drifting herbicide can cause severe damage to highly sensitive plants.
Vapours and tiny particles float in the airstream and are poorly collected on surfaces. They can be carried for many kilometres in thermal updraughts before being deposited.

## Minimising spray drift

## Before spraying

- If using a broadleaf herbicide, always check for susceptible crops in the area, e.g broadleaf crops such as grapevines, cotton, oilseeds or pulses.
- Be aware of sensitive areas such as houses, schools and riparian areas.
- Notify neighbours of your spraying intentions.

During spraying
Always carefully monitor meteorological conditions and understand their effect on drift hazard.

- Do not spray if conditions are not suitable and stop spraying if conditions change and become unsuitable.
- Under the Records Regulation of the Pesticides Act 1999, it is essential that weather and relevant spray details are recorded. Forms are available from the NSW DPI website Record weather conditions (especially temperature and relative humidity), wind spee and direction, herbicide and water rates, and operating details for each paddock.
Supervise all spraying, even when a contractor is employed. Provide a map marking the areas to be sprayed, buffers to be observed, sensitive crops and areas.
- Do not plan to spray when the temperature exceeds $28^{\circ} \mathrm{C}$ unless you are confident that the weeds are not stressed and the product label supports the intended application.
- Minimise spray release height with the boom at its lowest height to achieve double overlap.
- Use the largest droplets that will give adequate spray coverage. Where droplet size is mentioned on the label, follow the label instructions.
- Always use the least-volatile formulation of herbicide available


## Go to pages

 GRDC spray drift resources https://grac. com.au/resources and-publications resources/spraycurator\&utm curator\&utm campaign=spray-drift Practical tips for spraying https://grdc com.au/resources-and-publications/ all-publications/ factsheets/2014/08/ practical-tips-forspraying APVMA spray drift management guide https://apvma.gov.au/ node/10796Weather essentials fo herbicide applicatio au/resources-and-publications/allpublications/link. aspx/2015/05/weather-essentials-for-pesticideapplication Weatherwise https:// www.weatherzone. com.au/models/ meteogramdrill.jsp Spraywise www. spraywisedecisions.com au
NSW DPI website https://www.dpi.nsw. gov.au/_data/assets/ pdf_file/0009/186390/ applying-pesticides-Fpd applying-pesticides-F. SOS Macquarie Valley Pesticide Application, Regional NSW https://sos-nsw.com/

- Maintain a downwind buffer that could be in-crop, e.g. keep a boom width from the downwind edge of the field.
If sensitive crops are in the area, use the least damaging herbicide.


## Factors affecting the risk of herbicide spray drift

The drift hazard, or off-target potential, of a herbicide in a particular situation depends on the following.
Volatility of the formulation applied: volatility refers to the likelihood that the herbicide will evaporate and become a gas.
Proximity of susceptible crops to the herbicide being applied and their growth stage. For example, cotton is most sensitive to Group I herbicides in the seedling stage and remains sensitive during reproductive (squares) initiation.

## Method of application and equipment used:

- aerial application releases spray at 3 metres or more above the target and uses relatively low application volumes
- ground rigs have lower release heights and generally higher application volumes, and a range of nozzle types
- misters produce large numbers of very fine droplets that use wind to carry them to their target.
Amount of active ingredient (herbicide) applied: the more herbicide applied per hectare, the greater amount available to drift or volatilise

Speed = hectares per hour
Product rate = concentration of droplets.
Together (speed $\times$ rate) $=$ the rate of product entering the atmosphere per unit of time.
Efficiency of droplet capture: bare soil does not have anything to catch drifting droplets compared with crops, erect pasture species and standing stubbles.
Conditions before, during and after the application: factors such as applying volatile products onto moist soil surfaces can increase volatilisation rates.
Use a low volatile formulation
Many ester formulations are highly volatile when compared with non-volatile amine, sodium salt and acid formulations. Some low volatile ester formulations could have a proportion of high volatile esters present, so be cautious when using these products.
The compromise between minimising spray drift and achieving ideal coverage
A significant part of minimising spray drift is selecting the right equipment to reduce the number of small droplets produced. However, this in turn can affect target coverage, and possible effectiveness of the herbicide application
Carefully consider the product's mode of action and label requirements. Where good coverage is required, an increase in total application volume might be required. When coverage is required, an increase in total applicatiol volume might be required. When of smaller droplets decreases, so does the coverage of the spray. The water rate might need to be increased to compensate for coverage.
Reduce spray release height

- Operate the boom at the minimum practical height. Drift potential increases with boom height and with finer spray. Lower heights, however, can lead to more striping s the boom sways and dips below the optimum height.
$110^{\circ}$ nozzles produce a higher percentage of fine droplets than $80^{\circ}$ nozzles. However, they allow a lower boom height while maintaining the required double overlap.
- Operate within the nozzle manufacturer's recommended pressure range. Fine
droplet production that is likely to drift increases as the operating pressure increases. higher spray volumes at the same pressure and nozzle design. higher spray volumes at the same pressure and nozzle design.
Aerial application should only be used where it is permitted on the product labels of al due to several factors, including lower volume application, small droplet sizes, height application, and turning and wing-tip vortices. An aircraft should not be used to apply herbicide in areas where highly susceptible crops are growing nearby.


## Note on drift

Particle drifts have crops up to 30 km from the source.
Sensitive crops can be up to 10,000 times more sensitive than the crop being sprayed.

## Spray drift

management
tool
The Australian
Pesticides and
Pesticides and
Veterinary Med Veterinary Medicines
Authority (APVMA) has released a modified version of its Spray Drift Management Tool (SDMT) to allow for the zecalculation of buff zones for products
authorised under PER93132.

Weather conditions to be aware of
High temperatures
Do not plan to spray when the temperatures exceed $28^{\circ} \mathrm{C}$, unless you are confident that the weeds are not stressed, and the product label supports the intended application. In summer, updraughts during the heat of the day cause rapidly shifting wind directions, increasing the risk of spray drift.
Humidity
Very low humidity/high Delta $T$ values can adversely affect efficacy. Delta $T$ values above 10 could indicate the potential for plant stress, reducing uptake and translocation, and leading to rapid evaporation of smaller droplets.
High humidity/low Delta T can improve efficacy, especially with aqueous low Delta T values, (around 2 or lower) increase the survival of small droplets, which increases the risk of off-target damage. Low Delta T values are often associated with inversion conditions.
Wind

- Avoid spraying under calm conditions.
- The ideal safe wind speed is $7-10 \mathrm{~km} / \mathrm{hour}$; leaves and twigs are in constan motion - a light breeze.
A moderate breeze ( $11-14 \mathrm{~km} / \mathrm{h}$ ) is suitable for spraying if using low drift nozzles or higher volume applications ( $80-120 \mathrm{~L} / \mathrm{ha}$ ); small branches move dust is raised and loose paper moves


Figure 1. The relationship of air temperature and relative humidity to values of Delta T.

## Key points

Where surface temperature inversion conditions exist, is unsafe for spraying d drift.
Spray applied at dawn, dusk and during the night is likely to be affected by a surface temperature inversion.
During surface
temperature inv
air near the ground lacks, turbulence. This can lead to airborne herbicides remaining at high concentrations in the air at or near the surface. The direction and distance
that herbicides can move in the air close to the ground are very hard to predict when surfac inversions exist.
Source: Bureau of Meteorology.

## Surface inversions

What are surface inversions?
Surface inversions are layers of the atmosphere at the earth's surface where temperature increases with height. This is the opposite (inverse) of the norma temperature increases with height.

Hazards of surface inversions
Surface inversions strongly suppress airborne herbicide dispersion and can cause them to:
remain at high concentrations for long periods over, and close to, the target travel close to the surface for many kilometres in light breezes
move downslope and concentrate in low-lying regions
be transported, often in unpredictable directions.
Radiation inversions - the most hazardous (created by radiation cooling) Source: GRDC Surface temperature inversions and spraying.
Radiation inversions can form at any time during the night when wind speed is less than about $11 \mathrm{~km} / \mathrm{h}$ and cloud cover does not severely restrict surface cooling. In set and has stopped heating, the ground, heat radiates back into space, causing th ground to cool. In turn the air in contact with the ground becomes cooler than the air higher in the atmosphere. This generates a surface temperature inversion.
Radiation inversions are the most dangerous for spraying operations as they cause airborne droplets to remain concentrated at a low level for long periods. Winds within the inversion can carry these droplets long distances. On gentle sloping country, concentrated droplets can be transported many kilometres by drainage winds towards the lowest point in the catchment. Under an inversion, where water drains from a property, droplets can move.
How to anticipate and recognise radiation inversions
Continuously check for inversions before and during spraying. If they are present, do not spray. Observe dust habits behind ground rigs and/or use smoke generators to help identify inversion conditions.
In the APVMA's spray drift initiative, labels increasingly include the restraint, "Do not apply during surface temperature inversion conditions at the application site. Any restraint is an absolute prohibition. Since surface inversion conditions are demonstrate an inversion is not present.
Factors that decrease the potential for inversions include one or more of the following conditions:
continuous overcast, low and heavy cloud

- continuous rain
- wind speed remains above $11 \mathrm{~km} / \mathrm{h}$ for the whole period between sunset and sunrise. Be mindful that established inversions can sometimes still occur with
winds above $11 \mathrm{~km} / \mathrm{h}$.


## Night spraying

Spraying during the night and early morning is common, especially during the warmer summer months, where controlling fallow weeds is an important agronomic practice. The main reason for night spraying is because, in many cases,
Delta $T$ conditions less than $8-10$ are more common at night or in the early part of the morning, and the risk of physical drift from high wind is lower. The risk of inversions is nearly always greater at night or in the early morning.

## Where to find helpful meteorological information

Real time data need to be collected in the paddock at the time of spraying. This can be done with:

- handheld units that measure temperature, Delta T and wind speed on-farm weather stations - some can be accessed by mobile phone.

GRDC Hazardous
surface temperature inversion https://grdc.com au/resources-and-publications/ all-publications/ factsheets/2022/ hazardous-inversion


Hourly data
Forecasts are available from several websites for Delta T and wind speed, usually in three-hour blocks.
Hourly data from the Bureau of Meteorology (BOM) weather stations including temperature, Delta T, wind speed and direction are available. These data can help with planning spray activities and are useful for developing an understanding of the daily patterns of meteorological conditions.
Meteograms
Meteograms are helpful in planning spray programs for periods of lowest drift risk and highest herbicide efficacy.
They can provide forecasts forward for 7 days or more of:

- temperature, rainfall and relative humidity (RH)
- Delta T
- wind speed and direction.

A number of meteograms are mostly available by subscription. Some examples can be found at Weatherwise or Spraywise ${ }^{\ominus}$.

\# Observe label directions for minimum and maximum droplet size. Water rates may need to be modified with increased droplet sizes
Figure 2. The five commandments according to 'Save our sprays'. Image courtesy of SOS Macquarie Valley.

## Nozzle selection for post-emergent herbicides and

 fungicidesOverview
Choosing a nozzle for post-emergent herbicide and fungicide application to cereals should primarily focus on reducing the risk of spray drift without compromising efficacy. Spray drift is a significant issue facing the industry, and spray applicators not only have a moral but a legal obligation to adopt best practice management to avoid drift. Late season fungicide and herbicide usually not required for pre-emergent or summer/fallow applications. usually not required for pre-emergent or summer/fallow applications
Fungi typically target specific plant parts such as stems, leaves, and heads or a special approach for nozzle selection. Likewise, some weeds might need to be selectively targeted within the crop canopy, potentially a far trickier proposition than knockdown applications.
For many years these products were typically sprayed using fine droplets because they were assumed to give the best coverage. However, considerable research around the world has demonstrated that a medium quality, directed spray applied at higher water volumes is preferred rather than what might be considered 'normal' application rates.
The problem with fine droplets
In principle, fine droplets should mean greater coverage, that is if they actually land on the target and do not blow away or evaporate. However, small droplets have little momentum, so they are easily displaced by wind and turbulence.
The logic of increasing the spray pressure to force fine droplets into the canopy is not always successful. Small droplet acceleration lasts only milliseconds and has no effect on the overall travel time to the target. Spraying at high pressure not only increases the wear rate of nozzles, it also produces finer sprays with a corresponding increase in drift potential.
When to use coarse droplets
Coarse spray qualities can deliver equivalent or greater amounts of product to the target, but the number and uniformity of the droplets on the target might be less than that of a medium spray quality at equivalent application volumes. Fully translocated products and soil-applied products are better labels or the conditions require a larger droplet, increased application volumes might be required for products with modes of action that are contact or limited translocation.
Which nozzle?
GRDC has a chart and guide to help you select the appropriate nozzle for your spray jobs.
Conclusions

- Use high application volumes unless the label specifically recommends otherwise.
- Higher volumes improve both coverage and spray penetration - the single most important variable for post-emergent herbicides and fungicides.
- Avoid fine and very fine spray patterns as they can lead to excessive spray drift and evaporation.
- Always select and operate a nozzle around its mid pressure range.

As always, any application requirements on the product label must be followed.

## Guide to nozzles

 GRDC guide and chart https://grdc.com. au/resources-and-publications/grdc-content/grdc-update papers/2007/07/nozzle droplet-size-formulation-and-spray-drift
## Calibrating boom sprays

Boom sprays need to be calibrated regularly to work efficiently and economically. Regular calibratio ensures the right amount of chemical will be applied to the target without costly wastage. The following template will enable you to calculate how much chemical and water to use.
In the template, enter the requested information such as spray tank capacity, chemical rate and ground speed in the space provided in the right column. This information is needed for the calculations. The out the water application rate, you need to know the total spray output, the effective spray width and the actual ground speed. The numbers in the formula show you where to get these figures.

## General information

| Item of equipment to be calibrated. |  |  |
| :--- | :--- | :--- |
| Spray tank capacity (litres). | $\ldots . . . . . . . . \mathrm{L}$ | (5) |
| Area to be sprayed (hectares). | $\ldots . . . . . . . .$. ha | (7) |
| Chemical used. |  |  |

## Recording

| What is the minimum water application rate - if any (from the chemical label)? | ...........L/ha |
| :---: | :---: |
| Select the correct chemical application rate from the label. | ...........L/ha 4 |
| Select an appropriate ground speed. | ...........gear rpm |
| Record spray operation pressure. | ............bar or kPa |
| Record nozzle type and size in the spray unit. <br> Check the rated 'water output' using the manufacturer's nozzle charts. Rated output. | ...........type <br> ............size <br> ............mL/min |
| Record minimum boom height above target for these nozzles. | ............mm |

............mm

## Measuring

Record the output from every nozzle for 1 minute

| 4............. | 5............. |
| :---: | :---: |
| $12 . . . . . . . . . .$. | 13............ |
| $20 . . . . . . . . . .$. | $21 . . . . . . . . . .$. |

Replace any nozzles that vary $10 \%$ or more from the manufacturer's correct nozzle output. (Nozzles with both higher and lower outputs must be replaced.)

Record the actual effective spray width in metres by measuring the distance across the outside nozzles and adding the distance between two adjacent nozzles.

| Actual ground speed* |  |  | $\frac{(\quad) \times 3 .}{(1)}$ | .....km/h |
| :---: | :---: | :---: | :---: | :---: |
| ' 3.6 ' in the calculation is a conversion factor to convert metres to kilometres (metres $\div 1000$ ) and seconds to hours (seconds $\div 3600$ ): distance $/ 1000 \div$ seconds $/ 3600=D / 1000 \times 3600 / S=D / S \times 3600 / 100=D / S \times 3.6$. <br> * To calculate your actual ground speed: <br> - Measure a set distance, for example 100 metres. <br> - Make sure that the spraying conditions are like those in the area that you will be spraying. <br> - Record how long it takes using the appropriate gears and revs. <br> Now you can calculate the water application rate, how much chemical you will need to mix in each tank and how many tank loads you will need to do the whole job. Follow the steps below: <br> 1. Copy the answers you worked out on the previous page into the boxes below. You will need these numbers to do the calculations on this page. (The numbers in black circles (e.g. (2) tell you the step where the answer is on the previous page. |  |  |  |  |
| Total spray ou <br> litres/minute |  |  | pray width <br> 2 | Actual ground sp $\qquad$ |

2. Work out the water application rate by using the numbers you have recorded above. Put these numbers in the correct place in the calculation below.

'600' in the calculation is a conversion factor to convert litres per minute to litres per hour (minutes $\times 60$ ), and kilometres to metres $(\mathrm{km} \times 1000)$, then square metres $\left(\mathrm{m} \times \mathrm{km} \times 1000 \quad=\quad \mathrm{m}^{2}\right)$ to hectares $\left(\mathrm{m}^{2} \div 10000\right)$ : $60 \div 1000 / 10000=60 \div 1 / 10=60 \times 10=600$.

Does this water application rate meet the chemical label requirements?
$\square$ Yes $\square$ No
If not, how could you change this rate to meet this requirement?
3. Now that you know the water application rate you can calculate how much chemical you need to mix in

| Chemical application rate $\qquad$ <br> litres/ha 4 |  | litres 5 |
| :---: | :---: | :---: |
| How much chemical to mix in each tank? | $4(\mathrm{~L} / \mathrm{ha}) \times 5$ (L) | $(\quad) \times(\quad)$ |
|  | 6 (L/ha) | ( ) |

4. Finally, you can now work out how many tank loads you will need to do the job.

[^0]
## Cleaning and decontaminating boom sprays

Cleaning and decontaminating spray equipment for herbicide application are essential Many crops and pastures have been severely damaged or destroyed by failing to ensure that spray equipment was thoroughly cleaned before use
With the advent of crops such as canola and pulse crops in the rotation, and with more emphasis on legume-based pastures, spray units must be decontaminated to ensure that there is no possibility of crop or pasture damage
Labels usually detail decontamination and cleaning procedures for each product

Table 4. Decontaminating boom sprays.

| ide |
| :---: |
| Gundy 240 (imazapic) <br> Intervix (imazamox) <br> Precept${ }^{( }$(MCPA + pyrasulfotole) <br> Roundup Ultra ${ }^{\circ}$ MAX (glyphosate) <br> Sharpen ${ }^{\circledR}$ (saflufenacil 700) <br> Spinnaker® 700 WG (imazethapyr) <br> Velocity ${ }^{\text {® }}$ (pyrasulfotole + <br> bromoxynil) |
| Phenoxy type salt or amine formulations (2,4-D amine, MCPA amine, 2,4-DB, dicamba) |
| Phenoxy type, ester formulations 2,4-D ester, MCPA ester, Flight ${ }^{\ominus}$ EC (picolinafen + bromoxynil + MCPA), Legacy ${ }^{\circ}$ MA (diflufenican + MCPA) |
| Atrazine, simazine |
| Sulfonylurea herbicides e.g. <br> Associate ${ }^{\ominus}$ (metsulfuron-methyl) <br> Atlantis ${ }^{\ominus}$ OD (metsulfuron-methyl + mefenpyr-diethyl) <br> Chlorsulfuron 750 (chlorsulfuron) <br> Hussar ${ }^{\ominus}$ OD (idolsulfuron-methyl <br> sodium + mefenpyr-diethyl) <br> Stinger ${ }^{\ominus}$ (metsulfuron-methyl + <br> aminophralid) |
| Broadstrike ${ }^{\oplus}$, ForageMax ${ }^{\oplus}$, Garlon ${ }^{\circledR}$ 600, Grazon ${ }^{\circledR}$ Extra, Hotshot ${ }^{\circledR}$, Lontrel ${ }^{\ominus}$ Advanced, Paradigm ${ }^{\ominus}$, Pixxaro ${ }^{\oplus}$, Rexade ${ }^{\oplus}$ |
| Herbicides for grass control in broadleaf crops and pastures such as Verdict ${ }^{\oplus}(520 \mathrm{~g} / \mathrm{L})$ |

Read the label before using a product.
Rate of agent $/ 100 \mathrm{~L}$ water
120 g Nufarm tank and

## equipment cleaner or 1 L Absolute Boomer <br> 1 LAbsolute Boomer ${ }^{\circ}$

2 Lhousehold ammonia
or 120 g Nufarm tank and
125 g powdered detergent
or 120 g Nufarm tank and equipment cleaner
125 g powdered detergent equipment cleaner or 1 LAbsolute Boomer 300 mL fresh household chlorine bleach containing $4 \%$ chlorine or 240 g Nufarm tank and equipment cleaner or 1 L Absolute Boomer ${ }^{\ominus}$

500 mL alkali liquid detergent DynamoMatic॰, Surfe, Omo⿻ or of the powder equivalent such as Surfe, Omo ${ }^{\circ}$ 500 mL alkali liquid detergent such as Surfe, $\mathrm{OmO}^{\circ}$, DynamoMatic, or 500 g of the powder equivalent or 1 L Absolute Boomer

Instructions for cleaning and decontamination Rinse thoroughly several times with clean water before use.

Thoroughly agitate and flush a small amount of solution through the system and let it stand in the sprayer overnight. Flush and rinse with clean water several times before use.
Rinse the inside and outside of the tank and flush a small amount through the system for 15-20 minutes. Let it stand for at least 2 hours or preferably overnight. Flush and rinse before use.
Rinse with clean water before and after using the solution.

1. Drain and flush the tank, hoses and boom with clean water for 10 minutes.
2. Fill the tank with clean water and add the chlorine bleach. Flush the
boom and allow to stand for 15 minutes, then drain boom and allow to stand for 15 minutes, then drain. 3. Repeat step 2.
3. Nozzles, screens and filters should be removed and cleaned
separately. separately.
Flush the system, then quarter-fill the tank with water and add the detergent. Start the pump and circulate for at least 15 minutes. Drain Remove and clean.
Remove and clean the filters, screens and nozzles with clean water
and allow them to drain,
If broadleaf herbicides.
Chlorsulfuron 750 WG ), have been used in the spray equipment at any time before grass herbicides such as Verdict ${ }^{\top}$, particular care should be taken to follow the directions for cleaning and decontamination on the label of the relevant broadleaf herbicide.
Before spraying cereals, maize, sorghum or other sensitive crops, filters, screens and nozzles. Drain and repeat the procedure twice. To decontaminate, wash and rinse the system as above, quarter-fil the tank, add the detergent and circulate through the system for at least 15 minutes.
Drain the whole system. Remove filters, screens and nozzles and clean separately.
Finally, flush the system with clean water and allow it to drain.

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## Applying herbicides: managing your legal responsibilities

## The Pesticides Act

The Pesticides Act 1999 is the primary legislative instrument controlling the use of pesticides in NSW and is administered by the Environment Protection Authority (EPA). The underlying principle of the Pesticides Act is that pesticides must only be used for the purpose described on the product label and all the instructions on the label must be followed. Consequently, all label directions must be read by, or explained to, the user before each use of the pesticide
All pesticide users should take reasonable care to protect their own health and the health of others when using a pesticide. They should also make every reasonable attempt to prevent damage occurring from using pesticides, such as off-target drift onto sensitive areas or harm to endangered or protected species.
A Regulation was gazetted in 2017 renewing the requirement for all commercial pesticide users, i.e. all farmers and spray contractors, to keep records of their pesticide application. Numerous sources and websites, including Croplands, have spray record forms. More Protection Authority website The EPA also has a spray record form that can be downloaded and used.
Notes on how to fill these forms in are included in this quide
The 2017 Regulation requires all commercial pesticide users to be trained in pesticide application. Trained aerial applicators, pest control operators and fumigators are
commercial users must have a prescribed qualification Only domestic use, such as home gardens, is excluded, provided the pesticide is a specific domestic/home garden product Covered by the Regulation is pest control by/on:

- public authorities, e.g. State Rail
- golf courses, sporting fields and bowling greens
- agricultural, horticultural, aquacultural and forestry operations
businesses, educational institutions, and hospitals.
Growers are recommended to undertake the SMARTtrain course or the standard ChemCert course, both of which cover the higher AQF3 competencies. For growers with literacy and/or numeracy problems, the lower level AQF2 competency will provide a minimum qualification that satisfies the Regulation.


## Hazardous chemicals legislation

Many registered pesticides are classified as hazardous chemicals. Even those that are not classified as hazardous pose some risk to the health of those who use them or are exposed to them
The Work Health and Safety Act 2011 (WHS), and the Hazardous Chemical section of the Work Health and Safety Regulation 2011, detail legal requirements of suppliers, workers and persons conducting businesses or undertakings in the workplace for hazardous workers from both the short- and long-term health effects of exposure to hazardous chemicals and to improve current health and safety practices by:

- providing health and safety information to workers (including a list or register of all providing health and safety information to workers (including a list or register of al - consultation with, and training, workers
- minimising the risks from hazardous chemicals exposure
- health surveillance (if warranted by the risk assessment in respect of organophosphates).
Both storage and use are covered by the WHS legislation. Storage limits have changed. Premises storing large quantities require both the storage shed and the entrances to the premises to display placards. If very large quantities are stored (which would be rare onfarm), a manifest, site plan and written emergency plan are required. Consult your local
SafeWork NSW office for advice.

Go to web pages:
EPA https://www.epa.nsw. gov.au/you
EPA https://www.epa.nsw. pov.au/your-environmen record-keeping Croplands https:// croplands https:// Products/Application-Tools/Record-Keeping/ spraywise-Log-Book\#. W77HDHszayo

SafeWork NSW's Code of Practice for safely using and storing chemicals (including pesticides and herbicides) in agriculture is an approved industry code of practice and provides practical guidance for farm chemical users to comply with this legislation.

How to complete a Pesticide Application Record Sheet Property/holding: attaching a property map or line drawing, showing adjoining Property/holding: attaching a property map or with paddocks and other features clearly identified, can be helpful. Fill in the residential address.
Applicator details: the person applying the pesticide must fill in their contact details. If the applicator is not the owner, e.g. a contractor or employee, then the owner's details must also be completed. In the case of a contractor, one copy
record should be kept by the applicator and another given to the owner.
Sensitive area identification: if there are sensitive areas, either on the property or on land adjoining, these should be identified in advance and marked on the sensitive areas diagram, together with any precautions or special instructions. When using a contractor or giving the job to an employee, this section should be filled in and given to the person doing the application before the job starts. The property map with sensitive areas marked should be shown to them, and the job fully discussed.
Paddock identification: identify the paddocks/blocks and order of treatment (if there is more than one) in the 'paddock' row of the form. This should be filled in before starting application, along with the residential address. If using a contractor or employee, this information should also be given to them before they start the number/name.
Crop/animal identification: the left side of the crop/situation section of the table
Crop/animal identification: the left side of the $\mathrm{crop} /$ situation section of the tab is for crops, pastures and plants (non-crop, e.g. bushland and fallow), the right would be helpful to provide as much detail about the weed as possible, e.g. 4-leaf. Additional details such as crop variety and growth stage are often important for quality assurance schemes, but could also be necessary to identify the area treated as required by the Regulation.
Product details: transcribe the product name and rate or dose from the label, including all products and additives included in tank mixes. If the use pattern is on a permit, include the permit number, expiry date and label details. A permit rate or dose might vary from the label. Water rate might come from the label, or from your standard practice or calibration. The total litres (L) or kilograms (kg) can be calculated when the application is finished
Withholding periods (WHP): labels often have a number of different withholding periods. These might be different harvest WHP for different crops, grazing WHP or Export Slaughter Interval (ESI). All WHPs are the minimum number of days after place place.
Equipment details: as a minimum, you have to fill in what equipment you used. Specify the setting used for the application, e.g. nozzle type, angle and pressure. With pressure, the reading should be as close to the nozzle as possible. Other details use, or as a chate of calibration and water quality, are useful as a reminder for future is important for herbicide set-up should you have a treatment failure. Wa cer qualty described in terms of its source, e.g. rainwater, dam water, bore water.
Weather: as a minimum, you have to record wind speed and direction. It is better to measure with instruments than estimate. Record any changes during application. You will need to record weather information for all equipment that distributes pesticide through the air.
Rainfall should be recorded for the 24 hours before and after application, unless a different figure is given in the restraints or critical comments sections of the label. Rainfall before or after application can affect efficacy.
Temperature and relative humidity should also be recorded, particularly if either or both are referred to in the restraints or critical comments sections of the label. Temperature and relative humidity can affect efficacy, increase the risk of off-targe drift or could damage the host (e.g. phytotoxicity) or a combination of all three. You must also record the time when you started, and the time when you finished.

## Records must be <br> made within 24 hours o application <br> -written in legible English <br> kept for 3 years <br> pesticide users must be <br> trained.

## Records must <br> include: <br> date

property address
location and area treated name of owner
owner's contact details:
address and phon
operator's name
operator's contact details:
address and pho
area sprayed
crop and pest condition
and density
equipment
nozzle type
spray system pressur
during applicatio
no-spray zone
full product name including
chemical
water rate
water rate
total amount of
concentrate
concentrate
tar amount of chemical mix used time of spraying omperature during the operation during the operation.

## Water quality for herbicide application

Good quality water is important when mixing and spraying herbicides. It should be clean and of good irrigation quality. Poor quality water can reduce the effectiveness of some herbicides and damage spray equipment.
Effects of water quality
Water quality depends on the source of the water (rain-fed tank, dam, river, bore or aquifer) and the season (e.g. heavy rain, drought). There are severa characteristics of water quality that affect chemical performance. Dirt: dirty water has very small soil particles (clay and silt) suspended in effectiveness. This applies especially to glyphosate, paraquat and diquat. Dirt can also block nozzles, lines and filters and reduce the sprayer's orerall performance and life As a guide water is considered dirty when it is difficult to see a 10 c coin in the bottom of a household bucket of water.
Water hardness: water is termed hard when it has a high percentage of
Water hardness: water is termed hard when it has a high percentage of not lather with soap and can cause some chemicals to precipitate. Susceptible chemicals often need to have agents added to overcome this problem.
Formulations of 2,4-DB are particularly sensitive to hard water ( $>400 \mathrm{ppm}$ $\mathrm{CaCO}_{3}$ equivalent). Other herbicides such as glyphosate, 2,4-D amine, MCPA amine and clopyralid can also be affected.
Hard water can affect chemicals by:
causing some to precipitate
affecting the wetting, emulsification and
dispersion properties of some surfactants.
Water pH : pH is a measure of acidity and alkalinity that ranges between 1 and 14 . A pH of alkaline. Most natural waters have a pH of 6.5-8. In alkaline water ( $\mathrm{pH}>8$ ), many chemicals undergo a process called alkaline hydrolysis. This causes the active ingredient to break down into other compounds that can reduce the herbicide's effectiveness over time. This is one reason why spray mixes should not be left in tanks overnight.
Acidic water can also affect the stability and physical properties of some chemical formulations.
Dissolved salts: the total amount of mineral salts dissolved in water is usually measured by the water's electrical conductivity ( EC ). The EC of bore and dam water depends largely on the salt levels in the rock and soil that surrounds them. During a drought, water salinity increases
Very salty water can cause equipment blockages
and is more resistant to pH changes. and is more resistant to pH changes.
Organic matter: water containing organic matter, such as leaves or algae, can block nozzles, lines and filters. Algae can also react with som
effectiveness.
Temperature: very hot or cold water can affect hom some chemicals perform
Acknowledgement: Extracts from Burfitt T, Hardy S and Somers T. 1996. Spray Sense Bulletin No.12. NSW DPI.

| Product (herbicide) | Water quality |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Muddy | Saline | Hard | Alkaline ( $\mathrm{pH}>8$ ) | Acidic ( $\mathrm{pH}<5$ ) |
| 2,4-D or MCPA amine | $\checkmark$ | $\checkmark$ | x | NR | - |
| 2,4-D or MCPA ester | $\checkmark$ | Test | Test | $\checkmark$ | $\checkmark$ |
| 2,4-DB | - | - | X | NR | - |
| Affinity ${ }^{\bullet}$ Force (carfentrazone-ethyl) | $\checkmark$ | $\checkmark$ | $\checkmark$ | X | NR |
| Associate ${ }^{\ominus}$ (metsulfuronmethyl 600) | $\checkmark$ | $\checkmark$ | $\checkmark$ | Marginal | x |
| Brodal ${ }^{\circ}$ Options (diflufenican 500) | - | $\checkmark$ | $\checkmark$ | X | - |
| Chlorsulfuron | $\checkmark$ | $\checkmark$ | $\checkmark$ | Marginal | X |
| Dicamba | $\checkmark$ | $\checkmark$ | NR | NR | - |
| Diuron | $\checkmark$ | Test | $\checkmark$ | $\checkmark$ | - |
| Diuron + 2,4-D amine | $\checkmark$ | Test | X | NR | - |
| Fusilade ${ }^{\circ}$ Forte (fluazifop-p-ethyl 128) | $\checkmark$ | $\checkmark$ | $\checkmark$ | NR | x |
| Glyphosate | x | $\checkmark$ | x | - | $\checkmark$ |
| Gramoxone ${ }^{\oplus} 360$ Pro (paraquat 360) | x | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ |
| Legacy ${ }^{\oplus}$ MA (diflufenican + MCPA) | $\checkmark$ | x | X | NR | - |
| Lontrel ${ }^{\ominus}$ Advanced (clopyralid) | $\checkmark$ | $\checkmark$ | X | X | - |
| Simazine | $\checkmark$ | x | $\checkmark$ | NR | - |
| Trifluralin | - | $\checkmark$ | $\checkmark$ | $\checkmark$ | $\checkmark$ |
| Valor ${ }^{\otimes} /$ Terrain ${ }^{\ominus}$ (flumioxazin) | $\checkmark$ | $\checkmark$ | - | X | $\checkmark$ |
| Verdict (haloxyfop) | $\checkmark$ | $\checkmark$ | $\checkmark$ | NR | $\checkmark$ |

## $=$ okay to use, $\mathrm{X}=$ do not use

$\mathrm{NR}=$ not recommended, but if there is no other option, do not allow the Test = mix herbicides and water in proportion before use if any instaily Test = mix herbicides and water in proportion before use; if any instability is observed, do not use

## mproving water

 qualityWater needs to be tested to see whether it will affect
chemical performance. There are commercial products available to reduce pH (e.g.
Hotup ${ }^{\circ}$. 1700 and Primabufe) Hotup ${ }^{\text {® }}$, LI 700 and Primabuff
soften hard water and clear dirty water. To reduce the effects of very salty water, water from several sources might need to be mixed.

## Using adjuvants, surfactants and oils with herbicides

Herbicides often need help to spread across the leaf and penetrate the leaf surface of target weeds to give the best results. Some herbicides have enough adjuvant of target weeds to give the best results. Some herbicides have enough adjuvant this is usually detailed on the herbicide label.
An adjuvant is any additive that is intended to improve the effectiveness of the herbicide. There are many products that have been developed to help herbicides herbicide. There are many products that have been developed to help herbicides read the herbicide label before opening the container and follow the information printed there.
The Australian Pesticides and Veterinary Medicines Authority (APVMA) classes
adjuvants into 2 categories:

1. adjuvants that enhance product efficacy
2. adjuvants that improve the ease of application.

Adjuvants that enhance product efficacy
Wetters/spreaders enhance adhesion to, and spray droplet spreading on, target surfaces by reducing the surface tension of the herbicide formulation and improving coverage. Examples include:
non-ionic surfactants - non-reactive, i.e. they do not have a negative charge or a positive charge; they remain on the leaf once dry and allow re-wetting after rain, permitting additional herbicide uptake

- anionic surfactants - negative charge
- cationic surfactants - positive charge
- amphoteric surfactants
- organo-silicate surfactants
acidified surfactants.
Stickers increase herbicide adhesion to target surfaces. Examples include:
- latex-based
- terpene/pinolene
pyrrolidone-based.
Penetrants improve active ingredient transfer from the target surface to interior tissues. Examples include:
- mineral oil
- vegetable oil
- esterified vegetable oil
- organo-silicate surfactants
- acidified surfactants.

Extenders enhance the amount of time the active ingredient remains toxic by increasing resistance to environmental degradation. Examples include:

- ammonium sulfate
menthene-based products.
Humectants increase the density/drying time of an aqueous spray deposit.
Examples include:
- glycerol
- propylene glycol
diethyl glycol.
Adjuvants that make application easier
Acidifying/buffering agents adjust the pH of water and minimise herbicide decomposition through alkaline hydrolysis.
Anti-foaming/de-foaming agents reduce or suppress foam formation in the spray tank to prevent overflow.


## Factors affecting

 adjuvant use:1. rop adjuvant can reduce herbicide selectivity and thereby increase crop damage. This is not an issue for fallow and preergent herbicides.
2. Effectiveness or activity - adjuvants are usually dffectiveness of the effectiveness of herbicides.
However, using the wrong type or rate can reduce effectiveness, such as decreasing herbicide
retention on leaves.
3. Water hardness - hard water can lead to poor This particularly occurs with emulsifiable concentrates. High levels of calcium and magnesium ions bind with amine formulations causing hem to be less sfluble and
Water temperature - low
4. Water temperature - low
water temperature can lead to gelling in the tank. High concentration herbicides might not mix and surfactants could perform poorly.

Compatibility agents allow mixing chemicals by preventing antagonism between different ingredients in the spray solution; for example ammonium sulfate.
Drift control agents alter the viscoelastic properties of the spray solution yielding
a coarser spray with greater mean droplet sizes. Examples include

## - polyacrylamides

Dyes are commonly used for spot- or boom-spraying herbicides to detect missed Dyes are commonly used for
spots or to avoid duplication
Water conditioners prevent a reaction between hard water ions in spray solutions and suppress precipitate or salt formation; for example ammonium sulfate.

## Tips for tank-mixing herbicides

- Tank-mixing herbicides is a common practice to improve weed control and broaden the target weed spectrum. There could also be some advantages tha help to avoid herbicide resistance problems.
- Many tank mixes are included on registered herbicide labels.
- Generally, provided herbicides are registered for a particular use, they might be tank-mixed if they are compatible and label mixing instructions are followed.
- Note that some herbicides, although being physically compatible, can be antagonistic to weed control. This information is usually outlined on herbicid labels under compatibility. Ratios for tank-mixing, crop safety, herbicide efficacy and special use of adjuvants, also need to be considered.
The order in which herbicides are mixed is also important. The mixing sequence shown in Table 6 is usually followed.

Table 6. The sequence to be used when tank-mixing herbicides.

## Step Activity

1 Fill the spray tank to at least $70 \%$ full and run agitation
2 Add water conditioning agents if required (e.g. LI 700, Liase or Primabuff ${ }^{\ominus}$ )

3 ( | Add water dispersible granules (WG) or dry flowable (DF) products (including those in |
| :--- | :--- |
| water-soluble bags first) |

$4 \quad$ Add wettable powders (WP)
5 Add flowables or suspension concentrates (e.g. atrazine-simazine liquids)
6 Add emulsifiable concentrates (EC) (e.g. Bromicide ${ }^{\ominus}$ MA, Kambå, Topik 240 EC,
7 Add water-soluble concentrates (e.g. glyphosate, Amicide ${ }^{\oplus}$ Advance 700, Gramoxone ${ }^{\circ} 360$ Pro, Spray.Seed ${ }^{\circ} 250$ )
8 Add surfactants and oils (e.g. BS $1000^{\circ}$, Hasten ${ }^{\circ}$
9 Add soluble fertilisers
Source: adapted from Anon. 2019. Broadacre tank mix guide, Nufarm Australia Ltd.

Table 7. Some commonly used adjuvants.

| Trade name | Constituent | Company | Claim |
| :---: | :---: | :---: | :---: |
| Mineral oil (MO) |  |  |  |
| Ad-Here ${ }^{\text {m" }}$ | Mineral oil $970 \mathrm{~g} / \mathrm{L}$ | Victorian Chemical Co. | Adjuvant for Express ${ }^{\ominus}$, Select ${ }^{\oplus}$, Sertin ${ }^{\circledR} 186$ EC, Verdict ${ }^{\oplus}$. |
| Bonza ${ }^{\circ}$ | Paraffin oil $471 \mathrm{~g} / \mathrm{L}$ | Nufarm | Spreading/wetting agent for certain herbicides. |
| $\begin{aligned} & \hline \text { Supercharge® } \\ & \text { Elite } \end{aligned}$ | Paraffin oil $471 \mathrm{~g} / \mathrm{L}$ | Nufarm | To enhance the wetting, spreading and uptake of systemic herbicides through waxy leaf surfaces. |
| Mineral oil + surfactant (MOS) |  |  |  |
| Hot-up ${ }^{\text {c }}$ | Non-ionic $340 \mathrm{~g} / \mathrm{L}+$ mineral oil $190 \mathrm{~g} / \mathrm{L}$ + ammonium sulfate $140 \mathrm{~g} / \mathrm{L}$ | Victorian Chemical Co. | Wetting, penetrating and reducing antagonism of non-selective herbicides. |
| Hotwire ${ }^{\circledR}$ <br> Spraying Oil | Paraffinic oil $598 \mathrm{~g} / \mathrm{L}+$ non-ionic surfactant $210 \mathrm{~g} / \mathrm{L}$ | Adama | Spreading/wetting agent for many selective herbicides. |
| Uptake ${ }^{\oplus}$ Spraying Oil | Paraffinic oil $582 \mathrm{~g} / \mathrm{L}+$ non-ionic surfactant $208 \mathrm{~g} / \mathrm{L}$ | Corteva Agriscience | Spreading/wetting agent for many selective herbicides e.g. Topik ${ }^{\oplus}$, Verdict ${ }^{\oplus} 520$. |
| Methylated seed oil (MSO) |  |  |  |
| Activoil ${ }^{\circ}$ | Fatty acid esters of canola oil $704 \mathrm{~g} / \mathrm{L}$ | SST Australia Pty Ltd | Improves penetration. Used with certain postemergent herbicides. |
| Adigor ${ }^{\text {ma }}$ | Methyl esters of canola oil, fatty acids solvent $440 \mathrm{~g} / \mathrm{L}$, liquid hydrocarbons $222 \mathrm{~g} / \mathrm{L}$ | Syngenta | Adjuvant for use with Axial ${ }^{\circ} 100 \mathrm{EC}$ and other selective and non-selective herbicides as per label directions. |
| Banjo ${ }^{\circ}$ | Methyl esters of canola oil $725 \mathrm{~g} / \mathrm{L}$ | Nufarm | Wetting/spreading/penetrating agent for certain post-emergent herbicides. |
| Hasten ${ }^{\circ}$ | Fatty acid esters of canola oil $704 \mathrm{~g} / \mathrm{L}+$ surfactant > $15 \%$ | Victorian Chemical Co. | Wetting/spreading/penetrating agent for certain post-emergent herbicides. |
| Supa Stik® Oil | Canola oil $840 \mathrm{~g} / \mathrm{L}$ | Agrichem | Improves droplet deposition and uptake. Used with selective and non-selective herbicides. |
| Non-ionic surfactant (NIS) |  |  |  |
| Activator ${ }^{\text {® }}$ | Non-ionic surfactant $900 \mathrm{~g} / \mathrm{L}$ | Nufarm | Wetting agent. Used with most selective and nonselective herbicides. |
| Agral ${ }^{600}$ | Non-ionic surfactant $600 \mathrm{~g} / \mathrm{L}$ | Syngenta | Wetting/spreading agent for most selective and non-selective herbicides. |
| BS 1000 \% <br> Deltawet ${ }^{\oplus} 1000$ | Alkoxylated alcohol $1000 \mathrm{~g} / \mathrm{L}$ | Nufarm/Tasman Chemicals | Wetting/spreading agent for most selective and non-selective herbicides. |
| Wetspray ${ }^{\circ} 000$ | Non-ionic surfactant $1000 \mathrm{~g} / \mathrm{L}$ | Adama | Wetting/spreading agent for most selective and non-selective herbicides. |
| Wetter TX ${ }^{\circ}$ | Non-ionic surfactant $1040 \mathrm{~g} / \mathrm{L}$ | Nufarm | Used with Roundup ${ }^{\text {® }}$ when treating certain grasses. |
| Sticker/surfactant |  |  |  |
| Bond ${ }^{\text {® }}$ Adjuvant | Synthetic latex $450 \mathrm{~g} / \mathrm{L}+$ non-ionic surfactant $100 \mathrm{~g} / \mathrm{L}$ | Nufarm | Used when the addition of a sticker, spreader and deposit agent is required. |
| Compatability agents |  |  |  |
| Liase $\oplus$ /Liquid Assist | Ammonium sulfate $417 \mathrm{~g} / \mathrm{L}$ | Nufarm/Rutec | Minimise antagonism. For use with glyphosate herbicides. |
| Liquid Boost ${ }^{\text {® }}$ | Ammonium sulfate $417 \mathrm{~g} / \mathrm{L}$ | Rygel Australia | Minimise antagonism. For use with glyphosate herbicides. |
| Acidifying/buffering agents |  |  |  |
| Agri-Buffa ${ }^{\circ}$ | Phosphate esters $430 \mathrm{~g} / \mathrm{L}$ + polyalkylene oxide $100 \mathrm{~g} / \mathrm{L}$ | Agrichem | Wetter, spreader and acidifier; compatible with most herbicides. |
| LI700* | Soyal phospholipids $350 \mathrm{~g} / \mathrm{L}+$ propionic acid $350 \mathrm{~g} / \mathrm{L}$ | Nufarm | Wetter, spreader and acidifier; compatible with most herbicides except sulfonylureas. |
| Primabuff ${ }^{\circ}$ | Onoxynol-9 $266.2 \mathrm{~g} / \mathrm{L}+$ phosphoric acid derivatives $375.1 \mathrm{~g} / \mathrm{L}$ | Nufarm | Penetrant, buffering, acidifying and compatibility aid used with certain non-selectives. |

## Timing herbicide applications with crop growth stages

## Cereal growth stages - the Zadoks scale

A decimal scale describing cereal crop growth stages is now widely used. This scale, called the Zadoks growth scale, describes the principal growth stages, labelled 0 to 9 .
Each primary growth stage is further subdivided into secondary stages, extending the scale from 00 to 99 . The first number represents the growth stage and the second the numbers of plant parts, e.g. $\mathrm{Z12}$ indicates a young plant with
only 2 leaves fully unfolded, commonly referred to as the 2 -leaf stage.
A series of pairs of numbers can be used to further describe the growth stage
For example Z14/21 indicates the main tiller with 4 fully unfolded leaves For example Z14/21 indicates the main tiller with 4 fully unfolded leaves, that additional tillers are counted stage, buly from the main tiller more tiller. Note ely from the main tiller.
The Zadoks scale is based on the individual plant, not the general appearance of a crop. Therefore, to use the scale, a representative selection of plants should be examined from a paddock.
Growth terms used elsewhere in this guide, extracted from registered labels, and their Zadoks equivalents are:
3-leaf: three fully unfolded leaves on main shoot only, Zadoks 13.
5-leaf: five fully unfolded leaves on main shoot only, Zadoks 15 .
Tillering - tiller formation period: plants past seedling stage and before stem elongation, Zadoks 21 to Z29.
Jointing: crop becoming erect or booting up to the stage when the flag leaf is just visible, Zadoks 31 to Z37.
Boot: head plainly felt in stem before head emergence, Zadoks 40 to Z45.
The recommended timing for applying each herbicide is indicated in the chemical control tables in this guide. The terms 'early tillering' and 'late tillering' are not definitive and are commonly used in a very general sense. The number of fully emerged main shoot or stem leaves, together with the number of tillers when there is more than one, is the only accurate measure of the growth stage of a cereal plant.

## Principal growth

 stages0 - Germination
1 - Seedling
2 - Tillering
2-Tillering
3 - Stem elo
4 - Booting
4 - Booting
5 - Ear emer
5 - Ear emergen
6 - Flowering
6 - Flowering
7 - Milk development
8 - Dough development 9 - Ripening
The main stages of interest
to cereal producers applying to cereal producers applying
herbicides are: herbicides are:

1. Seedling growth
2. Seedling gro
3. Tillering
4. Tillering
5. Stem elongation
6. Booting

Identifying cereal seedlings
It is extremely important to accurately identify cereal plants before applying a herbicide for weed control. Cereal seedlings are identified by looking at 4 critical characteristics. This involves taking a close look at the junction of the leaf blade and the leaf sheath (a hand lens is useful).


* Wheat and triticale are difficult to distinguish by vegetative characters. It is possible to distinguish them during early growth by uprooting the seedling and observing the grain shell. Wheat grain shells are pale and oval. Triticale grain shells are darker and longer.
** Oats cannot be distinguished from wild oats during vegetative growth
Figure 3. Identifying cereal seedlings.

Cereal crop growth stages


Figure 4. Cereal crop growth stages.

Table 9．Growth stages for herbicide application

| Product（chemical） | Cereal growth stage－Zadoks scale |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2 leaf | 3 leaf | 4 leaf | 5 leaf－ early till | Mid till | Late till | Full till－ jointing | Booting |
|  | 12 | 13 | 14 | 15－21 | 25 | 29 | 30－36 | 40－49 |
| 2，4－D amine 700 |  |  |  |  |  |  |  |  |
| 2，4－D ester |  |  |  |  |  |  |  |  |
| 2，4－DB |  |  |  |  |  |  |  |  |
| Achieve ${ }^{\bullet}$ WG（tralkoxydim） |  |  |  |  |  |  |  |  |
| Agtryne ${ }^{\circ}$ MA（terbutryn＋MCPA） |  |  |  |  |  |  |  |  |
| Aptitude ${ }^{\ominus}$（metribuzin＋carfentrazone－ethyl） |  |  |  |  |  |  |  |  |
| Arcade ${ }^{\text {（ }}$（prosulfocarb） | Wheat and barley only |  |  |  |  |  |  |  |
| Associate ${ }^{\circ}$（metsulfuron－methyl） |  |  |  |  |  |  |  |  |
| Atlantis ${ }^{\circ} \mathrm{OD}$（mesosulfuron－methyl） | Wheat only |  |  |  |  |  |  |  |
| Axial ${ }^{\text {® }}$ Xtr（ （pinoxaden＋cloquintocet－mexyl） |  |  |  |  |  |  |  | to Z49 |
| Boxer Golde ${ }^{\text {（ }}$（prosulfocarb＋S－metolachlor） | Wheat and barley only |  |  |  |  |  |  |  |
| Broadside ${ }^{\text {（bromoxynil }+ \text { MCPA＋dicamba）}}$ |  |  |  |  |  |  |  |  |
| Broadstrike ${ }^{\circ}$（flumetsulam） |  |  |  |  |  |  |  | to $\mathrm{Z83}$ |
| Bromicide ${ }^{\text {® }}$（bromoxynil） |  |  |  |  |  |  |  |  |
| Bronco ${ }^{\circ} \mathrm{MA}-\mathrm{X}$（bromoxynil＋MCPA） |  |  |  |  |  |  |  |  |
| Bromoxynil＋diflufenican |  |  |  |  |  |  |  |  |
| Chlorsulfuron |  |  |  |  |  |  |  |  |
| Condor（MCPA＋pyraflufen－ethyl） | Low rate only at 2－leaf stage |  |  |  |  |  |  |  |
| Decision ${ }^{\text {® }}$（diclofop－methyl＋sethoxydim） |  |  |  |  |  |  |  |  |
| Diuron ${ }^{\circ} 900$ WG |  |  |  |  |  |  |  |  |
| Ecopar ${ }^{\text {® }}$（pyraflufen－ethyl） |  |  |  |  |  |  |  |  |
| Enforcer ${ }^{\circ} 242$（picloram＋MCPA） |  |  |  |  |  |  |  |  |
| FallowBoss ${ }^{\text {T }}$ Tordon ${ }^{\circ}$（2，4－D amine＋picloram＋aminopyralid） |  |  |  |  |  |  |  |  |
| Flight ${ }^{\text {EC }}$（picolinafen＋bromoxynil＋MCPA） |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| Hotshot ${ }^{\text {® }}$（aminopyralid＋fluroxypyr） |  |  |  |  |  |  | 1 st node |  |
| Hussar ${ }^{\circ}$ OD（idosulfuron－methyl＋mefenpyr－dimethyl） | See label |  |  |  |  |  |  |  |
| Igran ${ }^{\text {® }}$ Flowable（terbutryn） |  |  |  |  |  |  |  |  |
| Intercept ${ }^{\text {（ }}$（imazamox＋imazapyr） |  | Wheat |  | Wheat and barley |  |  | to Z32 |  |
| Kamba®（dicamba） |  |  |  |  |  |  |  |  |
| Kamba ${ }^{\text {M }}$（ MCPA＋dicamba） |  |  |  |  |  |  |  |  |
| Legacy ${ }^{\text {M }}$（ （diflufenican＋MCPA） |  |  |  |  |  |  |  |  |
| Lontrel ${ }^{\text {A }}$ Advanced（clopyralid） |  |  |  |  |  |  |  |  |
| LVE MCPA 570 |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| Precept ${ }^{\text {® }}$（MCPA + pyrasulfotole） | Not barley |  |  | All cereals |  |  |  |  |
| Quadrant ${ }^{\circ}$（MCPA ester＋bromoxynil＋diflufenican＋picolinafen） |  |  |  |  |  | Z28 |  |  |
| Rexade ${ }^{\text {® }}$（pyroxsulam＋halauxifen） | Triticale and wheat only（not durum） |  |  |  |  |  | to Z31 |  |
| Sentry ${ }^{\text {（ }}$（imazapic＋imazapyr） |  |  |  |  |  |  |  |  |
| Starane ${ }^{\ominus}$ Advanced（fluroxypyr） |  |  |  |  |  |  | to Z 39 |  |
| Sulfosulfuron |  |  |  |  |  |  |  |  |
| Talinore（bicyclopyrone＋bromoxynil＋cloquintocet－mexyl） |  |  |  |  |  | to Z32 |  |  |
| Topik® 240 EC（clodinafop－propargyl） |  |  |  |  |  |  |  |  |
| Trezak ${ }^{\text {® }}$（aminopyralid＋halauxifen） |  |  |  |  |  |  |  |  |
| Triathlon ${ }^{\text {（ MCPA }}$＋bromoxynil＋diflufenican） |  |  |  |  |  |  |  |  |
| Velocity ${ }^{\text {® }}$（pyrasulfotole＋bromoxynil） |  |  |  |  |  |  |  |  |
| $\quad$ Recommended and preferred timing In many cereal crops： <br> Less preferred timing 3 leaf（on main stem）stage is before tillering． <br> The recommended application timing has been determined after 5 leaf（on main stem）stage coincides with early tillering． <br> significant research by the marketing company，aiming to minimise 6－7 leaf（ on main stem ）stage coincides with mid to fully tillered stage． <br> crop damage and maximise yield．Pay attention to o vital stages of Jointing or node formation indicates the start of the ereproductive phase <br> crop development：ax 3－5 leaf stage or when tillering starts；and at in the crop，and tillering can be said to be complete，i．e．fully tillered． <br> the start of jointing．  |  |  |  |  |  |  |  |  |

Canola crop growth stages


Figure 5．Canola crop growth stages．

## Take the guesswork out of inversion weather conditions and use WAND



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## Pulse crop growth stages



All pulse species have the same basic structure, with a main stem, which can be
divided into divided into units known as nodes. Two scale leaves where they occur, are not counted as true nodes. A node is made up of a petiole that has stipules where it joins the stem, and leaflets along its length. In some species it terminates in a simple or more complex tendril.

Figure 6. Field pea -
conventional leaf type
(Pisum sativum) e.g. PBA
Percy ${ }^{(1)}$, Sturt ${ }^{(1)}$ Percy ${ }^{\text {b }}$, Sturt ${ }^{~}{ }^{\text {. }}$.


[^1]

Figure 9. Lupin - albus
(Lupinus albus, pictured) (Lupinus albus, pictured) (L. angustifolius).


Figure 10. Chickpea (Cicer arietinum).
3rd node
2nd node
One

- more in older leaves towards the top of plant
Growing point


## Herbicides for control and suppression

Table 10．Guidelines for crop rotations－fallow and pre－sowing weed control－page 1 of 2

| Note：example trade names shown．Others may be available at different concentrations See labels for details． |  |  | Rate |  |  |  |  |  | $\begin{aligned} & \text { ⿳亠丷冖巾 } \\ & \text { ثِ } \end{aligned}$ |  |  | $\begin{aligned} & \overline{\underline{y}} \\ & \hline \end{aligned}$ |  |  | $\stackrel{\square}{\square}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2，4－D amine 700 | 4 |  | ＜0．5 L／ha | 1d | 14d | 14d | － | 7d | 10d | 7d | 7d | 7d | 7 d | 7d | 7d |
|  |  |  | 0．5－0．98 L／ha | 1d | 21d | 21d | － | 14d | 14d | 7d | 14d | 7d | 7 d | 7d | 14d |
|  |  |  | 0．98－1．5 L／ha | 3d | 28d | 28d | － | 21d | 21d | 10d | 14d | 10d | 14d | 10d | 21d |
| 2，4－D LV ester 680 | 4 |  | ＜0．51 L／ha | 1d | 14d | 14d | － | 7d | 10d | 7d | 7d | 7d | 7 d | 7d | 7d |
|  |  |  | 0．51－1．0 L／ha | 1d | 21d | 21d | － | 14d | 14d | 7d | 14d | 7d | 7 d | 7d | 14d |
|  |  |  | 1．0－1．6 L／ha | 3d | 28d | 28d | － | 21d | 21d | 10d | 14d | 10d | 14d | 10d | 21d |
| Atrazine 900 | 5 |  | $0.65-0.87 \mathrm{~kg} /$ <br> ha | － | － | － | － | － | － | － | $\checkmark$ | － | － | － | $\checkmark$ |
| Associate ${ }^{\ominus}$（metsulfuron－ methyl 600） | 2 |  | 5－7 g／ha | 6w | 9mo | － | 6 w | 9mo | － | 9 mo | 9mo | － | 9 mo | 9mo | 9 mo |
| $\begin{array}{\|l} \hline \begin{array}{l} \text { Balance } \\ \text { (isoxaflutole } 750 \text { WG } \end{array} \\ \hline \end{array}$ | 27 |  | $100 \mathrm{~g} / \mathrm{ha}$ | 10w | 9 mo | 9 m | － | Od | 7 m | 9 m | 9 m | 21m | － | 9 m | － |
| Basta ${ }^{\oplus}$（glufosinate－ ammonium 200） | 10 |  | 3.75 L／ha | 14d | 14d | 14d | 14d | 14d | 14d | 14d | 14d | 14d | 14d | 14d | 14d |
| Dual Gold ${ }^{\bullet}$ （S－metolachlor 960） | 15 |  | 1－2 L／ha | 6 mo | 6 mo | 6 mo | 6 mo | 6mo | － | 6mo | 6mo | 6 mo | 6 mo | 6mo | 6mo |
| Express ${ }^{\ominus}$（tribenuron－ methyl 750） | 2 |  | 15－25 g／ha | 3d | － | － | － | － | － | － | － | － | － | － | － |
| Garlon ${ }^{\circ}($ triclopyr 600） | 4 |  | $80-160 \mathrm{~mL} / \mathrm{ha}$ | 7d | － | － | － | 7d | 14d | － | － | － | － | － | － |
| Grazon ${ }^{\ominus}$ Extra（triclopyr 300 ＋picloram 100 ＋ aminopyralid 8） | 4 | NNSW | 0．2 L／ha | 2 mo | 2 mo | 2 mo | － | 4mo | － | 4mo | － | － | － | 6 mo | － |
|  |  | NNSW | 0．3 L／ha | 2 mo | 4mo | 4 mo | － | 6 mo | － | 4mo | － | － | － | 9mo | － |
|  |  | NNSW | 0．4 L／ha | 4mo | 4mo | 4mo | － | 6mo | － | 6mo | － | － | － | 9 mo | － |
|  |  | NNSW | 0．6 L／ha | 4mo | 4 mo | 4 mo | － | 6 mo | － | 6mo | － | － | － | 9mo | － |
|  |  | SNSW | ＜0．5 L／ha | 9 mo | 9 mo | 9 mo | － | 24 mo | － | 24 mo | 24 mo | － | － | 24 mo | 24mo |
| Hotshot®（aminopyralid 10 ＋fluroxypyr 140） | 4 | NNSW | ＜0．75 L／ha | 4 mo | 4mo | 4mo | － | 6 mo | 9 mo | 6 mo | － | － | － | 6 mo | － |
|  |  | SNSW | ＜0．5 L／ha | 9 mo | 9 mo | 9 mo | － | 20 mo | － | 20 mo | 20 mo | － | － | 20 mo | 20 mo |
| Impose ${ }^{\text {® }}$（imazapic 240$)$ | 2 | NNSW | $\begin{aligned} & 150-200 \mathrm{~mL} / \\ & \text { ha } \end{aligned}$ | 4／15mo | － | － | － | 8mo | 24mo | 8mo | － | － | － | 8mo | 8mo |
| Kamba ${ }^{\oplus} 750$（dicamba750) | 4 |  | 0．135 L／ha | 1d | 7 d | 7d | 1d | － | 7d | － | － | － | － | － | 7d |
|  |  |  | $0.185 \mathrm{~L} / \mathrm{ha}$ | 7d | 10d | 10d | 7d | 21d | 7d | － | 14d | － | － | － | 14d |
|  |  |  | $0.375 \mathrm{~L} / \mathrm{ha}$ | 14d | 14d | 14d | 14d | 28d | 14d | － | 21d | － | － | － | 21d |

[^2]| $\stackrel{N}{N}$ | $\frac{\underline{U}}{\bar{y}}$ | $\frac{\stackrel{\rightharpoonup}{\underline{\underline{\omega}}}}{\underline{\bar{\Sigma}}}$ |  | 告 |  | $\begin{aligned} & \stackrel{\rightharpoonup}{\stackrel{3}{3}} \\ & \stackrel{0}{\underline{Z}} \\ & \stackrel{4}{n} \end{aligned}$ |  |  |  |  | $\begin{aligned} & \stackrel{y}{4} \\ & > \end{aligned}$ |  | Comments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| － | 7d | － | － | 3d | － | 7d | 3d | 14d | 7d | 1d | 7d | 1d | When applied to dry soils，at least 15 mm of rain must fall before the start of the plant back period． |
| － | 7d | － | － | 3d | － | 14d | 7d | 14d | 10d | 3d | 7d | 3d |  |
| － | 10d | － | － | 7d | － | 21d | 10d | 21d | 14d | 7d | 10d | 7d |  |
| － | 7d | － | － | 3d | － | 7d | 3d | 14d | 7d | 1d | 7d | 1d | When applied to dry soils，at least 15 mm of rain must fall before the start of the plant back period． |
| － | 7d | － | － | 3d | － | 14d | 7d | 14d | 10d | 3d | 7d | 3d |  |
| － | 10d | － | － | 7d | － | 21d | 10d | 21d | 14d | 7d | 10d | 7d |  |
| － | － | － | － | － | － | － | － | － | － | － | － | $\checkmark$ | Apply July－September for a May－June plant．Higher rate for longer fallow． |
| 14mo | 9 mo | 14mo | － | 9 mo | － | 9 mo | 14mo | 14mo | 14mo | $6 w$ | － | 10d | Applies to soil pH 5．6－8．5．For $\mathrm{pH}>8.6$ ，crop tolerance needs to be field tested before large scale use． |
| 10w | 21 mo | － | 7 mo | 10w | － | － | 7mo | 7mo | 7mo | － | 9 mo | 10w | Significant rainfall and time are required； refer label． |
| 14d | 14d | 14d | 14d | 14d | 14d | 14d | 14d | 14d | 14d | 14d | 14d | 14d |  |
| － | 6 mo | 6 mo | 6 mo | 6 mo | 6 mo | 6mo | － | － | － | 6mo | 6 mo | 6 mo | Non－listed crops have a label use；refer label． |
| 7／21d | － | － | 7／21d | 3d | － | － | 7／21d | 7／21d | 7／21d | － | － | 3d | For listed summer crops，if minimum soil temperatures at planting depth are $\leq 15^{\circ} \mathrm{C}$ for 3 consecutive days，then plant back intervals should be extended to 21 days． |
| 7d | － | － | － | － | － | － | 7d | 7d | 7d | － | － | 7d | Plant backs are for black cracking clays． During drought conditions the plant back period might be significantly longer． |
| － | － | － | － | － | － | － | － | － | － | － | － | 2 mo |  |
| － | － | － | － | － | － | － | － | － | － | － | － | 2 mo |  |
| － | － | － | － | － | － | － | － | － | － | － | － | 4 mo |  |
| － | － | － | － | － | － | － | － | － | － | － | － | 4 mo |  |
| － | 24mo | － | － | － | － | － | － | － | － | － | － | 9 mo |  |
| － | － | － | 5mo | － | － | － | 3 mo | 5 mo | 5 mo | － | － | 4 mo | Plant backs are for black cracking clays． During drought conditions the plant back period might be significantly longer． |
| － | 20 mo | － | － | － | － | － | － | － | － | － | － | 9 mo |  |
| 4／15mo | － | － | 4mo | － | － | － | 18mo | － | 24mo | － | － | 4／15mo | Observe 36 months for non－specified crops and 4 months for imidazoline－tolerant cereals．Minimum re－cropping periods are influenced by numerous factors；refer label． |
| 1d | 7d | 1d | 5d | 1d | 5d | 14d | 1d | 5d | 1d | 1d | － | 1d | When applied to dry soils，at least 15 mm of rain must fall before the start of the plant back period． |
| 3d | 14d | 3d | 5d | 7d | 5d | 21d | 3d | 5d | 7d | 7d | － | 7d |  |
| 7d | 21d | 7d | 10d | 14d | 10d | 28d | 7d | 10d | 14d | 14d | － | 14d |  |

Table 10．Guidelines for crop rotations－fallow and pre－sowing weed control－page 2 of 2.

| Note：example trade names shown．Others may be available at different concentrations． See labels for details． |  |  | Rate | $\frac{\stackrel{\rightharpoonup}{\grave{\omega}}}{\stackrel{\rightharpoonup}{5}}$ |  |  |  |  |  |  | $\begin{aligned} & \text { 冗o } \\ & \frac{0}{0} \\ & \text { 픈 } \end{aligned}$ | $\begin{aligned} & \overline{\mathrm{I}} \\ & \text { In } \end{aligned}$ | $\begin{aligned} & \text { ず } \\ & \stackrel{W}{\leftrightharpoons} \end{aligned}$ |  | $\frac{\square}{\text { ¢ }}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lontrel ${ }^{\ominus}$ Advanced （clopyralid 600） | 4 | NNSW | ＜0．4 L／ha | Od | Od | Od | Od | 3mo | 3 mo | － | － | － | － | 9 mo | － |
|  |  | NNSW | 40－150 mL／ha | Od | Od | Od | Od | 6mo | 6 mo | － | － | － | － | 9mo | － |
|  |  | NNSW | ＞150 mL／ha | Od | od | Od | od | － | － | － | － | － | － | － | － |
|  |  | SNSW | ＜150 mL／ha | Od | Od | Od | Od | 9mo | － | 9 mo | 9mo | 9mo | － | － | 9 mo |
|  |  | SNSW | $\begin{aligned} & <150-250 \\ & \mathrm{~mL} / \mathrm{ha} \end{aligned}$ | Od | Od | Od | Od | 12mo | － | 12 mo | 12mo | 12 mo | － | － | 12mo |
|  |  | SNSW | ＞250 mL／ha | Od | Od | Od | Od | 24 mo | － | 24mo | 24mo | 24mo | － | － | 24mo |
| Palmero ${ }^{\oplus}$ TX （terbuthylazine 750 ＋ isoxaflutole 75） | $5+27$ |  | $0.7-1.0 \mathrm{~kg} / \mathrm{ha}$ | 6 mo | 9 mo | 9 mo | － | Omo | 7 mo | 9 mo | 9 mo | 21 mo | － | 9 mo | － |
| Pixxaro®（fluroxypyr 250 ＋ halauxifen 16．25） | 4 | NNSW | ＜600 mL／ha | 1 mo | 1 mo | 1 mo | － | 7 mo | 4 mo | 7mo | － | － | － | － | － |
|  |  | SNSW | ＜ $400 \mathrm{~mL} / \mathrm{ha}$ | 1 mo | － | － | － | 7mo | － | 7mo | 7mo | 7mo | － | 7mo | － |
| Priority ${ }^{\text {® }}$（florasulam 200） | 2 |  | 15－25 mL／ha | 1w | 8 mo | 8mo | － | 8mo | 6 mo | 8mo | 8mo | 8mo | － | － | 8mo |
| Pyresta ${ }^{\circ}$ Xtreme <br> （pyraflufen－ethyl $2.1+2,4-$ <br> D ester 600） | $14+4$ |  | $\begin{aligned} & 250-500 \mathrm{~mL} / \\ & \text { ha } \end{aligned}$ | 1d | 14d | 14d | － | 7d | 10d | 7d | 7d | 7d | 7d | 7d | 7d |
|  |  |  | $900 \mathrm{~mL} / \mathrm{ha}$ | 1 d | 21d | 21d | － | 14d | 14d | 7d | 14d | 7d | 7d | 7d | 14d |
| Sharpen®（saflufenacil 700 ） | 14 |  | 17－34 g／ha | 1h | 6 w | 6 w | 16w | 1h | 6 w | 1 h | 1h | 1h | 16w | 16w | 1h |
| Shogun ${ }^{\ominus}$（propaquizafop 100） | 1 |  | $\begin{aligned} & 200-300 \mathrm{~mL} / \\ & \text { ha } \end{aligned}$ | 28d | － | － | 28d | － | － | － | － | － | － | － | － |
| Starane ${ }^{\oplus}$ Advanced （fluroxypyr 333） | 4 |  | $0.225 \mathrm{~L} / \mathrm{ha}$ | 7d | － | － | － | 7d | 14d | － | － | － | － | － | － |
|  |  |  | $0.45 \mathrm{~L} / \mathrm{ha}$ | 7d | － | － | － | 7d | 14d | － | － | － | － | － | － |
|  |  |  | $0.9 \mathrm{~L} / \mathrm{ha}$ | 7d | － | － | － | 7d | 28d | － | － | － | － | － | － |
| Striker®（oxyfluorfen 240） | 14 |  | $75 \mathrm{~mL} / \mathrm{ha}$ | Od | － | － | － | － | － | － | － | － | － | － |  |
| Terbyne ${ }^{\ominus}$ Xtreme ${ }^{\circledR}$ （terbuthylazine 875） | 5 |  | $0.86 \mathrm{~kg} / \mathrm{ha}$ | 4mo | 6 mo | 6 mo | 6 mo | 6 mo | Od | 6 mo | 6 mo | 6 mo | 6mo | 6 mo | 6mo |
|  |  |  | $1.2 \mathrm{~kg} / \mathrm{ha}$ | 5 mo | 6 mo | 6 mo | 6 mo | 6 mo | Od | 6 mo | 6 mo | 6 mo | 6mo | 6 mo | 6mo |
| Terrad＇or®（tiafenacil 700） | 14 |  | 15－40 g／ha | 1 h | $1 \mathrm{w}^{*}$ | $1 \mathrm{w}^{*}$ | － | 1h | 6w | 1h | 1h | 1h | － | － | 1h |
| Valor ${ }^{\ominus} / T$ errain ${ }^{\ominus}$ （flumioxazin 500） | 14 |  | $30 \mathrm{~g} / \mathrm{ha}$ | 1h | 5 mo | 5mo | － | 1h | 1h | 1h | 1h | Omo | － | Omo | 1h |
|  |  |  | $120 \mathrm{~g} / \mathrm{ha}$ | 1 mo | 9 mo | 9 mo | － | Omo | － | Omo | Omo | Omo | － | 3mo | 1mo |
|  |  |  | $180 \mathrm{~g} / \mathrm{ha}$ | 2 mo | 9 mo | 9 mo | － | Omo | － | Omo | Omo | 3mo | － | 4 mo | 2 mo |
|  |  |  | Up to $280 \mathrm{~g} / \mathrm{ha}$ | 3 mo | 9 mo | 9 mo | － | 1 mo | 2 mo | Omo | 1 mo | 4mo | － | 6 mo | 3mo |
| Verdict ${ }^{\text {（ }}$（haloxyfop 520） | 1 |  | $150 \mathrm{~mL} / \mathrm{ha}$ | 12w | － | － | 12w | － | － | － | － | － | － | － | － |
| Voraxor®（saflufenacil 250 <br> ＋trifludimoxazin 125） | 14 |  | $100 \mathrm{~mL} / \mathrm{ha}$ | 1h | 6 w | 6w | 4mo | 1h | 6w | 1h | 1h | 1h | 4mo | 4 mo | 1h |
|  |  |  | $\begin{aligned} & 200-240 \mathrm{~mL} / \\ & \mathrm{ha} \end{aligned}$ | 1h | 9 mo | 9 mo | － | 6 mo | 3 mo | 1mo | 1mo | 3 mo | － | － | 3 mo |

Plant back periods are a guide only based on label recommendations．The time indicated between application and safe crop rotation intervals will depend on several factors including rainfall（amount and intensity），soil type（pH，biological
activity and organic carbon），soil type variability within a paddock，temperature and herbicide rate Some crops are moly sensitive to various herbocide ，groups than others．Always take a conservative approach to plant back periods，especially with sensitive or high input crops．

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |

Key：$h=$ hours，$d=$ days，$w=$ weeks，$m 0=$ months，$N R=$ not required，$N N S W=$ northern NSW，$S N S W=$ southern $N S W$ ．
$\checkmark=$ registered for these crops within a spraying／planting window；refer comments．

Table 11. Rainfastness - stock withholding periods - harvest withholding periods - page 1 of 2. Rainfastness: the time interval required between herbicide application and rainfall. Avoid applying foliar uptake herbicides when rain is imminent. The table suggests the time needed between spraying and rainfall for each herbicide to be effective.
Incorporation - pre-emergents: rainfast periods typically do not apply to pre-emergents. Preemergents typically need some form of incorporation, usually cultivation, incorporation by sowing
(IBS) and/or rainfall/irrigation to activate. Notes are provided for each relevant products (IBS) and/or rainfall/irrigation to activate. Notes are provided for each relevant products. Stock grazing or fodder production withholding periods: this is the period of time you must wait after spraying before allowing stock to graze the area or cut for stock feed to ensure the anima produce is free of herbicide residues. Check the latest MRL data with individual companies for produce to be sold on export markets.
Harvest withholding periods: this is the period of time you must wait after spraying before harvesting grain to ensure that grain is free of herbicide residues.

| Herbicide | Rainfastness - hours | Incorporation -pre-emergents | Stock withholding period - days/weeks | Harvest withholding period - days/weeks |
| :---: | :---: | :---: | :---: | :---: |
| 2,4-D amine or ester | 6 | - | 7 d | NR |
| 2,4-DB 500 | 4 | - | 7 d | Not stated. |
| Achieve ${ }^{\text {® }}$ WG (tralkoxydim 400) | 0.5 | - | 14d | NR |
| Affinity ${ }^{\ominus}$ Force (carfentrazone 240) | 6 | - | 14d | NR |
| Agtryne ${ }^{\oplus}$ MA (terbutryn $275+$ MCPA 160) | 6 | - | 7 d | NR |
| Aptitude ${ }^{\ominus}$ (metribuzin 375 + carfentrazone-ethyl 90 ) | 1 | - | 14d | NR |
| Arcade ${ }^{\bullet}$ (prosulfocarb 800) | NA | IBS and rain or irrigation to wet soil within 10 days. | 10 w | NR |
| Associate ${ }^{\ominus}$ (metsulfuronmethyl 600) | 2 | - | NR | Cereal NR Chickpea 7 d. |
| Atlantis ${ }^{\ominus}$ OD (mesosulfuronmethyl 30) | 8 | - | 4 w | 8 w |
| Atrazine 900 | 6-foliar | 20-30 mm rain or irrigation within 10 days. | $\Pi$ canola (pre-em) 15 w ; (post-em) 6 w . Other 28 d . | NR |
| Avadex ${ }^{\circ} \mathrm{Xtra}$ (tri-allate 500) | NA | Incorporation by cultivation or IBS is required. Rain will not incorporate. Refer label. | Canola, cereals, mustards 12 w. Linseed, pulses, safflower 13 w . Additional 28 day slaughter interval. | NR |
| Axial ${ }^{\circ}$ Xtra (pinoxaden 50 + cloquintocet-mexyl 12.5) | 0.5 | - | 21 d | NR |
| Balance ${ }^{\oplus} 750$ WG (isoxaflutole 750) | NA | 15-30 mm rain or irrigation. UV stable. | Chickpea 6 w. Fallow 8 w. | NR |
| Basta ${ }^{\ominus}$ (glufosinateammonium 200) | 6 | - | Post-fallow application 8 w . | NR |
| Bladex ${ }^{\text {® }}$ (cyanazine 900) | 8 | - | Do not graze treated immature crops or cut for stock feed. | NR |
| Boxer Gold® (prosulfocarb 800 + S-metolachlor 120) | NA | IBS and rain or irrigation to wet soil within 10 days. | 10 w | NR |
| $\text { Broadside }{ }^{\ominus} \text { (bromoxynil } 140+$ $\text { MCPA } 280 \text { + dicamba 40) }$ | 3 | - | 8 w | NR |
| Broadstrike® (flumetsulam 800) | 4 | - | Cereals, pulses 4 w . Maize 14 d. | Cereals 4 w . <br> Pulses NR |
| Brodal ${ }^{\ominus}$ Options (diflufenican 500) | 4 | - | 14d | NR |
| Bromicide (bromoxynil 200) | 3 | - | 8 w | NR |
| Bromoxynil 250 + diflufenican 25 | 4 | - | 8 w | NR |
| Bronco ${ }^{\oplus}$ MA-X (bromoxynil $280+$ MCPA 280) | 3 | - | 8 w | NR |
| Callisto (mesotrione 480) | NA | Knife-point press-wheel incorporation by seeding within 3 days. | 10 w | NR |
| Cheetah ${ }^{\circ}$ Gold (fenoxaprop-pethyl 13.6 + diclofop-methyl + sethoxydim 20) | 4 | - | 7 w | NR |

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| Herbicide | Rainfastness <br> - hours | Incorporation-pre-emergents | Stock withholding period - days/weeks | Harvest withholding period - days/weeks |
| :---: | :---: | :---: | :---: | :---: |
| Chlorsulfuron 750 | 4 | - | NR | NR |
| Condor ${ }^{\circledR}$ (MCPA 375 + pyraflufenethyl 10 ) | 6 | - | 14d | NR |
| CRUCIAL® (glyphosate 600) | 1 | - | Barley, canola, linseed, lupin 7 d. Wheat 5 d . | Barley, sorghum, pulses 7 d. Wheat, canola 5 d . Linseed 10 d . Other NR. |
| Decision ${ }^{\ominus}$ (diclofop-methyl $200+$ sethoxydim 20) | 2 | - | 7 w | NR |
| Devrinol-C ${ }^{\circ}$ (napropamide 500 ) | NA | Mechanical incorporation within 2 hours. | 12 w | NR |
| Diclofop-methyl 375 | 2 | - | 7 w | NR |
| Diuron ${ }^{\text {9 }} 900$ | NA | Rain or irrigation to wet soi within 3-4 days. | Pulses 35 d. Other NR. | NR |
| Dual Gold® ( S -metolachlor 960) | NA | Rain or irrigation to wet soil to $30-40 \mathrm{~mm}$ within 10 days. | Canola 10 w. Cereals 8 w. Sorghum 4 w . | NR |
| Ecopar ${ }^{\text {® }}$ (pyraflufen-ethyl 20 ) | 6 | - | 14 d | NR |
| Elantra ${ }^{\oplus}$ Xtreme ${ }^{\ominus}$ (quizalofop-pethyl 200) | 3 | - | Canola, pulses 4 w . | Lupin 6 w. Field pea 9 w. Canola 11 w. Other pulses 12 w. |
| Enforcer® 242 (picloram 26 + MCPA 420) | 4 | - | 7 d | NR |
| Express® (tribenuron-methyl 750) | 2 | - | NR | NR |
| Factor ${ }^{\text {® }}$ WG (butroxydim 250) | 0.5 | - | 14d | NR |
| FallowBoss ${ }^{\oplus}$ Tordon ${ }^{\ominus}$ (2,4-D amine 300 + picloram 75 + aminopyralid 7.5) | 4 | - | 28 d. Refer label. | NR |
| Flight ${ }^{\oplus}$ EC (picolinafen $35+$ bromoxynil $210+$ MCPA 350) | 4 | - | 8 w | NR |
| ForageMax ${ }^{\circledR}$ (halauxifen $100+$ aminopyralid 50) | 3 | - | 2 w | NR |
| Foxtrot ${ }^{\star}$ (fenoxyprop-p-ethyl 69 <br> + cloquintocet-mexyl 34.5) | 4 | - | 3 w | 10 w |
| Frequency ${ }^{\text {® }}$ (topramezone $60+$ cloquintocet-mexyl 60) | 2 | - | 6 w | NR |
| Fusilade ${ }^{\oplus}$ Forte (fluazifop-pethyl 128) | 1 | - | Linseed, canola, medic and vetch 21 d. Pulse 7 w . Lucerne 6 w . Refer label. | Canola, linseed, lupin, pigeon pea, soybean 17 w . Faba bean 5 w. Chickpea, field pea $7 w$. |
| Garlon® (triclopyr 600) | 1 | - | NR | NR |
| $\begin{aligned} & \text { Gramoxone }{ }^{\oplus} 360 \text { Pro } \\ & \text { (paraquat } 360 \text { ) } \end{aligned}$ | 1 | - | Stock 1 d. Horses 7 d . | Pulses 7 d . |
| Grazon ${ }^{\text {E }}$ Extra (triclopyr 300 + picloram $100+$ aminopyralid 8 ) | 1 | - | Domestic grazing NR. ESI 3 d. EGI 42 d. Refer label. | NR |
| Grindstone® (aminopyralid 240) | 1 | - | Dictated by mix partner; refer label. | Dictated by mix partner; refer label. |
| Guerrilla ${ }^{\ominus}$ (paraquat $300+$ amitrole 12) | 1 | - | Stock 1 d. Horses 7 d. Remove stock 3 days before slaughter. | NR |
| Hammer® (carfentrazone ethyl 400) | 1 | - | NR | NR |
| Hotshot ${ }^{\ominus}$ (aminopyralid 10 + fluroxypyr 140) | 1 | - | Domestic grazing 7 d . ESI 3 d. EGI 42 d. Refer label. | NR |
| Hussar® (idosulfuron-methyl 100 + mefenpyr-dimethyl 300) | 8 | - | 4 w | NR |
| Igran ${ }^{\text {® }}$ Flowable (terbutry 500) | 6 | - | 7 d | Field pea 4 w . |
| Impose ${ }^{\text {® }}$ (imazapic 240$)$ | NA | Rain or irrigation to wet soi to 50 mm . | 4 w | NR |

Table 11. Rainfastness - stock withholding periods - harvest withholding periods - page 2 of 2.

| Herbicide | Rainfastness <br> - hours | Incorporation -pre-emergents | Stock withholding period - days/weeks | Harvest withholding period - days/weeks |
| :---: | :---: | :---: | :---: | :---: |
| Intercept® (imazamox 33 + imazapyr 15) | 2 | - | IMI barley, faba bean, field pea, wheat 4 w . CL canola 5 w. | NR |
| Kamba ${ }^{\circ} 750$ (dicamba 750 ) | 4 | - | 7 d | 7 d |
| Kamba ${ }^{\oplus}$ M (MCPA $340+$ dicamba 80) | 4 | - | 7 d | 7 d |
| Legacy ${ }^{\ominus}$ MA (diflufenican $25+$ MCPA 250) | 4 | - | 7 d . Refer to label for grazing precautions. | NR |
| Lontrel ${ }^{\ominus}$ Advanced (clopyralid 600) | 3 | - | Canola, cereals 7 d . | Cereals 10 w . Canola NR. |
| Luximax ${ }^{\text {® }}$ (cinmethylin 750 ) | NA | 10 mm rain or irrigation within 7-10 days; IBS within 3 days. | 7 w | NR |
| Mateno ${ }^{\circ}$ Complete (aclonifen 400 + pyroxasulfone 100 + diflufenican 66) | NA | IBS incorporation and rain within 7-10 days. Do not use with discs for barley. | 6 w | NR |
| MCPA amine and ester | 6 | - | 7 d | NR |
| Outlook ${ }^{\text {® }}$ (dimethenamid-p 720 ) | NA | IBS and rain within 7 days. | Chickpea, field pea, lupin 15 w . | NR |
| Overwatch ${ }^{\text {(bixlozone 400) }}$ | NA | Requires moisture to activate. | 8 w | NR |
| Palmero ${ }^{\oplus}$ TX (terbuthylazine 750 + isoxaflutole 75) | NA | 20-30 mm rain within 3 weeks. | Chickpea 6 w. Fallow 8 w. | NR |
| Paradigm ${ }^{\ominus}$ (florasulam $200+$ halauxifen 200) | 3 | - | 2 w | NR |
| $\begin{aligned} & \text { Pixxaro® (fluroxypyr } 250 \text { + } \\ & \text { halauxifen 16.25) } \end{aligned}$ | 1 | - | 14d | NR |
| Precept ${ }^{\oplus}$ (MCPA $125+$ pyrasulfotole 25) | 2 | - | 4 w | NR |
| Priority ${ }^{\text {® (florasulam 200) }}$ | Refer mix partner | - | Dictated by mix partner; refer label. | Dictated by mix partner; refer label. |
| Prometryn 900 | NA | $20-30 \mathrm{~mm}$ rain or irrigation within 2-3 weeks. | Chickpea 9 w. Other NR. | NR |
| Pyresta ${ }^{\oplus}$ Xtreme (pyraflufen-ethyl $2.1+2,4$-D ester 600) | 6 | - | 7 d | NR |
| Quadrant ${ }^{\oplus}$ (MCPA ester $250+$ bromoxynil 240 + diflufenican 20 + picolinafen 10) | 4 | - | 8 w | NR |
| Raptor® (imazamox 700 ) | 2 | - | Lucerne, pasture legumes 7 d. Soybean 4 w. Field pea 6 w . | NR |
| Reflex ${ }^{\text {® }}$ (fomesafen 240) | NA | Requires rain after application for activation. | 12 w | NR |
| Reglone ${ }^{\circ}$ (diquat 200) | 0.5 | - | 1 d | Canola, pigeon pea, soybean 4 d. Chickpea, faba bean, lentil 2 d . Other NR |
| Rexade ${ }^{\oplus}$ (pyroxsulam $150+$ halauxifen 50) | 6 | - | 4 w | NR |
| Rifle ${ }^{\oplus} 440$ (pendimethalin 440) | NA | 24 h incorporation by cultivation. Rain after application assists. | Not stated. | NR |
| Roundup Ready ${ }^{\text {PL }}$ (glyphosate 540) | 2 | - | Canola 7 or 14 d. Refer label. | Pulses, wheat 7 d . Other NR. |
| Roundup UItraMAX ${ }^{\text {® }}$ (glyphosate 570) | 1 | - | Hay, silage 2 d . Wheat 5 d . Barley 7 d. Other NR | Wheat 5 d . Barley, pulses 7 d . Other NR. |
| Rustler® (propyzamide 500) | NA | Requires $15-25 \mathrm{~mm}$ after application. | Canola, winter pulses 12 w. Other 25 d . | Canola, winter pulses NR. Other 25 d . |
| Sakura* (pyroxasulfone 850) | NA | IBS and rain or irrigation within 10 days. | Triticale, wheat 6 w . Pulses 8 w . | NR |
| Sencor ${ }^{\text {( }}$ (metribuzin 480) | NA | Soil moisture before and follow-up rain or irrigation. | 14 d | NR |

Read the label before using a product.

| Herbicide | Rainfastness - hours | Incorporation -pre-emergents | Stock withholding period - days/weeks | Harvest withholding period - days/weeks |
| :---: | :---: | :---: | :---: | :---: |
| Sentry ${ }^{\text {(imazapic }} 525$ + imazapyr 175) | NA | IBS and 15-20 mm rain within 2 weeks. | Barley, canola 6 w. Wheat 4 w . Oats 8 w . | NR |
| Sharpen ${ }^{\text {® }}$ (saflufenacil 700) | 1 | - | Pulses 7 d . Lucerne 4 w . Cereals, fallow 14 d . | Pulses 7 d . Cereals, other NR |
| Shogun ${ }^{\text {® }}$ (propaquizafop 100) | 1 | - | Legume pasture, lucerne, vetch 3 d. Fallow 2 w . | Canola, linseed 16 w. Faba bean 7 w. Lupin 15 w. Chickpea, field pea, lentil 12 w . |
| Simazine 900 | NA | $10-30 \mathrm{~mm}$ of rain or irrigation. | Chickpea 9 w. Faba bean 8 w. Canola 15 w. | NR |
| Sledge ${ }^{\circ}$ (pyraflufen-ethyl 25 ) | 2 | - | 7 d | Pulse 7d, other NR. |
| Spinnakere (imazethapyr 700) | 2 | - | 14 d | NR |
| Spray.Seed ${ }^{\ominus}$ (paraquat $135+$ diquat 115) | 0.5 | - | 1 d | NR |
| Starane ${ }^{\ominus}$ Advanced (fluroxypyr 333) | 1 | - | 7 d | NR |
| Status ${ }^{\circ}$ (clethodim 240) | 1 | - | All pasture 14 d. Canola, pulses 21 d . | NR |
| Striker® (oxyfluorfen 240) | NA | - | Do not graze treated weeds. | NR |
| Sulfosulfuron 750 | Rain might impede | - | NR | NR |
| Talinor ${ }^{\ominus}$ (bromoxynil 175 + bicyclopyrone 37.5 + cloquintocet-mexyl 9.4) | 2 | - | 8 w | NR |
| Tenet ${ }^{\text {( }}$ (metazachlor 500 ) | NA | IBS with knife-point presswheel and rain within 7-10 days. | 13 w | NR |
| Terbyne ${ }^{\oplus}$ Xtreme ${ }^{\circledR}$ (terbuthylazine 875) | NA | $20-30 \mathrm{~mm}$ rain or irrigation within 2-3 weeks. | Canola, fallow, pulses 6 w. Cereals 8 w . Lucerne 4 w . | NR |
| Terrad'or® (tiafenacil 700) | 1 foliar | IBS with knife-point presswheel for residual use. | Crops 8 w. Fallow Do not allow stock to graze treated weeds. | NR |
| Topik ${ }^{\ominus}$ (clodinafop-propargyl 240 <br> + cloquintocet-mexyl 60) | 2 | - | 4 w | NR |
| Trezac ${ }^{\text {® }}$ (aminopyralid 25 + halauxifen 30 + cloquintocetmexyl 30) | 1 | - | Cereals 14 d . Pastures 28 d . ESI 3 d. Refer label. | NR |
| Triasulfuron 750 | 6 foliar | Rain within 7-10 days assists with residual uses. | Pre-emergent 7 w. Postemergent 14 d . | NR |
| $\begin{aligned} & \text { Triathlon }{ }^{\ominus} \text { (MCPA } 250+ \\ & \text { bromoxynil } 150+\text { diflufenican 25) } \end{aligned}$ | 4 | - | 8 w | NR |
| TriflurX® (trifluralin 480) | NA | Incorporation by cultivation or IBS is required. Rain will not incorporate. | NR | NR |
| Ultro ( (carbentamide 900) | NA | $15-25 \mathrm{~mm}$ rain or irrigation within 2-3 weeks. | 12 w | NR |
| Valor®/Terrain® (flumioxazin 500) | 1 foliar | $15-25 \mathrm{~mm}$ rain or irrigation within 3 weeks. | Cereal 6 w , pulses 12 w . | NR |
| Velocity ${ }^{\circledR}$ (pyrasulfotole 37.5 + bromoxynil 210) | 2 | - | 6 w | NR |
| Verdicte (haloxyfop 520) | 1 | - | Clover, medic 7 d. Lucerne 21 d. Oilseeds, pulses 28 d | NR |
| Voraxor ${ }^{\circledR}$ (saflufenacil $250+$ trifludimoxazin 125) | 1 | Soil moisture pre and follow-up rain or irrigation. | Cereals 6 w. Fallow 5 w + ESI 30 d. Refer label. | NR |
| Weedmaster ${ }^{\ominus}$ DST ${ }^{\ominus}$ (glyphosate 470) | 6 | - | Barley, canola 7 d. Wheat 5 d. Hay/silage 1 d. Other NR. | Canola, wheat 5 d. Barley, pulses, sorghum 7 d . |

Key: $d=$ days, $w=$ weeks, $N R=$ not required when used as directed, $I B S=$ incorporated by sowing, $I M I=$ imidazoline tolerant,
$\mathrm{CL}=$ Clearfield; EGI = export grazing interval, ESI $=$ export slaughter interval, $\mathrm{NA}=$ not applicable.

Table 12. Herbicides for fallow commencement and/or maintenance - grass weed control. For spraying before sowing the crop ( $0-3$ days), refer to plant back periods.

| Note: example trade names shown. Others may be available at different concentrations. See labels for details. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Atrazine 900 | 5 | kg/ha | 55 | - |  |  |  |  |  | 0.65-0.87 |  |  |  |  |  |
| Balance ${ }^{\ominus} 750$ WG (isoxaflutole 750) | 27 | g/ha | >50 | $\begin{gathered} 10 \mathrm{w} \\ +100 \\ \mathrm{~mm} \end{gathered}$ | - | - | - | 100 (S) | - | - | - | - | - | 100 | - |
| Dual Gold ${ }^{\ominus}$ (S-metolachlor 960) | 15 | L/ha | >60 | 6mo | - | - | - | 1.0-2.0 | - | - | - | - | - | 1.0-2.0 | - |
| Gramoxone 360 Pro (paraquat 360) | 22 | L/ha | $\begin{aligned} & 100- \\ & 200 \end{aligned}$ | 1 h | $\begin{gathered} 0.835- \\ 1.67 \end{gathered}$ | $\begin{gathered} 0.835- \\ 1.67 \end{gathered}$ | $\begin{gathered} 0.835- \\ 1.67 \end{gathered}$ | $\begin{gathered} 0.835- \\ 1.67 \end{gathered}$ | - | $\begin{gathered} 0.835- \\ 1.67 \end{gathered}$ | - | $\begin{gathered} 0.835- \\ 1.67 \end{gathered}$ | - | - | - |
| Guerrilla ${ }^{\circ}$ (paraquat 300 + amitrole 12) | $\begin{gathered} 22+ \\ 34 \end{gathered}$ | L/ha | $\begin{aligned} & 50- \\ & 200 \end{aligned}$ | 1 h | - | $\begin{gathered} 0.75- \\ 1.5 \end{gathered}$ | $\begin{gathered} 0.75- \\ 1.5 \end{gathered}$ | $\begin{gathered} \\ \hline 0.75- \\ 1.5 \end{gathered}$ | - | $\begin{gathered} 0.75- \\ 1.5 \end{gathered}$ | - | $\begin{gathered} 0.75- \\ 1.5 \end{gathered}$ | - | - | - |
| Impose ${ }^{\text {® (imazapic } 240}$ | 2 | L/ha | >50 | $\begin{aligned} & 15 / 4 \\ & \mathrm{mo}^{*} \end{aligned}$ | - | - | - | $\begin{gathered} 0.15- \\ 0.2 \end{gathered}$ | $\begin{gathered} 0.15- \\ 0.2 \end{gathered}$ | - | $\begin{gathered} 0.15- \\ 0.2 \end{gathered}$ | - | - | - | - |
| Palmero ${ }^{\circledR}$ TX (terbuthylazine $750+$ isoxaflutole 75 ) | $\begin{aligned} & 5+ \\ & 27 \end{aligned}$ | kg/ha | 50 | $\begin{gathered} 6 \mathrm{mo} \\ +100 \\ \mathrm{~mm} \end{gathered}$ | 1.0 (S) | 1.0 (S) | - | 1.0 | - | - | - | - | - | 1.0 | - |
| Pyresta ${ }^{\oplus}$ Xtreme (pyraflufenethyl $2.1+2,4-\mathrm{D}$ ester 600) | $\begin{aligned} & 14 \\ & +4 \end{aligned}$ | L/ha | $\begin{aligned} & 60- \\ & 150 \end{aligned}$ | 1-3d | - | 0.5 | 0.5 | - | - | $\begin{gathered} 0.25- \\ 0.5 \end{gathered}$ | - | 0.5 | - | - | - |
| Shogun ${ }^{\text {( }}$ (propaquizafop 100) | 1 | L/ha | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | 28d | - | - | - | - | - | - | - | - | - | 0.5 | - |
| Spray.Seed ${ }^{\ominus}$ (paraquat $135+$ diquat 115) | 22 | L/ha | $\begin{aligned} & 50- \\ & 200 \end{aligned}$ | 1h | - | 1-3.2 | 1-3.2 | 0.8-2.4 | - | 1-3.2 | - | 1-3.2 | - | - | 0.8-2.4 |
| Terrad'or® (tiafenacil 700) | 14 | g/ha | >80 | 1h | 15* | 40* | $\begin{gathered} 40 \text { or } \\ 15^{*} \end{gathered}$ | 40* | - | 15* | - | 15-20* | - | - | - |
| Valor ${ }^{\ominus} /$ Terrain ${ }^{\bullet}$ (flumioxazin 500) | 14 | g/ha | $\begin{aligned} & 80- \\ & 200 \end{aligned}$ | 1-2mo | - | - | $\begin{gathered} 210- \\ 280 \end{gathered}$ | - | - | - | - | - | - | $\begin{gathered} 210- \\ 280 \end{gathered}$ | - |
| Verdict® (haloxyfop 520) | 1 | mL/ha | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | 12w | - | - | - | 150 | - | - | 150 | - | - | 150 |  |
| Voraxor® (saflufenacil $250+$ trifludimoxazin 125) | 14 | L/ha | $\begin{aligned} & 80- \\ & 250 \end{aligned}$ | 1h | - | 0.1 | 0.1 | - | - | 0.1 | - | - | - | - | - |
| Weedmaster ${ }^{\text {D }}{ }^{\text {D }}{ }^{\oplus}$ (glyphosate 470) | 9 | L/ha | 80 | 6h | 0.96-7 | 1.15-7 | 0.77-7 | 1.53-7 | 0.77-7 | 0.96-7 | 0.77-7 | 0.77-7 | 2.3-7 | 0.77-7 | 4.6-7 |
| Roundup UltraMAX ${ }^{\circ}$ (glyphosate 570) | 9 | L/ha | $\begin{gathered} 80 \\ \max \end{gathered}$ | 1h | $\begin{gathered} 0.625- \\ 0.95 \end{gathered}$ | $\begin{gathered} 0.95- \\ 1.25 \end{gathered}$ | $\begin{gathered} 0.625- \\ 0.95 \end{gathered}$ | $\begin{array}{\|c\|} \hline 0.625- \\ 1.3 \end{array}$ | - | $\begin{aligned} & 0.95- \\ & 1.25 \end{aligned}$ | $\begin{gathered} 0.625- \\ 1.3 \end{gathered}$ | $\begin{gathered} 0.625- \\ 0.95 \end{gathered}$ | 1.2-1.9 | - | 1.2-1.9 |
| CRUCIAL® (glyphosate 600) | 9 | L/ha | 80 | 6 h | $\begin{gathered} 0.75- \\ 5.5 \end{gathered}$ | 0.9-5.5 | 0.6-5.5 | 1.2-5.5 | 0.6-5.5 | $; \begin{gathered} 0.75- \\ 5.5 \end{gathered}$ | 0.6-5.5 | 0.6-5.5 | 1.8-5.5 | 0.6-5.5 | 3.6-5.5 |

[^3]NIS products might indicate a specific concentration (i.e. NIS 1000); refer to adjuvant chart for example products.

|  |  |  |  |  |  |  | Summer grass |  | $\begin{aligned} & \stackrel{n}{0} \\ & \frac{0}{3} \\ & \frac{0}{3} \end{aligned}$ |  |  |  | Comments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0.65-0.87 |  |  |  |  |  |  |  |  |  |  |  |  | Before lupins, peas or wheat only. Apply late July-mid September for May-June sowing. |
| - | - | - | - | - | - | - | - | - | - | - | - | - | Pre-emergent product. Add a knockdown herbicide if germinated weeds are present. |
| 1.0-2.0 | - | - | - | - | - | 1.0-2.0 | 1.0-2.0 | - | - | - | - | - | Pre-emergent only; add a knockdown mix partner if required. |
| $\begin{gathered} 0.835- \\ 1.67 \end{gathered}$ | - | - | - | - | $\begin{gathered} 0.835- \\ 1.67 \end{gathered}$ | $\begin{gathered} 0.835- \\ 1.67 \end{gathered}$ | $\begin{gathered} 0.835- \\ 1.67 \end{gathered}$ | $\begin{gathered} 0.835- \\ 1.67 \end{gathered}$ | $\begin{gathered} 0.42- \\ 1.4 \end{gathered}$ | - | $\begin{gathered} 0.835- \\ 1.67 \end{gathered}$ | - | Must add an adjuvant. |
| $\stackrel{c}{0.75-}$ | - | - | - | - | $\begin{gathered} 0.75- \\ 1.5 \end{gathered}$ | $\begin{gathered} 0.75- \\ 1.5 \end{gathered}$ | $\begin{gathered} 0.75- \\ 1.5 \end{gathered}$ | $\begin{gathered} 0.75- \\ 1.5 \end{gathered}$ | $\begin{gathered} 0.75- \\ 1.5 \end{gathered}$ | - | $\begin{gathered} 0.75- \\ 1.5 \end{gathered}$ | - | Add NIS when dilution in tank is below $400 \mathrm{~mL} / 100 \mathrm{~L}$ water. Not otherwise required. |
| $\begin{gathered} 0.15- \\ 0.2 \end{gathered}$ | - | - | - | - | - | $\begin{gathered} 0.15- \\ 0.2 \end{gathered}$ | - | - | - | - | - | - | Northern NSW only. Adjuvant NR. <br> *Plant back: W $15 \mathrm{~m}+500 \mathrm{~mm}$, IMI W 4 m <br> +200 mm . |
| - | - | - | - | - | - | - | - | - | 1.0 (S) | - | - | - | Pre-emergent only; add a knockdown mix partner if required. |
| - | - | - | - | - | - | - | - | 0.5 | 0.5 | - | - | - | Add glyphosate. |
| - | - | - | - | - | - | - | - | - | - | - | - | - | Young, active weeds only. Must be followed with a paraquat double knock in 7-14 days. Adjuvant MSO 0.5\%. |
| 0.8-2.4 | - | - | - | 0.8-1.2 | - | 0.8-2.4 | 0.8-2.4 | 1-3.2 | 1-3.2 | - | - | - | Add NIS for Vulpia. |
| - | - | - | - | - | - | - | - | 30* | 20* | - | 20* | - | *Requires glyphosate as a mix partner for control. Adjuvant: MSO $1 \%$. |
| - | - | - | - | - | - | - | $\begin{aligned} & 280 \\ & 280 \end{aligned}$ | - | - | - | - | - | Pre-emergent control and some knockdown activity. Add a knockdown partner. |
| 150 | - | - | - | - | - | 150 | 150 | - | - | 150 | - | - | Adjuvant MOS 0.5\%. A double knock of paraquat must be applied within 7-14 days. |
| - | - | - | - | - | - | - | - | 0.1 | 0.1 | - | - | - | Add glyphosate or paraquat. Can reduce glyphosate efficacy on grasses; increase glyphosate rate to compensate. <br> Adjuvant MSO 1\%. |
| 0.77-7 | 0.77-7 | 0.77-7 | 1.15-7 | 0.77-7 | 1.53-7 | 0.77-7 | 0.77-7 | 1.15-7 | 0.77-7 | 0.77-7 | 0.96-7 | 1.15-7 |  |
| $\underset{1.3}{0.625-}$ | $\stackrel{0.625-}{1.3}$ | $\begin{gathered} 1.9 \mathrm{fb} \\ \hline \end{gathered}$ | 1.2-1.9 | ${ }^{0.425-}$ | - | $\begin{gathered} 0.425- \\ 1.3 \end{gathered}$ | - | $\begin{gathered} 0.95- \\ 1.25 \end{gathered}$ | $\begin{gathered} 0.625- \\ 0.95 \end{gathered}$ | - | $\begin{gathered} 0.95- \\ 1.25 \end{gathered}$ | 1.2-1.9 | Rates and adjuvants vary with weed size and location. |
| 0.6-5.5 | 0.6-5.5 | $\begin{gathered} 1.8 \mathrm{fb} \\ 1.8 \end{gathered}$ | 0.9-5.5 | 0.6-5.5 | 1.2-5.5 | 0.6-5.5 | 0.6-5.5 | 0.9-5.5 | 0.6-5.5 | 0.6-5.5 | $\begin{gathered} 0.75- \\ 5.5 \end{gathered}$ | 0.9-5.5 |  |

Table 13．Herbicides for fallow commencement and／or maintenance－broadleaf weed control－page 1 of 6

| Note：example trade names shown．Others may be available at different concentrations．See labels for details． |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2，4－D amine 700 Drift restrictions apply | 4 | L／ha | $\begin{aligned} & 50- \\ & 250 \end{aligned}$ | 1－7d | － | $\begin{gathered} 0.75- \\ 1.15 \end{gathered}$ | 0.98 | 0.98 | $\begin{aligned} & 0.515- \\ & 0.745 \end{aligned}$ | $\begin{gathered} 0.745- \\ 1.15 \end{gathered}$ | $\begin{aligned} & 0.5- \\ & 0.98 \end{aligned}$ | $\begin{gathered} 0.515- \\ 1.5 \end{gathered}$ | $\begin{gathered} 0.745- \\ 1.15 \end{gathered}$ | $\begin{gathered} 0.28- \\ 1.5 \end{gathered}$ | $\begin{gathered} 0.88- \\ 1.25 \end{gathered}$ |
| 2，4－D LV ester 680 Drift restrictions apply | 4 | L／ha | $\begin{aligned} & 30- \\ & 100 \end{aligned}$ | 1－7d | － | 0.8 | － | － | － | － | － | 0.8 | 0.8 | $\begin{gathered} 0.62- \\ 0.8 \end{gathered}$ | 0．9－1．3 |
| Colex－D®（2，4－D choline 456） Reduced drift option | 4 | L／ha | $\begin{aligned} & 70- \\ & 100 \end{aligned}$ | 1－7d | － | $\begin{aligned} & 1.14- \\ & 1.77 \end{aligned}$ | $\begin{array}{\|l\|l} 1.14- \\ 1.77 \end{array}$ | $\begin{aligned} & 0.43- \\ & 1.25 \end{aligned}$ | $\begin{gathered} 0.79-1 \\ 1.14 \end{gathered}$ | $\begin{aligned} & 1.14- \\ & 1.77 \end{aligned}$ | － | $\begin{aligned} & 0.79-1 \\ & 1.14 \end{aligned}$ | $\begin{gathered} 1.14- \\ 1.77 \end{gathered}$ | $\begin{aligned} & 0.43- \\ & 1.25 \end{aligned}$ | $\begin{gathered} 1.35- \\ 1.84 \end{gathered}$ |
| Dropzone ${ }^{\ominus}$（2，4－D amine 500） Reduced drift option | 4 | L／ha | $\begin{aligned} & 70- \\ & 250 \end{aligned}$ | 1－7d | － | 0.7 | 1.37 | 1.37 | 0.7 | 1.0 | － | 0．7－1．0 | 1.0 | 0．4－1．0 | 1.2 |
| Associate ${ }^{\ominus}$（metsulfuron－ methyl 600） | 2 | g／ha | ＞50 | 10d | － | － | 5 or 7 | 5－7 | － | － | － | － | － | － | 5 or 7 |
| Atrazine 900 | 5 | kg／ha | 55 | － | 0．65－0．87 |  |  |  |  |  |  |  |  |  |  |
| Balance ${ }^{\circ} 750$ WG （isoxaflutole 750） | 27 | g／ha | ＞50 | $\begin{gathered} 10 \mathrm{w} \\ +100 \\ \mathrm{~mm} \end{gathered}$ | － | － | － | － | － | － | － | － | － | － | － |
| Basta ${ }^{\circ}$（glufosinate－ ammonium 200） | 10 | L／ha | 100 | 14d | － | 3.75 | － | － | － | 3.75 | － | － | $\begin{aligned} & 3.75 \\ & \text { (S) } \end{aligned}$ | 3.75 | － |
| Bromicide ${ }^{\text {® }}$（bromoxynil 200） | 6 | L／ha | ＞50 | $\begin{gathered} \text { Not } \\ \text { stated } \end{gathered}$ | － | － | － | $\begin{aligned} & 1.5 \text { or } \\ & 1-1.5^{*} \end{aligned}$ | － | － | － | － | － | － | － |
| Express ${ }^{\circledR}$（tribenuron－ methyl 750） | 2 | g／ha | ＞50 | 3d | － | 25 | － | 25＊ | － | － | 25 | － | － | 25 | － |
| $\begin{aligned} & \text { FallowBoss }^{\text {Tordon }}{ }^{\ominus}(2,4-\mathrm{D} \\ & \text { amine } 300+\text { picloram } 75+ \\ & \text { aminopyralid } 7.5 \text { ) } \end{aligned}$ | 4 | L／ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | 4 mo | － | － | － | － | － | － | － | － | － | － | － |
| Garlon ${ }^{\circ}($ triclopyr 600） | 4 | $\begin{gathered} \mathrm{mL} / \\ \mathrm{ha} \end{gathered}$ | ＞50 | 7d | － | － | － | － | － | － | － | － | － | － | － |
| Gramoxone ${ }^{\oplus} 360$ Pro （paraquat 360） | 22 | L／ha | $\begin{aligned} & 100- \\ & 200 \end{aligned}$ | 1 h | 0．835－1．67 |  |  |  |  |  |  |  |  |  |  |
| Grazon ${ }^{\oplus}$ Extra（triclopyr $300+$ picloram $100+$ aminopyralid 8） | 4 | L／ha | 70 | 2－4mo | － | － | － | － | $\begin{gathered} 0.2-0.4 \\ (\mathrm{~S}) \end{gathered}$ | － | － | － | － | － | － |
| Grindstone ${ }^{\oplus}$ （aminopyralid 240） | 4 | $\begin{gathered} \mathrm{mL/} / \\ \mathrm{ha} \end{gathered}$ | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | 4 mo | $\begin{aligned} & 16 \text { or } \\ & 24 \end{aligned}$ | － | － | $\begin{gathered} 16 \text { or } \\ 24 \end{gathered}$ | $\underset{(S)}{7-15^{*}}$ | － | － | － | － | － | － |
| Guerrilla® ${ }^{\circledR}$（paraquat $300+$ amitrole 12） | $\begin{gathered} 22+ \\ 37 \end{gathered}$ | L／ha | $\begin{aligned} & 100- \\ & 200 \end{aligned}$ | 1 h | 0．75－1．5 |  |  |  |  |  |  |  |  |  |  |
| Hammer ${ }^{\ominus}$（carfentrazone－ ethyl 400） | 14 | $\begin{gathered} \mathrm{mL} / \\ \mathrm{ha} \end{gathered}$ | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | 1 h | － | － | － | － | － | － | － | － | － | － | － |
| Hotshot ${ }^{\oplus}$（aminopyralid $10+$ fluroxypyr 140） | 4 | L／ha | ＞80 | 4mo | － | － | － | 0.5 | － | － | － | － | － | － | － |
| Impose ${ }^{\text {e }}$（imazapic 240$)$ | 2 | L／ha | ＞50 | $\begin{aligned} & 15 / 4 \\ & \mathrm{mo}^{*} \end{aligned}$ | － | $\begin{gathered} 0.15- \\ 0.2 \end{gathered}$ | － | － | － | － | $\begin{gathered} 0.15- \\ 0.2 \end{gathered}$ | － | － | $\begin{gathered} 0.15- \\ 0.2 \end{gathered}$ | － |
| Kamba® 750 （dicamba 750） | 4 | L／ha | ＞50 | 1－14d | － | $\begin{gathered} 0.105- \\ 0.16 \end{gathered}$ | － | $\begin{gathered} 0.105- \\ 0.16 \end{gathered}$ | － | － | － | － | $\begin{gathered} 0.105- \\ 0.16 \end{gathered}$ | $\begin{gathered} 0.105- \\ 0.16 \end{gathered}$ | － |
|  |  |  |  |  | － | $\begin{gathered} 0.215- \\ 0.375 \end{gathered}$ | － | 0.185 | $\begin{aligned} & 0.215- \\ & 0.375 \end{aligned}$ | － | － | $\begin{gathered} 0.215- \\ 0.375 \end{gathered}$ | $\begin{aligned} & 0.215- \\ & 0.375 \end{aligned}$ | $\begin{gathered} 0.215- \\ 0.375 \end{gathered}$ | － |


|  |  |  | 흔 莒 든 |  | $\begin{aligned} & \text { 产 } \\ & \text { 은 } \end{aligned}$ |  |  |  |  | 䓘 |  |  |  |  | Comments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{array}{\|c}  \\ \hline 0.98- \\ 1.5 \end{array}$ | $\begin{gathered} 0.39- \\ 1.25 \end{gathered}$ | － | － | － | $\begin{gathered} 0.515- \\ 1.1 \end{gathered}$ | － | － | $\begin{aligned} & 0.515- \\ & 0.745 \end{aligned}$ | － | $\begin{gathered} 0.39- \\ 1.25 \end{gathered}$ | $\begin{aligned} & 0.515- \\ & 0.745 \end{aligned}$ | － | 0．5－1．5 | $\begin{aligned} & 0.39- \\ & 0.515 \end{aligned}$ | Adding glyphosate is |
| $\begin{gathered} 0.53- \\ 0.8 \end{gathered}$ | 0.41 | － | － | － | $\begin{gathered} 0.62- \\ 0.8 \end{gathered}$ | 0.8 | － | $\begin{gathered} 0.41- \\ 0.8 \end{gathered}$ | 0.8 | － | 0.8 | － | $\begin{gathered} 0.41- \\ 0.8 \end{gathered}$ | － | recommended in most situations， and many factors influence rate and adjuvant selection；refer |
| － | $\begin{aligned} & 0.6- \\ & 0.79 \end{aligned}$ | － | － | － | $\begin{gathered} 0.79- \\ 1.14 \end{gathered}$ | － | － | $\begin{gathered} 0.79- \\ 1.14 \end{gathered}$ | － | $\begin{aligned} & 0.6- \\ & 0.79 \end{aligned}$ | $\begin{gathered} 0.79- \\ 1.14 \end{gathered}$ | － | $\begin{aligned} & 1.14- \\ & 1.77 \end{aligned}$ | $\begin{aligned} & 0.6- \\ & 0.79 \end{aligned}$ | label． <br> The benefits of low drift products |
| 1.37 | $\begin{gathered} 0.55- \\ 0.7 \end{gathered}$ | － | － | － | － | $\begin{gathered} 0.7- \\ 1.5 \end{gathered}$ | 1.0 | － | － | $\begin{aligned} & 0.55- \\ & 1.37 \end{aligned}$ | $\begin{aligned} & 0.7- \\ & 1.75 \end{aligned}$ | － | 1.0 | 0.55 | mix partner；refer label． |
| 5 or 7 | 5 | 5 | 5 | － | 5 | － | － | － | 5 | 5 or 7 | － | － | － | 7 | Add glyphosate；refer label．Plant back is influenced by soil pH． Adjuvant：NIS 1000 0．1\％． |
| 0．65－0．87 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Before lupins，peas or wheat only Apply late July－mid September for May－June sowing． |
| － | － | － | － | － | － | － | － | － | － | － | － | － | － | － | Pre－emergent product．Add a knockdown herbicide if germinated weeds are present． |
| － | － | － | － | － | － | － | 3.75 | － | － | － | － | － | － | － | Warm，humid conditions provide best results． |
| － | － | － | － | － | － | － | $\begin{gathered} 1.5 \text { or } \\ 2.1 \end{gathered}$ | － | － | － | － | － | － | － | ＊Add glyphosate．Rate is influenced by weed size；refer label． |
| － | － | － | － | － | － | － | － | 20＊ | 25＊ | － | － | － | － | － | ＊Add glyphosate；refer label． Adjuvant：NIS 1000 0．1\％． |
| － | － | － | － | － | － | － | － | － | － | － | － | － | － | － | Add glyphosate． |
| － | － | － | － | － | － | － | － | － | － | － | － | － | － | － | Add adjuvant：MOS 0．5\％．Do not use oils if mixing with glyphosate |
| 0．835－1．67 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Must add an adjuvant． |
| － | － | － | － | － | － | － | 0．2－0．4 | － | － | － | － | － | － | － | Add glyphosate．Adjuvant：refer to glyphosate label． |
| － | － | $\begin{gathered} 16 \text { or } \\ 24 \end{gathered}$ | － | $\begin{gathered} 16 \text { or } \\ 24 \end{gathered}$ | $\begin{gathered} 16 \text { or } \\ 24 \end{gathered}$ | － | 7－15＊ | － | $\begin{aligned} & 16 \text { or } \\ & 24 \end{aligned}$ | $\begin{aligned} & 16 \text { or } \\ & 24 \end{aligned}$ | － | $\begin{gathered} 16 \text { or } \\ 24 \end{gathered}$ | － | － | Northern NSW only．Add metsulfuron－methyl 600 and glyphosate． <br> ＊Add picloram＋triclopyr product．Refer label． |
| 0．75－1．5 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Add NIS when dilution in tank is below $400 \mathrm{~mL} / 100 \mathrm{~L}$ water．Not otherwise required． |
| 15－45 | － | － | 15－45 | － | － | － | － | － | － | － | 15－45 | － | － | － | Always add a knockdown herbicide．Adjuvant：MOS 0．5\％． |
| － | － | － | － | － | － | － | － | － | － | － | － | － | － | － | Northern NSW only．Add glyphosate．Adjuvant：refer to glyphosate label． |
| － | － | － | － | － | － | － | $\begin{gathered} 0.15- \\ 0.2 \end{gathered}$ | － | － | － | － | － | － | － | Northern NSW only．Adjuvant：NR ＊Plant back：W $15 \mathrm{~m}+500 \mathrm{~mm}$ ， IMI W $4 \mathrm{~m}+200 \mathrm{~mm}$ ． |
| $\begin{gathered} 0.105- \\ 0.16 \end{gathered}$ | － | － | － | － | － | － | － | $\begin{gathered} 0.105- \\ 0.16 \end{gathered}$ | － | $\begin{gathered} 0.105- \\ 0.16 \end{gathered}$ | － | － | － | $\begin{gathered} 0.105- \\ 0.16 \end{gathered}$ | Pre－cultivation． Add glyphosate． |
| － | － | － | － | － | 0．135＊ | － | － | $\begin{gathered} 0.215- \\ 0.375 \end{gathered}$ | － | $\begin{array}{\|c} 0.185- \\ 0.375 \end{array}$ | － | － | $\begin{gathered} 0.185- \\ 0.375 \end{gathered}$ | － | No till．＊Add glyphosate． $\wedge$ Add 2，4－D amine． |

Table 13. Herbicides for fallow commencement and/or maintenance - broadleaf weed control - page 2 of 6 .

\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Note: example trade names shown. Others may be available at different concentrations. See labels for details. \&  \&  \&  \&  \&  \&  \&  \&  \&  \&  \&  \&  \&  \& $$
\begin{aligned}
& \frac{3}{0} \\
& \frac{0}{0} \\
& \text { 人̀ } \\
& \text { 은 } \\
& \frac{2}{0} \frac{0}{5}
\end{aligned}
$$ \&  <br>
\hline Palmero ${ }^{\circledR}$ TX (terbuthylazine $750+$ isoxaflutole 75 ) \& $5+27$ \& kg/ha \& >50 \& $$
\begin{gathered}
6 \mathrm{mo}+ \\
100 \mathrm{~mm}
\end{gathered}
$$ \& - \& 1.0 \& - \& - \& - \& 1.0 (S) \& - \& - \& - \& 1.0 \& - <br>
\hline Pixxaro® (fluroxypyr 250 + halauxifen 16.25) \& 4 \& L/ha \& >80 \& 1 mo \& - \& - \& - \& - \& - \& - \& - \& 0.4 \& 0.4 \& - \& - <br>
\hline Priority9 (florasulam 200) \& 2 \& $$
\begin{gathered}
\mathrm{mL} / \\
\mathrm{ha}
\end{gathered}
$$ \& $$
\begin{aligned}
& 80- \\
& 100
\end{aligned}
$$ \& 1w \& - \& 25 \& - \& 20 \& - \& 15 \& - \& 20 \& 20 \& 15-25 \& - <br>
\hline Pyresta ${ }^{\circ}$ Xtreme (pyraflufenethyl $2.1+2,4-$ D ester 600) \& $14+4$ \& L/ha \& $$
\begin{aligned}
& 60- \\
& 150
\end{aligned}
$$ \& 1-3d \& - \& - \& $$
\begin{gathered}
0.25- \\
0.5
\end{gathered}
$$ \& - \& - \& - \& - \& $$
\begin{aligned}
& 0.5- \\
& 0.9^{*}
\end{aligned}
$$ \& - \& $$
\begin{aligned}
& 0.5- \\
& 0.9^{*}
\end{aligned}
$$ \& - <br>
\hline Sharpen ${ }^{\circledR}$ (saflufenacil 700 ) \& 14 \& g/ha \& $$
\begin{aligned}
& 80- \\
& 250
\end{aligned}
$$ \& 1 h \& - \& 17-26 \& - \& 17-26 \& 17-26 \& 17-26 \& - \& - \& - \& 17-26 \& 17-26 <br>
\hline Sledge ${ }^{\ominus}$ (pyraflufen-ethyl 25 ) \& 14 \& $$
\begin{gathered}
\mathrm{mL} / \\
\mathrm{ha}
\end{gathered}
$$ \& $$
\begin{aligned}
& 80- \\
& 150
\end{aligned}
$$ \& 1h \& - \& $$
\begin{aligned}
& 50- \\
& 100
\end{aligned}
$$ \& - \& - \& - \& - \& - \& - \& - \& $$
\begin{aligned}
& 50- \\
& 100
\end{aligned}
$$ \& $$
\begin{aligned}
& 50- \\
& 100
\end{aligned}
$$ <br>
\hline Spray.Seed ${ }^{\ominus}$ (paraquat $135+$ diquat 115) \& 22 \& L/ha \& $$
\begin{aligned}
& 50- \\
& 200
\end{aligned}
$$ \& 1 h \& $$
\begin{aligned}
& 0.8- \\
& 2.4^{*}
\end{aligned}
$$ \& - \& - \& 0.8-2.4 \& 0.8-2.4 \& 1.6-2.4 \& 0.8-1.2 \& 1.6-2.4 \& 0.8-2.4 \& 0.8-2.4 \& - <br>
\hline Starane ${ }^{\ominus}$ Advanced (fluroxypyr 333) \& 4 \& L/ha \& >50 \& 7d \& - \& - \& - \& $$
\begin{aligned}
& 0.3- \\
& 0.45
\end{aligned}
$$ \& - \& 0.3 \& - \& 0.45 \& 0.45 \& 0.3 \& - <br>
\hline Striker® (oxyfluorfen 240) \& 14 \& $$
\begin{gathered}
\mathrm{mL} / \\
\mathrm{ha}
\end{gathered}
$$ \& $$
\begin{aligned}
& 30- \\
& 200
\end{aligned}
$$ \& 24h \& \multicolumn{11}{|l|}{75. Enhances brownout when used in combination with glyphosate products. Striker ${ }^{\ominus}$ is registered for use on any weed listed on the partner product label.} <br>
\hline Terbyne ${ }^{\bullet}$ Xtreme ${ }^{\oplus}$ (terbuthylazine 875) \& 5 \& kg/ha \& >50 \& 4mo \& $$
\begin{gathered}
0.86- \\
1.2
\end{gathered}
$$ \& - \& - \& - \& - \& - \& - \& - \& - \& - \& - <br>
\hline Terrad'or` (tiafenacil 700) \& 14 \& g/ha \& $$
\begin{aligned}
& 50- \\
& 150
\end{aligned}
$$ \& 1h \& - \& 15* \& - \& - \& - \& 20 \& - \& - \& - \& 20* \& $$
\begin{gathered}
20 \text { or } \\
15^{*}
\end{gathered}
$$ <br>
\hline \multirow[b]{2}{*}{Valor ${ }^{\ominus} / T e r r a i{ }^{\ominus}{ }^{\ominus}$ (flumioxazin 500)} \& \multirow[b]{2}{*}{14} \& \multirow[b]{2}{*}{g/ha} \& \multirow[b]{2}{*}{$$
\begin{aligned}
& 80- \\
& 200
\end{aligned}
$$} \& \multirow[b]{2}{*}{1-2mo} \& - \& 30 \& - \& 30 \& - \& 30 \& - \& - \& 30 \& 30 \& 30 <br>
\hline \& \& \& \& \& - \& $$
\begin{aligned}
& 210- \\
& 280
\end{aligned}
$$ \& - \& - \& - \& $$
\begin{aligned}
& 210- \\
& 280
\end{aligned}
$$ \& - \& - \& - \& $$
\begin{aligned}
& 210- \\
& 280
\end{aligned}
$$ \& - <br>
\hline Voraxor ${ }^{\ominus}$ (saflufenacil 250 + trifludimoxazin 125) \& 14 \& L/ha \& $$
\begin{aligned}
& 80- \\
& 250
\end{aligned}
$$ \& 1 h \& - \& 0.1 \& 0.1 \& 0.1 \& 0.1 \& - \& - \& - \& - \& 0.1 \& 0.1 <br>
\hline Weedmaster ${ }^{\bullet}$ DST ${ }^{\ominus}$ (glyphosate 470) \& 9 \& L/ha \& 80 \& 6 h \& 0.77-7 \& 0.77-7 \& 0.96-7 \& 1.28-7 \& 1.4-7 \& 1.15-7 \& 0.77-7 \& 1.15-7 \& 1.15-7 \& 0.77-7 \& 1.4-7 <br>

\hline | Roundup UltraMAX ${ }^{\circ}$ |
| :--- |
| (glyphosate 570) | \& 9 \& L/ha \& \[

$$
\begin{gathered}
80 \\
\max
\end{gathered}
$$

\] \& 1 h \& \[

$$
\begin{gathered}
0.425- \\
1.3
\end{gathered}
$$

\] \& - \& \[

$$
\begin{gathered}
0.625- \\
0.96
\end{gathered}
$$

\] \& 1.2-1.9 \& - \& \[

$$
\begin{gathered}
0.625- \\
1.3
\end{gathered}
$$

\] \& \[

$$
\begin{gathered}
0.425- \\
1.3
\end{gathered}
$$

\] \& \[

$$
\begin{gathered}
0.625- \\
1.9
\end{gathered}
$$

\] \& \[

$$
\begin{gathered}
0.625- \\
1.3
\end{gathered}
$$

\] \& \[

$$
\begin{gathered}
0.425- \\
1.3
\end{gathered}
$$
\] \& - <br>

\hline CRUCIAL® (glyphosate 600) \& 9 \& L/ha \& 80 \& 6 h \& 0.6-5.5 \& 0.6-5.5 \& - \& 1-5.5 \& 1.1-5.5 \& 0.9-5.5 \& 0.6-5.5 \& 0.9-5.5 \& 0.9-5.5 \& 0.6-5.5 \& 1.1-5.5 <br>
\hline
\end{tabular}

## For pre-sowing of crops in a seedbed salvage situation ( $0-3 \mathrm{~d}$ pre-sowing), refer to plant backs.

Key: $\mathrm{h}=$ hours, $\mathrm{d}=$ days, $\mathrm{mo}=$ months, $\mathrm{fb}=$ followed by, $\mathrm{IMI}=$ imidazoline tolerant varieties, $\mathrm{NR}=$ not required, $(\mathrm{S})=$ suppression only
Adjuvant key: MO = mineral oil, MOS = mineral oil plus surfactant, MSO = methylated seed oil, NIS = non-ionic surfactant.

|  |  |  |  | $\begin{aligned} & \text { 츨 } \\ & \text { in } \\ & \hline \end{aligned}$ | $\begin{aligned} & \grave{0} \\ & \stackrel{0}{0} \end{aligned}$ |  |  |  |  | $\stackrel{\text { n }}{\stackrel{\circ}{\circ}}$ |  |  |  |  | Comments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0.7-1.0 | - | - | - | - | - | $\begin{aligned} & 0.7- \\ & 1.0 \end{aligned}$ | - | - | 0.7-1.0 | - | - | - | - | - | Pre-emergent only; add a knockdown mix partner if required. |
| - | - | 0.4 | - | - | - | - | - | - | 0.3 | - | - | - | - | - | Add glyphosate. Adjuvant: refer to glyphosate label. |
| - | - | - | - | - | - | - | 15 | 15-20 | - | - | - | - | - | - | Requires tank mixing with fluroxypyr and/or glyphosate. |
| $\begin{gathered} 0.25- \\ 0.5 \end{gathered}$ | - | 0.9* | $\begin{gathered} 0.25- \\ 0.5 \end{gathered}$ | - | - | - | - | - | $\begin{gathered} 0.25- \\ 0.5 \end{gathered}$ | $0.5 \wedge$ | $\begin{gathered} 0.25- \\ 0.5 \end{gathered}$ | - | - | - | *Southern NSW only. $\wedge$ Curled dock only. Add glyphosate. |
| 17-26 | - | 17-26 | - | - | - | - | - | - | - | - | 26-34 | - | 17-26 | 17-26 | Adjuvant: MSO 1\%. Adding paraquat or glyphosate will broaden the spectrum. |
| $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | - | - | - | - | - | - | - | - | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | - | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | - | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | - | Always add a knockdown herbicide; refer label. Adjuvant: MSO. |
| 1.2-3.2 | $\begin{aligned} & 1.2- \\ & 3.2- \end{aligned}$ | - | - | - | - | - | 0.8-2.4 | 1.6-2.4 | 0.8-2.4 | - | 1.2-3.2 | $\stackrel{0.8-}{1.2 \wedge \#}$ | 0.8-2.4 | $\begin{gathered} 0.8- \\ 1.2 \wedge \# \end{gathered}$ | *Add 2,4-D amine. <br> ^Add metsulfuron-methyl 600 at <br> $5 \mathrm{~g} / \mathrm{ha}$. <br> \#Add dicamba. |
| - | - | - | - | - | - | - | 0.3 | $\begin{aligned} & 0.3- \\ & 0.45 \end{aligned}$ | - | - | - | - | - | - ${ }^{*}$ | Add glyphosate. <br> *Add metsulfuron-methyl 600 at <br> $5 \mathrm{~g} / \mathrm{ha}$. |
| 75. Enhances brownout when used in combination with glyphosate products. Striker ${ }^{\circledR}$ is registered for use on any weed listed on the partner product label. |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Add glyphosate. |
| - | - | - | - | - | - | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | - | - | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | - | - | - | - | - | Pre-emergent only; add a knockdown mix partner if required. |
| $\begin{gathered} 40 \text { or } \\ 15^{*} \end{gathered}$ | - | - | - | - | - | - | $\begin{gathered} 20 \text { or } \\ 15^{*} \end{gathered}$ | - | - | - | 15* | $\begin{gathered} 20 \text { or } \\ 15^{*} \end{gathered}$ | $\begin{gathered} 20 \text { or } \\ 15^{*} \end{gathered}$ | 20* | *Add glyphosate; refer label. |
| 30 | - | - | - | - | - | - | 30 | - | 30 | - | 30 | - | - | - | Must add a knockdown herbicide partner. Adjuvant: MSO 0.5\%. |
| - | - | - | - | - | - | - | $\begin{aligned} & 280- \\ & \end{aligned}$ | - | - | - | - | - | - | - | Pre-emergent control and some knockdown activity. Add a knockdown partner. |
| 0.1 | - | 0.1 | - | - | - | - | 0.1 | - | - | - | 0.1 | 0.1 | 0.1 | 0.1 | Add glyphosate or paraquat. Can reduce glyphosate efficacy on grasses; increase glyphosate rate to compensate. <br> Adjuvant: MSO 1\%. |
| 0.96-7 | 1.4-7 | $\begin{gathered} 0.77- \\ 7 \end{gathered}$ | $\begin{gathered} 1.53- \\ 7 \end{gathered}$ | $\begin{gathered} 0.77- \\ 7 \end{gathered}$ | 1.15-7 | ${ }_{7}^{0.77-}$ | 1.4-7 | 1.15-7 | 0.77-7 | 0.77-7 | 1.15-7 | 2.3-7 | 1.4-7 | 1.4-7 | *Add 2,4-D amine. Many factors influence rate; refer label. |
| $\begin{aligned} & 0.32- \\ & 1.25 \end{aligned}$ | - | - | - | - | - | - | - | $\begin{gathered} 0.625- \\ 1.3 \end{gathered}$ | $\begin{gathered} 0.425- \\ 1.3 \end{gathered}$ | $\begin{gathered} 0.625- \\ 1.9 \end{gathered}$ | 1.2-1.9 | - | - | $\begin{gathered} 0.32- \\ 0.95 \end{gathered}$ | *Add triclopyr. Many factors influence rate; refer label. |
| $\begin{gathered} 0.75- \\ 5.5 \end{gathered}$ | $\begin{aligned} & 1.1- \\ & 5.5 \end{aligned}$ | $\begin{gathered} 0.6- \\ 5.5 \end{gathered}$ | $\begin{gathered} 1.2- \\ 5.5 \end{gathered}$ | $\begin{gathered} 0.6- \\ 5.5 \end{gathered}$ | 0.9-5.5 | $\begin{gathered} 0.6- \\ 5.5 \end{gathered}$ | 1.1-5.5 | 0.9-5.5 | 0.6-5.5 | 0.6-5.5 | 0.9-5.5 | $\begin{gathered} 1.8- \\ 5.5 \end{gathered}$ | 1.1-5.5 | 1.1-5.5 | *Add 2,4-D amine. Many factors influence rate; refer label. |


| Note: example trade names shown. Others may be available at different concentrations. See labels for details. |  |  |  |  |  |  |  |  |  |  |  |  |  |  | $\begin{aligned} & \frac{u n}{0} \\ & \stackrel{y}{\nu} \end{aligned}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2,4-D amine 700 Drift restrictions apply | 4 | L/ha | $\begin{aligned} & 50- \\ & 250 \end{aligned}$ | 1-7d | $\begin{gathered} 0.65- \\ 1.1 \end{gathered}$ | $\begin{gathered} 0.28- \\ 1.5 \end{gathered}$ | $\begin{gathered} 0.745- \\ 1.15 \end{gathered}$ | 0.98 | $\begin{gathered} 0.98- \\ 1.5 \end{gathered}$ | $\begin{gathered} 0.8- \\ 1.5 \end{gathered}$ | $\begin{gathered} 1.25- \\ 1.5 \end{gathered}$ | - | $\begin{gathered} 0.39- \\ 1.5 \end{gathered}$ | $\begin{gathered} 0.515- \\ 0.745 \end{gathered}$ | $\begin{aligned} & 0.39- \\ & 0.515 \end{aligned}$ | $\begin{aligned} & 0.5- \\ & 1.5 \end{aligned}$ |
| 2,4-D LV ester 680 <br> Drift restrictions apply | 4 | L/ha | $\begin{aligned} & 30- \\ & 100 \end{aligned}$ | 1-7d | - | 0.8 | - | - | 0.8 | 0.8 | - | - | $\begin{gathered} 0.41- \\ 0.8 \end{gathered}$ | - | - | $\begin{gathered} 0.41- \\ 0.8 \end{gathered}$ |
| Colex-D® (2,4-D choline 456) Reduced drift option | 4 | L/ha | $\begin{aligned} & 70- \\ & 100 \end{aligned}$ | 1-7d | 1-1.69 | $\begin{gathered} 0.43- \\ 1.25 \end{gathered}$ | - | - | - | - | $\begin{gathered} 0.79- \\ 1.14 \end{gathered}$ | - | $\begin{aligned} & 0.6- \\ & 0.79 \end{aligned}$ | $\begin{gathered} 0.79- \\ 1.14 \end{gathered}$ | $\begin{aligned} & 0.6- \\ & 0.79 \end{aligned}$ | $\begin{aligned} & 1.14- \\ & 1.77 \end{aligned}$ |
| Dropzone ${ }^{\circledR}$ (2,4-D amine 500) Reduced drift option | 4 | L/ha | $\begin{aligned} & 70- \\ & 250 \end{aligned}$ | 1-7d | 2.1 | $\begin{gathered} 0.4- \\ 2.1 \end{gathered}$ | - | 1.37 | $\begin{aligned} & 0.7- \\ & 1.37 \end{aligned}$ | 1.1 | - | - | 0.55-1 | 0.7 | 0.55 | 1.0 |
| Associate ${ }^{\oplus}$ (metsulfuronmethyl 600) | 2 | g/ha | >50 | 10d | - | 5 | - | - | - | - | - | - | 5 | - | 5 | - |
| Atrazine 900 | 5 | $\begin{aligned} & \mathrm{kg} / \\ & \mathrm{ha} \end{aligned}$ | 55 | - | 0.65-0.87 |  |  |  |  |  |  |  |  |  |  |  |
| Balance 750 WG (isoxaflutole 750) | 27 | g/ha | >50 | $\begin{gathered} 10 \mathrm{w}+ \\ 100 \mathrm{~mm} \end{gathered}$ | 100 | - | - | - | - | - | - | - | - | - | - | - |
| Basta ${ }^{\circ}$ (glufosinateammonium 200) | 10 | L/ha | 100 | 14d | 3.75 | - | - | - | - | - | - | - | - | - | - | - |
| Bromicide® (bromoxynil 200) | 6 | L/ha | >50 | Not stated | - | - | - | - | - | - | - | - | - | - | - | - |
| Express ${ }^{\circledR}$ (tribenuronmethyl 750) | 2 | g/ha | >50 | 3d | - | - | - | - | - | - | - | - | - | - | 30 | - |
| FallowBoss ${ }^{\oplus}$ Tordon ${ }^{\circledR}$ (2,4-D amine 300 + picloram 75 + aminopyralid 7.5) | 4 | L/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | 4mo | 0.7 | - | - | - | - | - | - | - | - | - | - | - |
| Garlon ${ }^{\circ}$ (triclopyr 600) | 4 | $\begin{gathered} \mathrm{mL} / \\ \mathrm{ha} \end{gathered}$ | >50 | 7d | - | - | - | - | - | - | - | - | - | - | - | $\begin{aligned} & 120- \\ & 160 \end{aligned}$ |
| Gramoxone 360 Pro (paraquat 360) | 22 | L/ha | $\begin{aligned} & 100- \\ & 20 \end{aligned}$ | 1 h | 0.835-1.67 |  |  |  |  |  |  |  |  |  |  |  |
| Grazon ${ }^{\circledR}$ Extra (triclopyr 300 + picloram $100+$ aminopyralid 8) | 4 | L/ha | 70 | 2-4mo | - | - | - | - | - | - | - | $\begin{aligned} & 0.3- \\ & 0.5 \end{aligned}$ | - | - | - | $\begin{aligned} & 0.2- \\ & 0.4 \end{aligned}$ |
| Grindstone ${ }^{\circ}$ (aminopyralid 240) | 4 | $\begin{gathered} \mathrm{mL} / \\ \mathrm{ha} \end{gathered}$ | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | 4mo | - | - | - | - | - | - | - | - | - | - | $\begin{gathered} 16 \text { or } \\ 24 \end{gathered}$ | 7-15* |
| Guerrilla® ${ }^{\text {(paraquat }} 300$ + amitrole 12) | $\begin{aligned} & 22 \\ & + \\ & 37 \end{aligned}$ | L/ha | $\begin{aligned} & 100- \\ & \end{aligned}$ | 1 h | 1.7-2 | 0.75-1.5 |  |  |  |  |  | - | 0.75-1.5 |  |  |  |
| Hammer® (carfentrazoneethyl 400) | 14 | $\begin{aligned} & \mathrm{mL} / \\ & \mathrm{ha} \end{aligned}$ | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | 1h | - | - | - | - | - | - | - | - | - | 15-45 | - | - |
| Hotshot ${ }^{\circledR}$ (aminopyralid $10+$ fluroxypyr 140) | 4 | L/ha | >80 | 4mo | - | - | - | - | - | - | - | - | - | - | - | - |
| Impose ${ }^{\text {e }}$ (imazapic 240$)$ | 2 | L/ha | >50 | 15/4mo* | - | - | - | - | - | - | - | - | - | - | - | - |
| Kambå 750 (dicamba 750) | 4 | L/ha | >50 | 1-14d | - | - | - | - | - | - | - | - | - | - | $\begin{gathered} 0.105- \\ 0.16 \end{gathered}$ | - |
|  |  |  |  |  | - | - | - | - | 0.185 | $0.185 \wedge$ | $\begin{gathered} 0.215- \\ 0.375 \end{gathered}$ | - | - | - | - | - |


|  |  | $\begin{aligned} & \text { 흔 } \\ & \sum_{i}^{\sum} \end{aligned}$ | $\begin{aligned} & \text { n } \\ & \frac{0}{5} \\ & \stackrel{H}{0} \\ & \stackrel{H}{n} \end{aligned}$ |  |  |  | $\begin{aligned} & \tilde{0} \\ & \stackrel{y y}{0} \\ & \stackrel{y}{0} \\ & \frac{0}{2} \end{aligned}$ |  | $\begin{aligned} & \text { 듣 } \\ & \text { 듬 } \end{aligned}$ |  |  | Comments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0.5-1.5 | $\begin{gathered} 0.745- \\ 1.25 \end{gathered}$ | 0.8-0.9 | $\begin{aligned} & 0.2- \\ & 1.25 \end{aligned}$ | $\begin{gathered} 0.28- \\ 1.5 \end{gathered}$ | - | $\begin{aligned} & 0.39- \\ & 1.5 \end{aligned}$ | - | - | - | $\begin{aligned} & 0.5- \\ & 1.15 \end{aligned}$ | $\begin{aligned} & 0.39- \\ & 0.745 \end{aligned}$ |  |
| $\begin{gathered} 0.41- \\ 0.8 \end{gathered}$ | 0.8 | 0.8 | $\begin{gathered} 0.41- \\ 0.8 \end{gathered}$ | 0.8 | - | 0.8 | - | - | - | - | - | Adding glyphosate is recommended in most situations, and many factors influence rate and adjuvant selection; refer label. |
| $\begin{gathered} 1.14- \\ 1.77 \end{gathered}$ | $\begin{gathered} 1.14- \\ 1.77 \end{gathered}$ | - | $\begin{array}{\|c\|} \hline 0.43- \\ 1.25 \end{array}$ | $\begin{gathered} 0.43- \\ 1.25 \end{gathered}$ | - | $\begin{aligned} & 0.6- \\ & 0.79 \end{aligned}$ | - | - | - | - | $\begin{aligned} & 0.6- \\ & 0.79 \end{aligned}$ | The benefits of low drift products can be negated with the wrong mix partner; refer label. |
| 1.0 | 1-1.75 | 1.12 | $\begin{array}{\|c} \hline 0.28- \\ 1.37 \end{array}$ | $\begin{aligned} & 0.4- \\ & 1.37 \end{aligned}$ | - | $\begin{aligned} & 0.55- \\ & 1.37 \end{aligned}$ | - | - | - | - | 0.55 |  |
| - | - | - | 5 | - | - | 5 or 7 | - | - | - | - | 5 | Add glyphosate; refer label. Plant back is influenced by soil pH. Adjuvant: NIS 1000 0.1\%. |
| 0.65-0.87 |  |  |  |  |  |  |  |  |  |  |  | Before lupins, peas or wheat only. Apply late July-mid September for May-June sowing. |
| - | - | - | - | - | - | - | - | - | - | - | - | Pre-emergent product. Add a knockdown herbicide if germinated weeds are present. |
| 3.75 | - | - | - | - | - | - | - | 3.75 | - | - | - | Warm, humid conditions provide best results. |
| - | - | - | - | - | - | - | - | - | - | - | - | *Add glyphosate. Rate is influenced by weed size; refer label. |
| - | - | 15* | - | 20 | - | - | - | 20* | - | - | $\begin{gathered} 20 * \text { or } \\ 30 \end{gathered}$ | *Add glyphosate; refer label. Adjuvant: NIS 1000 0.1\%. |
| - | - | - | - | - | - | - | - | - | - | - | - | Add glyphosate. |
| $\begin{aligned} & 80- \\ & 160 \end{aligned}$ | - | - | - | - | - | - | - | - | - | - | - | Add adjuvant: MOS 0.5\%. Do not use oils if mixing with glyphosate. |
| 0.835-1.67 |  |  |  |  |  |  |  |  |  |  |  | Must add an adjuvant. |
| 0.2-0.4 | - | - | - | - | - | - | - | - | - | - | - | Add glyphosate. Adjuvant: refer to glyphosate label. |
| 7-15* | - | - | $\begin{gathered} 16 \text { or } \\ 24 \end{gathered}$ | $\begin{gathered} 16 \text { or } \\ 24 \end{gathered}$ | $\begin{gathered} 16 \text { or } \\ 24 \end{gathered}$ | - | - | $\begin{aligned} & 16 \text { or } \\ & 24 \end{aligned}$ | - | - | $\begin{gathered} 16 \text { or } \\ 24 \end{gathered}$ | Northern NSW only. Add metsulfuron-methyl 600 and glyphosate. *Add picloram + triclopyr product; refer label. |
| 0.75-1.5 |  |  |  |  |  |  |  |  |  |  |  | Add NIS when dilution in tank is below $400 \mathrm{~mL} / 100 \mathrm{~L}$ water. Not otherwise required. |
| - | - | - | - | - | - | 15-45 | - | - | - | - | - | Always add a knockdown herbicide. Adjuvant: MOS 0.5\% |
| - | - | - | - | - | - | - | - | 0.5 | - | - | - | Northern NSW only. Add glyphosate. Adjuvant: refer to glyphosate label. |
| - | - | $\begin{gathered} 0.15- \\ 0.2 \end{gathered}$ | - | - | - | - | - | $\begin{gathered} 0.15- \\ 0.2 \end{gathered}$ | - | - | - | Northern NSW only. Adjuvant: NR. <br> *Plant back: W $15 \mathrm{~m}+500 \mathrm{~mm}$; IMI W $4 \mathrm{~m}+200$ mm . |
| - | - | $\begin{gathered} 0.105- \\ 0.16 \end{gathered}$ | $\begin{gathered} 0.105- \\ 0.16 \end{gathered}$ | - | - | $\begin{gathered} 0.105- \\ 0.16 \end{gathered}$ | - | - | - | - | $\begin{gathered} 0.105- \\ 0.16 \end{gathered}$ | Pre-cultivation. Add glyphosate. |
| - | - | $\begin{gathered} 0.215- \\ 0.375 \end{gathered}$ | - | 0.185 | - | - | - | - | - | - | - | No till. *Add glyphosate. ^Add 2,4-D amine. |

Table 13. Herbicides for fallow commencement and/or maintenance - broadleaf weed control - page 4 of 6

| Note: example trade names shown. Others may be available at different concentrations. See labels for details. |  |  |  |  |  |  |  |  |  |  |  |  |  |  | $\begin{aligned} & \frac{\boxed{0}}{\overline{0}} \\ & \stackrel{y}{N} \end{aligned}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Palmero ${ }^{\circ}$ TX (terbuthylazine $750+$ isoxaflutole 75 ) | $\begin{aligned} & 5+ \\ & 27 \end{aligned}$ | $\begin{aligned} & \mathrm{kg} / \\ & \mathrm{kg} \\ & \mathrm{ha} \end{aligned}$ | >50 | $6 \mathrm{mo}+$ <br> 100 mm | $\begin{gathered} 0.7- \\ 1.0 \end{gathered}$ | 1.0 | - | - | - | - | - | - | - | 1.0 | 1.0 | - |
| Pixxaro ${ }^{\circ}$ (fluroxypyr 250 + halauxifen 16.25) | 4 | L/ha | >80 | 1mo | - | - | 0.4 | - | - | - | - | - | - | 0.3 | - | - |
| Priority ${ }^{\text {( }}$ (florasulam 200) | 2 | $\begin{aligned} & \mathrm{mL} / \\ & \mathrm{ha} \end{aligned}$ | $\begin{aligned} & 80- \\ & 100 \end{aligned}$ | 1w | - | - | - | - | - | - | - | - | - | 25 | - | - |
| Pyrestå ${ }^{\circ}$ Xtreme (pyraflufenethyl 2.1 + 2,4-D ester 600) | $\begin{array}{r} 14 \\ +4 \end{array}$ | L/ha | $\begin{aligned} & 60- \\ & 150 \end{aligned}$ | 1-3d | - | - | - | - | - | - | - | - | - | $\begin{gathered} 0.5- \\ 0.9 \end{gathered}$ | $\begin{gathered} 0.25- \\ 0.5 \end{gathered}$ | $\begin{aligned} & 0.5- \\ & 0.9^{*} \end{aligned}$ |
| Sharpen® (saflufenacil 700) | 14 | g/ha | $\begin{aligned} & 80- \\ & 250 \end{aligned}$ | 1h | - | - | - | 17-26 | - | - | - | - | - | 17-26 | 17-26 | - |
| Sledge® (pyraflufen-ethyl 25) | 14 | $\begin{aligned} & \mathrm{mL} / \\ & \mathrm{ha} \end{aligned}$ | $\begin{aligned} & 80- \\ & 150 \end{aligned}$ | 1h | - | - | - | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | - | - | - | - | - | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | - | $\begin{aligned} & 80- \\ & 160 \end{aligned}$ |
| Spray.Seed ${ }^{\ominus}$ (paraquat $135+$ diquat 115) | 22 | L/ha | $\begin{aligned} & 50- \\ & 200 \end{aligned}$ | 1h | $\begin{gathered} 0.8- \\ 2.4 \end{gathered}$ | $\begin{gathered} 0.8- \\ 2.4 \end{gathered}$ | $\begin{gathered} 1.2- \\ 1.6 \end{gathered}$ | - | $\begin{aligned} & 0.8- \\ & 3.2^{*} \end{aligned}$ | - | $\begin{gathered} 1.2- \\ 3.2 \end{gathered}$ | - | $\begin{gathered} 0.8- \\ 1.2 \wedge \# \end{gathered}$ | $\begin{gathered} 1.2- \\ 1.8 \end{gathered}$ | $\left.\begin{gathered} 0.8- \\ 3.2 \wedge \# \end{gathered} \right\rvert\,$ | - |
| Starane ${ }^{\circledR}$ Advanced (fluroxypyr 333) | 4 | L/ha | >50 | 7d | - | - | 0.45 | - | - | - | - | - | - | $\begin{gathered} 0.3 \text { or } \\ 0.6 \end{gathered}$ | - | - |
| Striker® (oxyfluorfen 240) | 14 | $\begin{gathered} \mathrm{mL} / \\ \mathrm{ha} \end{gathered}$ | $\begin{aligned} & 30- \\ & 200 \end{aligned}$ | 24h | 75. Enhances brownout when used in combination with glyphosate products. Striker® is registered for use on any weed listed on the partner product label. |  |  |  |  |  |  |  |  |  |  |  |
| Terbyne ${ }^{\ominus}$ Xtreme ${ }^{\ominus}$ (terbuthylazine 875) | 5 | $\begin{aligned} & \mathrm{kg} / \\ & \text { ha } \end{aligned}$ | >50 | 4 mo | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | - | - | - | - | - | - | - | - | - | - | - |
| Terrad'or ${ }^{\ominus}$ (tiafenacil 700) | 14 | g/ha | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | 1h | - | $\begin{gathered} 30 \text { or } \\ 15^{*} \end{gathered}$ | - | $\begin{gathered} 40 \text { or } \\ 15^{*} \end{gathered}$ | - | - | - | - | $\left.\begin{gathered} 30 \text { or } \\ 20^{*} \end{gathered} \right\rvert\,$ | $\begin{gathered} 20 \text { or } \\ 15^{*} \end{gathered}$ | 15* | - |
| Valor ${ }^{\circ} /$ Terrain ${ }^{\ominus}$ (flumioxazin 500) | 14 | $\mathrm{g} / \mathrm{ha}$ | $\begin{aligned} & 80- \\ & 200 \\ & \end{aligned}$ | 1-2mo | - | - | - | - | - | - | - | - | - | 30 | 30 | - |
|  |  |  |  |  | $\begin{aligned} & 210- \\ & 280 \\ & \end{aligned}$ | - | - | - | - | - | - | - | - | - | - | - |
| Voraxor ${ }^{\circledR}$ (saflufenacil $250+$ trifludimoxazin 125) | 14 | L/ha | $\begin{aligned} & 80- \\ & 250 \end{aligned}$ | 1 h | 0.1 | - | - | 0.1 | - | - | - | - | 0.1 | 0.1 | 0.1 | - |
| Weedmaster ${ }^{\text {D }}{ }^{\text {D }}{ }^{\oplus}$ (glyphosate 470) | 9 | L/ha | 80 | 6 h | $\begin{aligned} & 1.4- \\ & 2.3^{*} \end{aligned}$ | 0.96-7 | 1.53-7 | 0.77-7 | 1.4-7 | 1.15-7 | 1.4-7 | - | 0.96-7 | 1.4-7 | 0.96-7 | 1.15-7 |
| Roundup UltraMAX ${ }^{\circ}$ <br> (glyphosate 570) | 9 | L/ha | $\begin{gathered} 80 \\ \max \end{gathered}$ | 1h | - | $\begin{gathered} 0.32- \\ 0.95 \end{gathered}$ | $\begin{gathered} 0.625- \\ 1.3 \end{gathered}$ | - | - | $\begin{aligned} & 1.2- \\ & 1.9 \end{aligned}$ | - | - | $\begin{gathered} 0.32- \\ 0.95 \end{gathered}$ | - | - | $\begin{gathered} 0.625- \\ 1.3 \end{gathered}$ |
| CRUCIAL® (glyphosate 600) | 9 | L/ha | 80 | 6 h | $\begin{aligned} & 1.11 \\ & 1.8^{*} \end{aligned}$ | $\begin{gathered} 0.75- \\ 5.5 \end{gathered}$ | $\begin{gathered} 1.2- \\ 5.5 \end{gathered}$ | $\begin{gathered} 0.6- \\ 5.5 \end{gathered}$ | $\begin{gathered} 1.1- \\ 5.5 \end{gathered}$ | $\begin{gathered} 0.9- \\ 5.5 \end{gathered}$ | $\begin{gathered} 1.1- \\ 5.5 \end{gathered}$ | - | $\begin{gathered} 0.75- \\ 5.5 \end{gathered}$ | $\begin{gathered} 1.1- \\ 5.5 \end{gathered}$ | $\begin{array}{\|c} 0.75- \\ 5.5 \end{array}$ | $\begin{gathered} 0.9- \\ 5.5 \end{gathered}$ |

For pre-sowing of crops in a seedbed salvage situation ( $0-3 \mathrm{~d}$ pre-sowing), refer to plant backs.
Key: $\mathrm{h}=$ hours, $\mathrm{d}=$ days, $\mathrm{mo}=$ months, $\mathrm{fb}=$ followed by, $\mathrm{IM}=$ imidazoline tolerant varieties, $\mathrm{NR}=$ not required, $(\mathrm{S})=$ suppression only
Adjuvant key: $\mathrm{MO}=$ mineral oil, MOS $=$ mineral oil plus surfactant, $M S O=$ methylated seed oil, NIS $=$ non-ionic surfactant.
NIS products might indicate a specific concentration (i.e. NIS 1000). Refer to adjuvant chart for example products.

|  |  |  |  |  |  |  |  | $\begin{aligned} & \text { ㅎ凶 } \\ & \sum_{0}^{2} \\ & \hline \end{aligned}$ |  | $\begin{aligned} & \text { च̈ } \\ & 0 \\ & 3 \\ & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ |  | Comments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| - | - | 0.7-1.0 | 0.7-1.0 | - | - | - | - | 0.7-1.0 | - | - | 0.7-1.0 | Pre-emergent only; add a knockdown mix partner if required. |
| - | 0.3 | - | - | - | - | - | - | 0.3 | - | - | - Add | Add glyphosate. Adjuvant: refer to glyphosate label. |
| - | - | - | - | - | - | - | - | 15-20 | - | - | - | Requires tank mixing with fluroxypyr and/or glyphosate. |
| $\begin{aligned} & 0.5- \\ & 0.9^{*} \end{aligned}$ | - | - | 0.5 | - | - | $\begin{gathered} 0.25- \\ 0.5 \end{gathered}$ | - | $\begin{aligned} & 0.5- \\ & 0.9^{*} \end{aligned}$ | - | - | - | *Southern NSW only. $\wedge$ Curled dock only. Add glyphosate. |
| - | - | - | - | - | - | 17-26 | - | - | - | - | 17-26 | Adjuvant: MSO 1\%. Adding paraquat or glyphosate will broaden the spectrum. |
| $\begin{aligned} & 80- \\ & 160 \end{aligned}$ | - | - | - | - | - | - | - | - | - | - | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | Always add a knockdown herbicide; refer label. Adjuvant: MSO. |
| 0.8-2.4 | 0.8-2.4 | 0.8-2.4 | 0.8-3.2 | 0.8-2.4 | 0.8-2.4 | - | 0.8-2.4 | 0.8-2.4 | - | - | 0.8-2.4 | *Add 2,4-D amine. <br> $\wedge$ Add metsulfuron-methyl 600 at $5 \mathrm{~g} / \mathrm{ha}$. \#Add dicamba. |
| - | - | - | - | - | - | - | - | $\begin{gathered} 0.225- \\ 0.45 \end{gathered}$ | - | - | 0.6 | Add glyphosate. <br> *Add metsulfuron-methyl 600 at $5 \mathrm{~g} / \mathrm{ha}$. |
|  | Enhance | es brown registered | out whe d for use | en used on any | combi eed list | ination sted on | with gly the part | hosate r prod | roduct t label | Strike |  | Add glyphosate. |
| - | - | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | - | - | - | - | - | - | - | - | $\begin{array}{\|c} 0.86- \\ 1.2 \end{array}$ | Pre-emergent only; add a knockdown mix partner if required. |
| - | - | - | - | - | - | - | - | $20^{*}$ | - | - | 15* | *Add glyphosate; refer label. |
| - | - | - | - | - | - | - | - | 30 | - | - | - | Must add a knockdown herbicide partner. Adjuvant: MSO 0.5\%. |
| - | - | - | - | - | - | - | - | $\begin{aligned} & 220- \\ & 280 \end{aligned}$ | - | - | - | Pre-emergent control and some knockdown activity. Add a knockdown partner. |
| - | - | - | 0.1 | - | - | 0.1 | - | - | - | - | 0.1 | Add glyphosate or paraquat. Can reduce glyphosate efficacy on grasses; increase glyphosate rate to compensate. Adjuvant: MSO 1\%. |
| 1.15-7 | 0.77-7 | 0.77-7 | 1.15-7 | 0.77-7 | 0.77-7 | 1.15-7 | 0.77-7 | 0.77-7 | 1.15-7 | 1.4-7 | 1.4-7 | *Add 2,4-D amine. Many factors influence rate; refer label. |
| $\begin{gathered} 0.61- \\ 1.25 \end{gathered}$ | $\begin{gathered} 0.625- \\ 1.3 \end{gathered}$ | $\begin{aligned} & 0.425- \\ & 1.3 \end{aligned}$ | $\begin{aligned} & 0.95- \\ & 1.25 \end{aligned}$ | $\begin{gathered} 0.625- \\ 1.3 \end{gathered}$ | - | $\begin{aligned} & 0.625- \\ & 1.25 \end{aligned}$ | - | $\begin{gathered} 0.425- \\ 1.3 \end{gathered}$ | 1.2-1.9 | - | $\begin{array}{\|c\|} \hline 0.625- \\ 1.3 \end{array}$ | *Add triclopyr. Many factors influence rate; refer label. |

$0.9-5.50 .6-5.50 .6-5.50 .9-5.50 .6-5.50 .6-5.50 .9-5.50 .6-5.50 .6-5.5|1.15-7 \quad 1.1-5.5| 111-5.5{ }^{*} \begin{aligned} & * \\ & \text { Add 2,4-D } \\ & \text { refer label. }\end{aligned}$

| Note：example trade names shown．Others may be available at different concentrations．See labels for details． |  |  |  |  |  |  |  | $\begin{aligned} & \frac{1}{y} \\ & \frac{0}{0} \\ & \frac{\pi}{n} \\ & \end{aligned}$ |  |  |  |  | $\begin{aligned} & \bar{\omega} \\ & \text { ì } \end{aligned}$ | \％ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{aligned} & \text { 2,4-D amine } 700 \\ & \text { Drift restrictions apply } \end{aligned}$ | 4 | L／ha | $\begin{aligned} & 50- \\ & 250 \\ & 25 \end{aligned}$ | 1－7d | $\begin{gathered} 0.28- \\ 1.5 \end{gathered}$ | 0.98 | $\begin{gathered} 0.39- \\ 1.5 \end{gathered}$ | － | － | $\stackrel{0.515-}{1.5}$ | $\begin{gathered} 0.515- \\ 1.5 \end{gathered}$ | $\begin{gathered} 0.715- \\ 1.5 \end{gathered}$ | $\stackrel{0.515-}{1.5}$ | － |
| 2，4－D LV ester 680 Drift restrictions apply | 4 | L／ha | $\begin{aligned} & 30- \\ & 100 \end{aligned}$ | 1－7d | $\begin{gathered} 0.41- \\ 0.8 \end{gathered}$ | $\begin{gathered} 0.41- \\ 0.8 \end{gathered}$ | $\begin{array}{\|c\|} \hline 0.41- \\ 0.8 \\ \hline \end{array}$ | － | － | 0.8 | 0.8 | 0.8 | － | － |
| Colex－D（2，4－D choline 456） Reduced drift option | 4 | L／ha | $\begin{aligned} & 70- \\ & 100 \end{aligned}$ | 1－7d | $\begin{aligned} & 0.43- \\ & 1.25 \end{aligned}$ | － | $\begin{aligned} & 0.6- \\ & 0.79 \\ & \hline \end{aligned}$ | － | － | $\begin{gathered} 0.79- \\ 1.14 \end{gathered}$ | $\begin{gathered} 0.79- \\ 1.14(\mathrm{~S}) \end{gathered}$ | － | $\begin{gathered} 0.79- \\ 1.14 \end{gathered}$ | － |
| Dropzone ${ }^{\ominus}$（2，4－D amine 500） Reduced drift option | 4 | L／ha | $\begin{aligned} & 70- \\ & 250 \end{aligned}$ | 1－7d | $\begin{aligned} & 0.4- \\ & 0.66 \end{aligned}$ | 0.7 | $\begin{array}{\|c} 0.55- \\ 0.7 \end{array}$ | － | － | 0.7 | $\begin{aligned} & 0.7- \\ & 1.37 \end{aligned}$ | 0.65 | $\begin{aligned} & 0.7-7 \\ & 1.75 \end{aligned}$ | － |
| Associate ${ }^{\oplus}$（metsulfuron－ methyl 600） | 2 | g／ha | ＞50 | 10d | 5 or 7 | 5 | 5 | － | － | 5 | 7 （S） | 5 | 5 | 5 |
| Atrazine 900 | 5 | kg／ha | 55 | － | 0．65－0．87 |  |  |  |  |  |  |  |  |  |
| Balance ${ }^{\text {（ }}$（isoxaflutole 750 ） | 27 | g／ha | ＞50 | 10w＋ 100 mm | － | － | － | － | － | － | － | － | － | － |
| Basta ${ }^{\circledR}$（glufosinate－ ammonium 200） | 10 | L／ha | 100 | 14d | － | － | － | － | － | － | － | － | － | － |
| Bromicide ${ }^{\text {（ }}$（bromoxynil 200$)$ | 6 | L／ha | ＞50 | Not stated | － | － | － | － | － | － | － | － | － | － |
| Express ${ }^{\ominus}$（tribenuron－ methyl 750） | 2 | g／ha | ＞50 | 3d | － | － | － | － | － | － | － | － | － | － |
| $\begin{aligned} & \text { FallowBoss }{ }^{\ominus} \text { Tordon }{ }^{\ominus}(2,4-\text { D } \\ & \text { amine } 300+\text { picloram } 75+ \\ & \text { aminopyralid } 7.5) \end{aligned}$ | 4 | L／ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | 4mo | － | － | － | － | － | － | － | － | － | － |
| Garlon®（triclopyr 600） | 4 | mL／ha | ＞50 | 7d | － | － | － | － | － | － | － | － | － | － |
| Gramoxone ${ }^{\oplus} 360$ Pro （paraquat 360） | 22 | L／ha | $\begin{aligned} & 100- \\ & 200 \end{aligned}$ | 1h | 0．835－1．67 |  |  |  |  |  |  |  |  |  |
| Grazon ${ }^{\oplus}$ Extra（triclopyr $300+$ picloram $100+$ aminopyralid 8） | 4 | L／ha | 70 | 2－4mo | － | － | － | － | － | － | － | － | － | － |
| Grindstone ${ }^{\circ}$（aminopyralid 240） | 4 | mL／ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | 4mo | － | － | $\left\lvert\, \begin{gathered} 16 \text { or } \\ 24 \end{gathered}\right.$ | － | － | － | － | － | － | － |
| Guerrillå（paraquat $300+$ amitrole 12） | $\begin{gathered} 22+ \\ 37 \end{gathered}$ | L／ha | $\begin{aligned} & 100- \\ & 200 \end{aligned}$ | 1h | $\begin{gathered} 0.75- \\ 1.5 \end{gathered}$ | $\begin{array}{\|c} 0.75- \\ 1.5 \\ \hline \end{array}$ | $\begin{array}{\|c} 0.75- \\ 1.5 \end{array}$ | $\begin{gathered} 0.75- \\ 1.5 \end{gathered}$ | $\begin{array}{\|c} 0.75- \\ 1.5 \end{array}$ | $\begin{gathered} 0.75- \\ 1.5 \end{gathered}$ | $\begin{gathered} 0.75- \\ 1.5 \end{gathered}$ | $\begin{gathered} 0.75- \\ 1.5 \end{gathered}$ | $\begin{gathered} 0.75- \\ 1.5 \end{gathered}$ | $\begin{gathered} 0.75- \\ 1.5 \end{gathered}$ |
| Hammer ${ }^{\ominus}$（carfentrazone－ ethyl 400） | 14 | mL／ha | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | 1h | 15－45 | － | － | － | － | － | － | － | － | － |
| Hotshot ${ }^{\ominus}$（aminopyralid $10+$ fluroxypyr 140） | 4 | L／ha | ＞80 | 4mo | － | － | － | － | － | － | － | － | － | － |
| 1 Impose $^{\circ}$（imazapic 240 ） | 2 | L／ha | ＞50 | 15／4mo＊ | － | － | － | － | － | － | － | － | － | － |
| Kambå 750 （dicamba 750） | 4 | L／ha | ＞50 | 1－14d | － | － | － | － | － | － | － | － | $\begin{gathered} 0.105- \\ 0.16 \end{gathered}$ | － |
|  |  |  |  |  | － | － | 0．185＾ | － | 0.185 | － | － | － | 0．185＾ | － |


|  |  |  |  |  |  |  | $\begin{aligned} & \stackrel{y}{y} \\ & \stackrel{0}{\circ} \\ & \stackrel{0}{亏} \\ & \dot{n} \end{aligned}$ | $\begin{aligned} & \text { 产 } \\ & \text { 亮 } \\ & \text { ज } \end{aligned}$ |  |  | $\begin{aligned} & \stackrel{5}{y} \\ & \stackrel{y}{0} \end{aligned}$ | $\begin{aligned} & \text { O} \\ & \frac{2}{c} \\ & \frac{3}{3} \\ & \frac{0}{3} \end{aligned}$ |  | Comments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{gathered} 0.28- \\ 1.5 \end{gathered}$ | $\begin{gathered} \hline 0.39- \\ 1.45 \end{gathered}$ | 1－1．25 | － | － | － | － | － | $\begin{gathered} 0.39- \\ 1.25 \end{gathered}$ | $\begin{gathered} 0.28- \\ 0.98 \end{gathered}$ | $\begin{gathered} 0.39- \\ 1.5 \end{gathered}$ | $\begin{gathered} 0.515- \\ 1.25 \end{gathered}$ | $\begin{aligned} & 0.2- \\ & 1.25 \end{aligned}$ | $\begin{gathered} 0.515- \\ 1.25 \end{gathered}$ | Adding glyphosate is recommended in most situations |
| － | － | － | － | － | 0.8 | － | － | $\begin{gathered} 0.41- \\ 0.8 \end{gathered}$ | $\begin{gathered} 0.41- \\ 0.8 \end{gathered}$ | $\begin{gathered} 0.41- \\ 0.8 \end{gathered}$ | － | $\begin{gathered} 0.41- \\ 0.8 \end{gathered}$ | 0.8 | and many factors influence rate and adjuvant selection；refer label． |
| $\begin{array}{\|c\|} \hline 0.43- \\ 1.25 \\ \hline \end{array}$ | $\begin{aligned} & 0.6- \\ & 0.79 \end{aligned}$ | － | － | － | － | － | $\begin{gathered} 0.79- \\ 1.14 \end{gathered}$ | $\begin{aligned} & 0.6- \\ & 0.79 \end{aligned}$ | $\begin{gathered} 0.43- \\ 1.25 \end{gathered}$ | $\begin{aligned} & 0.6- \\ & 0.79 \end{aligned}$ | $\begin{gathered} 0.79- \\ 1.14 \end{gathered}$ | $\begin{gathered} 0.43- \\ 1.25 \end{gathered}$ | $\begin{gathered} 0.79- \\ 1.14 \end{gathered}$ | The benefits of low drift products can be negated with |
| $\begin{aligned} & 0.4- \\ & 1.75 \end{aligned}$ | $\begin{gathered} 0.55-6 \\ 0.65 \end{gathered}$ | 1.37 | － | － | － | － | － | $\begin{gathered} 0.55- \\ 0.7 \end{gathered}$ | $\begin{aligned} & 0.4- \\ & 0.65 \end{aligned}$ | $\begin{gathered} 0.55- \\ 0.65 \end{gathered}$ | $\begin{aligned} & 0.7- \\ & 1.37 \end{aligned}$ | 0.4 | $\begin{aligned} & 0.7- \\ & 1.75 \end{aligned}$ | the wrong mix partner；refer label． |
| 5 | － | 5 or 7 | － | 5 | － | － | 5 | 7 | 5 | 5 | － | 5 | 5 or 7 | Add glyphosate．Plant back is influenced by soil pH ；refer label． Adjuvant：NIS 1000 0．1\％． |
| 0．65－0．87 |  |  |  |  |  |  |  |  |  |  |  |  |  | Before lupins，peas or wheat only． Apply late July－mid September for May－June sowing． |
| 100 | － | － | － | － | － | － | － | － | － | － | － | － | － | Pre－emergent product．Add a knockdown herbicide if germinated weeds are present． |
| 3.75 | － | － | － | － | － | － | － | － | － | － | － | － | － | Warm，humid conditions provide best results． |
| － | － | － | － | － | － | － | － | － | － | － | － | － | － | ＊Add glyphosate；rate is influenced by weed size；refer label． |
| 25 | － | － | － | － | － | － | － | － | 20 | － | － | － | － | ＊Add glyphosate；refer label． Adjuvant：NIS 1000 0．1\％． |
| － | － | － | － | － | － | － | － | － | － | － | － | － | － | Add glyphosate． |
| － | － | － | － | － | － | － | － | － | － | － | － | － | － | Add adjuvant：MOS 0．5\％．Do not use oils if mixing with glyphosate． |
| 0．835－1．67 |  |  |  |  |  |  |  |  |  |  |  |  |  | Must add an adjuvant． |
| 0．2－0．4 | － | － | － | － | － | － | － | － | － | － | － | － | － | Add glyphosate．Adjuvant：refer to glyphosate label． |
| 7－15＊ | － | $\begin{gathered} 16 \text { or } \\ 24 \end{gathered}$ | － | － | － | － | － | $\begin{gathered} 16 \text { or } \\ 24 \end{gathered}$ | $\begin{gathered} 16 \text { or } \\ 24 \end{gathered}$ | $\begin{gathered} 16 \text { or } \\ 24 \end{gathered}$ | － | $\begin{gathered} 16 \text { or } \\ 24 \end{gathered}$ | $\begin{gathered} 16 \text { or } \\ 24 \end{gathered}$ | Northern NSW only．Add metsulfuron－methyl 600 and glyphosate．＊Add picloram＋ triclopyr product；refer label． |
| $\begin{gathered} 0.75- \\ 1.5 \end{gathered}$ | $\begin{gathered} 0.75- \\ 1.5 \end{gathered}$ | $\begin{gathered} 0.75- \\ 1.5 \end{gathered}$ | $\begin{gathered} 0.75- \\ 1.5 \end{gathered}$ | $\begin{gathered} 0.75- \\ 1.5 \end{gathered}$ | $\stackrel{0.75-}{1.5}$ | $\begin{array}{\|c} 0.75- \\ 1.5 \end{array}$ | $\stackrel{0.75-}{1.5}$ | $\begin{gathered} 0.75- \\ 1.5 \end{gathered}$ | $\underset{\substack{0.75-\\ 1.5}}{ }$ | $\begin{gathered} 0.75- \\ 1.5 \end{gathered}$ | $\begin{gathered} 0.75- \\ 1.5 \end{gathered}$ | $\begin{gathered} 0.75- \\ 1.5 \end{gathered}$ | $\begin{gathered} 0.75- \\ 1.5 \end{gathered}$ | Add NIS when dilution in tank is below $400 \mathrm{~mL} / 100 \mathrm{~L}$ water．Not otherwise required． |
| － | － | 15－45 | － | － | － | － | 15－45 | － | － | － | － | － | － | Always add a knockdown herbicide．Adjuvant：MOS 0．5\％． |
| － | － | － | － | － | － | － | － | － | － | － | － | － | － | Northern NSW only．Add glyphosate．Adjuvant：refer to glyphosate label． |
| － | － | － | － | － | － | － | － | － | － | － | － | － | － | Northern NSW only． <br> Adjuvant：NR． <br> ＊Plant back：W $15 \mathrm{~m}+500 \mathrm{~mm}$ ， <br> IMI W $4 \mathrm{~m}+200 \mathrm{~mm}$ ． |
| $\begin{gathered} 0.105- \\ 0.16 \end{gathered}$ | － | － | － | － | － | － | － | － | $\begin{gathered} 0.105- \\ 0.16 \end{gathered}$ | $\begin{gathered} 0.105- \\ 0.16 \end{gathered}$ | － | － | $\begin{gathered} 0.105- \\ 0.16 \end{gathered}$ | Pre－cultivation． Add glyphosate． |
| － | $\begin{gathered} 0.215- \\ 0.375 \end{gathered}$ | $\begin{gathered} 0.185- \\ 0.375 \end{gathered}$ | － | － | $\begin{gathered} 0.215- \\ 0.375 \end{gathered}$ | － | 0．135＊ | $\begin{gathered} 0.185- \\ 0.375 \end{gathered}$ | － | 0.185 | 0.185 | － | 0.185 | No till．＊Add glyphosate． $\wedge$ Add 2，4－D amine． |

Table 13. Herbicides for fallow commencement and/or maintenance - broadleaf weed control - page 6 of 6

| Note: example trade names shown. Others may be available at different concentrations. See labels for details. |  | $\begin{aligned} & \stackrel{y}{M} \\ & \stackrel{y}{0} \\ & \stackrel{n}{5} \\ & 5 \end{aligned}$ |  |  |  | $\begin{aligned} & \text { 층 } \\ & \text { o } \\ & \text { 气} \\ & \text { O} \\ & \text { on } \end{aligned}$ |  | $\begin{aligned} & \frac{5}{n} \\ & \frac{0}{0} \\ & \frac{1}{n} \\ & \end{aligned}$ |  |  |  |  | $\begin{aligned} & \bar{\omega} \\ & \text { ì } \\ & \hline \end{aligned}$ | - |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Palmero ${ }^{\circledR}$ TX (terbuthylazine $750+$ isoxaflutole 75 ) | $5+27$ | kg/ha | >50 | $\begin{gathered} 6 \mathrm{~m}+ \\ 100 \mathrm{~mm} \end{gathered}$ | 1.0 | - | - | - | - | 0.7-1.0 | - | - | - | - |
| Pixxaro® (fluroxypyr 250 + halauxifen 16.25) | 4 | L/ha | >80 | 1 m | - | - | - | - | - | - | - | - | - | - |
| Priority ${ }^{\text {® }}$ (florasulam 200) | 2 | mL/ha | $\begin{aligned} & 80- \\ & 100 \end{aligned}$ | 1w | - | - | - | - | - | - | - | - | - | - |
| Pyresta ${ }^{\circ}$ Xtreme (pyraflufenethyl 2.1 + 2,4-D ester 600) | $14+4$ | L/ha | $\begin{aligned} & 60- \\ & 150 \end{aligned}$ | 1-3d | $\begin{gathered} 0.25- \\ 0.5 \end{gathered}$ | - | - | - | - | - | - | - | - | - |
| Sharpen ${ }^{\circ}$ (saflufenacil 700 ) | 14 | g/ha | $\begin{aligned} & 80- \\ & 250 \\ & \end{aligned}$ | 1 h | 26-34 | - | - | - | - | 26-34 | - | 17-26 | - | - |
| Sledge® (pyraflufen-ethyl 25) | 14 | mL/ha | $\begin{aligned} & 80- \\ & 150 \end{aligned}$ | 1 h | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | - | - | - | - | - | - | - | - | - |
| Spray.Seed ${ }^{\oplus}$ (paraquat 135 + diquat 115) | 22 | L/ha | $\begin{aligned} & 50- \\ & 200 \end{aligned}$ | 1 h | 0.8-3.2 | 0.8-3.2 | 0.8-3.2 | - | - | 0.8-3.2 | - | - | - | - |
| Starane ${ }^{\oplus}$ Advanced (fluroxypyr 333) | 4 | L/ha | >50 | 7d | - | - | - | - | - | - | - | - | - | - |
| Striker® (oxyfluorfen 240) | 14 | mL/ha | $\begin{aligned} & 30- \\ & 200 \end{aligned}$ | 24h | 75. Enhances brownout when used in combination with glyphosate products. Striker ${ }^{\circledR}$ is registered for use on any weed listed on the partner product label. |  |  |  |  |  |  |  |  |  |
| Terbyne ${ }^{\ominus}$ Xtreme ${ }^{\ominus}$ (terbuthylazine 875) | 5 | kg/ha | >50 | 4 m | $\stackrel{0.86-}{ }$ | - | - | - | - | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | - | - | - | - |
| Terrad'or® (tiafenacil 700) | 14 | g/ha | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | 1 h | $\begin{gathered} 20 \text { or } \\ 15^{*} \end{gathered}$ | - | 15* | - | - | - | - | - | $\begin{gathered} 40 \text { or } \\ 15^{*} \end{gathered}$ | - |
| Valor ${ }^{\circ} /$ Terrain ${ }^{\ominus}$ (flumioxazin 500) | 14 | g/ha | $\begin{aligned} & 80- \\ & 200 \end{aligned}$ | 1-2m | 30 | - | - | - | - | 30 | - |  | - | - |
|  |  |  |  |  | - | - | - | - | - | - | - | - | - | - |
| Voraxor® (saflufenacil $250+$ trifludimoxazin 125) | 14 | L/ha | $\begin{aligned} & 80- \\ & 250 \end{aligned}$ | 1h | 0.1 | - | - | - | - | 0.1 | - | 0.1 | - | - |
| Weedmaster ${ }^{\circledR}$ DST ${ }^{\ominus}$ <br> (glyphosate 470) | 9 | L/ha | 80 | 6 h | 1.15-7 | 0.77-7 | 1.15-7 | 1.15-7 | 0.77-7 | 1.4-7 | 1.15-7 | 0.77-7 | 1.15-7 | 1.15-7 |
| Roundup UItraMAX ${ }^{\text {® }}$ <br> (glyphosate 570) | 9 | L/ha | $\begin{gathered} 80 \\ \max \end{gathered}$ | 1h | $\begin{aligned} & 0.95- \\ & 1.25 \end{aligned}$ | - | $\begin{array}{\|c} 0.625- \\ 1.25 \end{array}$ | - | $\begin{aligned} & 0.625- \\ & 1.25 \end{aligned}$ | - | $\begin{aligned} & 0.95- \\ & 1.9 \end{aligned}$ | - | $\begin{gathered} 0.95- \\ 1.9 \end{gathered}$ | $\begin{gathered} 0.95- \\ 1.25 \end{gathered}$ |
| CRUCIAL® (glyphosate 600) | 9 | L/ha | 80 | 6 h | 0.9-5.5 | 0.6-5.5 | 0.9-5.5 | 0.9-5.5 | 0.6-5.5 | 1.1-5.5 | 0.9-5.5 | 0.6-5.5 | 0.9-5.5 | 0.9-5.5 |

For pre-sowing of crops in a seedbed salvage situation ( $0-3 \mathrm{~d}$ pre-sowing), refer to plant backs.
Key: $\mathrm{h}=$ hours, $\mathrm{d}=$ days, $\mathrm{mo}=$ months, $\mathrm{fb}=$ followed by, $\mathrm{IMI}=$ imidazoline tolerant varieties, $\mathrm{NR}=$ not required, $(\mathrm{S})=$ suppression only.
Adjuvant key: $\mathrm{MO}=$ mineral oil, MOS $=$ mineral oil plus surfactant, $\mathrm{MSO}=$ methylated seed oil, NIS $=$ non-ionic surfactant.
NIS products might indicate a specific concentration (i.e. NIS 1000). Refer to adjuvant chart for example products.

|  |  |  | $\begin{aligned} & \text { ov } \\ & \text { 訁̄ } \\ & \text { ñ } \end{aligned}$ |  |  |  | $\begin{aligned} & \stackrel{y}{\circ} \\ & \stackrel{0}{\circ} \\ & \stackrel{\rightharpoonup}{n} \\ & \end{aligned}$ |  |  |  | $\begin{aligned} & \stackrel{5}{5} \\ & > \end{aligned}$ | 을 <br> $\frac{1}{5}$ <br> $\frac{0}{3}$ |  | Comments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0.7-1.0 | - | 1.0 (S) | - | - | - | - | - | - | 0.7-1.0 | - | - | 0.7-1.0 | 0.7-1.0 | Pre-emergent only; add a knockdown mix partner if required. |
| 0.3 | - | - | - | - | - | - | - | - | - | - | - | - | - | Add glyphosate. Adjuvant: refer to glyphosate label. |
| 25 | - | 15-25 | - | - | - | - |  | 25 | - | - | - | - | 15 | Requires tank mixing with fluroxypyr and/or glyphosate. |
| 0.5 | - | - | - | - | - | - | 0.5 | - | $\begin{gathered} 0.25- \\ 0.5 \end{gathered}$ | - | - | $\begin{array}{\|c} 0.25- \\ 0.5 \end{array}$ | - | *Southern NSW only. $\wedge$ Curled dock only. Add glyphosate |
| 17-26 | - | 17-26 | - | - | - | 17-26 | - | - | 17-26 | - | - | 17-26 | 26-34 | Adjuvant: MSO 1\%. Adding paraquat or glyphosate will broaden the spectrum. |
| $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | - | - | - | - | - | - | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | - | - | - | - | - | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | Always add a knockdown herbicide; refer label. Adjuvant: MSO. |
| - | - | 0.8-3.2 | - | - | - | 0.8-3.2 | $\begin{aligned} & 0.8- \\ & 3.2 \wedge \# \\ & \hline \end{aligned}$ | $\begin{aligned} & 0.8^{-} \\ & .4^{*} \end{aligned}$ | 0.8-3.2 | 0.8-2.4 | 0.8-3.2 | 0.8-3.2 | 0.8-3.2 | *Add 2,4-D amine. <br> $\wedge$ Add metsulfuron-methyl 600 at $5 \mathrm{~g} / \mathrm{ha}$. <br> \#Add dicamba |
| 0.6 | - | $\begin{gathered} 0.3^{*} \text { or } \\ 0.9 \end{gathered}$ | - | - | - | - | - | 0.6 | - | - | - | - | $\begin{gathered} 0.3^{*} \text { or } \\ 0.3 \text { or } \\ 0.9 \end{gathered}$ | Add glyphosate. <br> *Add metsulfuron-methyl 600 at <br> $5 \mathrm{~g} / \mathrm{ha}$. |

75. Enhances brownout when used in combination with glyphosate products.
any weed listed on the partner product label.

| $\begin{gathered} 0.86- \\ \hline 1.2 \end{gathered}$ | - | - | - | - | - | - | - | - | - | - | - | $\begin{gathered} 0.86- \\ \hline 1.2 \end{gathered}$ | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 20 | - | 15* | - | - | - | - | $\begin{gathered} 20 \text { or } \\ 15^{*} \end{gathered}$ | - | - | - | 15* | $\begin{gathered} 30 \text { or } \\ 15^{*} \end{gathered}$ | - |
| 30 | - | 30 | - | - | - | - | 30 | 30 | 30 | - | 30 | - | 30 |
| $\begin{gathered} 210- \\ 280 \end{gathered}$ | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0.1 | - | 0.1 | - | - | - | 0.1 | - | - | 0.1 | - | - | 0.1 | 0.1 |

Add
Pre-emergent only: add a knockdown mix partner if *Add glyphosate; refer label. Must add a knockdown
herbicide partner. Adjuvant: herbicide partner. Adjuvant:
MSO 0.5\%.
Pre-emergent control and some knockdown activity. Add a knockdown partner. Add glyphosate or paraquat; refer label for rates. Can reduce
glyphosate efficacy on grasses; glyphosate efficacy on grasse
increase glyphosate rate to compensate. Adjuvant: MSO $1 \%$.

| 0.77-7 | 1.15-7 | 0.77-7 | 0.77-7 | 0.77-7 | 0.77-7 | 0.77-7 | 1.15-7 | 0.77-7 | 1.15-7 | 0.96-7 | 1.4-7 | 1.15-7 | 1.15-7 | *Add 2,4-D amine. Many factors influence rate; refer label. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{gathered} 0.425- \\ 1.3 \end{gathered}$ | $\underset{1.25}{0.625-}$ | $\begin{array}{\|l\|} 0.32- \\ 0.625 \end{array}$ | - | - | - | - | $\begin{gathered} 0.95- \\ 1.9 \end{gathered}$ | - | $\stackrel{0.625-}{1.3}$ | $\begin{gathered} 0.625- \\ 1.25 \end{gathered}$ | - | $\begin{gathered} 0.625- \\ 1.25 \end{gathered}$ | $\begin{gathered} 0.625- \\ 1.3 \end{gathered}$ | *Add triclopyr. Many factors influence rate selection; refer label. |
| -5.5 | 0.9-5.5 | 0.6-5.5 | 0.6-5.5 | 0.6-5.5 | 0.6-5.5 | 0.6-5.5 | 0.9-5.5 | 0.6-5.5 | 0.9-5.5 | $\begin{gathered} 0.75- \\ 5.5 \end{gathered}$ | 1.1-5.5 | 0.9-5.5 | 0.9-5.5 | *Add 2,4-D amine. Many factors influence rate selection; refer |

 label.

## NOTES



Table 14. Herbicides for pre-sowing knockdown (0-3 days pre-sowing) - page 1 of 2

| Note: example trade names shown. Others may be available at different concentrations. See labels for details. |  |  |  |  |  |  |  |  |  |  | $\begin{aligned} & \frac{n}{0} \\ & \stackrel{0}{2} \\ & \frac{0}{3} \end{aligned}$ |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Express ${ }^{\ominus}$ (tribenuronmethyl 750) | 2 | Wheat, barley, oats | g/ha | >50 | 3d |  |  |  |  |  |  | - | - | 25* | - |
| Gramoxone ${ }^{\circledR} 360$ Pro (paraquat 360) | 22 | $\begin{gathered} \text { All } \\ \text { crops } \end{gathered}$ | L/ha | $\begin{aligned} & 100- \\ & 200 \end{aligned}$ | 1 h |  |  | 0.835-1.6 |  |  | $\begin{gathered} 0.42- \\ 1.4 \end{gathered}$ |  |  | -83-1.4 |  |
| Guerrilla® (paraquat 300 + amitrole 12) | $\begin{gathered} 22+ \\ 37 \end{gathered}$ | $\begin{gathered} \text { All } \\ \text { crops } \end{gathered}$ | L/ha | $\begin{aligned} & 100- \\ & 200 \end{aligned}$ | 1h |  |  | 0.75-1.5 |  |  | 0.375 |  |  | 5-1.5 |  |
| Hammer® (carfentrazoneethyl 400) | 14 | $\begin{aligned} & \text { All } \\ & \text { crops } \end{aligned}$ | mL/ha | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | Oh |  |  |  |  |  |  | - | - | - | 15-45 |
| Kambå 750 (dicamba 750) Pre-cultivation |  |  |  |  |  |  |  |  |  |  |  | - | - | $\begin{gathered} 0.105- \\ 0.16 \end{gathered}$ | $\begin{gathered} 0.105- \\ 0.16 \end{gathered}$ |
| Kamba® 750 (dicamba 750 ) <br> No till |  |  |  |  |  |  |  |  |  |  |  | - | - | 0.185 | - |
| Priority ${ }^{\circ}$ (florasulam 200) | 2 | Wheat, barley | mL/ha | $\begin{aligned} & 80- \\ & 100 \end{aligned}$ | 1w |  |  |  |  |  |  | - | - | 20 | - |
| Pyresta ${ }^{\circledR}$ Xtreme (pyraflufenethyl $2.1+2,4-\mathrm{D}$ ester 600) | $\begin{aligned} & 14 \\ & +4 \end{aligned}$ | $\begin{gathered} \text { All } \\ \text { crops } \end{gathered}$ | L/ha | $\begin{aligned} & 60- \\ & 150 \end{aligned}$ | 1-3d | - | 0.5 | 0.5 | $\begin{gathered} 0.25- \\ 0.5 \end{gathered}$ | 0.5 | 0.5 | $\begin{gathered} 0.25- \\ 0.5 \end{gathered}$ | - | - | 0.25-0.5 |
| Sharpen® (saflufenacil 700) | 14 | Cereal, pulses | g/ha | $\begin{aligned} & 80- \\ & 250 \\ & \end{aligned}$ | 1h |  |  |  |  |  |  | - | - | 17-26 | 17-26 |
| Sledge ${ }^{\oplus}$ (pyraflufenethyl 25) | 14 | Winter cereal | $\mathrm{mL} / \mathrm{ha}$ | $\begin{aligned} & 80- \\ & 150 \mathrm{~L} \end{aligned}$ | 1h |  |  |  |  |  |  | - | - | - | 50-100 |
| Spray.Seed ${ }^{\circledR}$ (paraquat 135 + diquat 115) | 22 | $\begin{gathered} \text { All } \\ \text { crops } \end{gathered}$ | L/ha | $\begin{aligned} & 50- \\ & 200 \end{aligned}$ | 1h | - | 1-3.2 | 1-3.2 | 1-3.2 | 1-3.2 | 1-3.2 | - | - | 0.8-2.4 | 1.2-3.2 |
| Striker® (oxyfluorfen 240) | 14 | $\begin{gathered} \text { All } \\ \text { crops } \end{gathered}$ | mL/ha | $\begin{aligned} & 30- \\ & 200 \end{aligned}$ | 24h |  |  |  |  |  |  | 75. En use glypho regist listed | in co | browno <br> mbinatio <br> oducts. use on any partner abel. | ut when n with Striker ${ }^{\circledR}$ is any weed product $\qquad$ |
| Terrad'or® (tiafenacil 700) | 14 | $\begin{gathered} \text { All } \\ \text { crops } \end{gathered}$ | g/ha | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | 1h | 15* | 40* | $\begin{gathered} 40 \text { or } \\ 15^{*} \end{gathered}$ | 15* | 30* | 20* | - | - | - | 40 or 15* |
| Terrain ${ }^{\text {® (flumioxazin } 500)}$ | 14 | Cereal, pulses | g/ha | $\begin{aligned} & 80- \\ & 200 \end{aligned}$ | 1-2mo |  |  |  |  |  |  | - | - | 30 | 30 |
| Voraxor ${ }^{\circledR}$ (saflufenacil 250 + trifludimoxazin 125) | 14 | Wheat, barley, (oats- fodder) | L/ha | $\begin{aligned} & 80- \\ & 250 \end{aligned}$ | 1h | - | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | - | 0.1 | 0.1 |
| Weedmaster ${ }^{\circledR}$ DST ${ }^{\oplus}$ (glyphosate 470) | 9 | $\begin{aligned} & \text { All } \\ & \text { crops } \end{aligned}$ | L/ha | 80 | 6 h | 0.96-7 | 1.15-7 | 0.77-7 | 0.96-7 | 1.15-7 | 0.77-7 | 0.96-7 | - | 1.28-7 | 0.96-7 |
| Roundup UltraMAX ${ }^{\circledR}$ (glyphosate 570) | 9 | $\begin{gathered} \text { All } \\ \text { crops } \end{gathered}$ | L/ha | $\begin{gathered} 80 \\ \max \end{gathered}$ | 1h | $\begin{gathered} 0.625- \\ 0.95 \end{gathered}$ | $\begin{aligned} & 0.95- \\ & 1.25 \end{aligned}$ | $\begin{gathered} 0.625- \\ 0.95 \end{gathered}$ | $\begin{gathered} 0.95- \\ 1.25 \\ \hline \end{gathered}$ | $\begin{gathered} 0.95- \\ 1.25 \end{gathered}$ | $\begin{gathered} 0.625- \\ 0.95 \end{gathered}$ | $\begin{gathered} 0.625- \\ 0.96 \end{gathered}$ | - | 1.2-1.9 | 0.32-1.25 |
| CRUCIAL® (glyphosate 600) | 9 | $\begin{gathered} \text { All } \\ \text { crops } \end{gathered}$ | L/ha | 80 | 6 h | $\begin{gathered} 0.75- \\ 5.5 \end{gathered}$ | 0.9-5.5 | 0.6-5.5 | $\begin{gathered} \hline 0.75- \\ 5.5 \end{gathered}$ | 0.9-5.5 | 0.6-5.5 | - | - | 1-5.5 | 0.75-5.5 |

Read the label before using a product.

| $\begin{aligned} & \text { 늗 } \\ & \text { 믇 } \\ & \text { ㄷ } \end{aligned}$ |  |  |  | $\stackrel{y}{\Delta}$ |  |  |  | $\begin{aligned} & \ddot{0} \\ & \frac{0}{5} \\ & \frac{0}{0} \\ & \frac{0}{4} \end{aligned}$ | 衣苞 |  |  | $\begin{aligned} & \stackrel{u}{0} \\ & \sum \end{aligned}$ | Comments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| - | - | - | 25* | - | - | - | - | - | - | - | - | 30 | *Add glyphosate; refer label. Adjuvant: NIS 1000 0.1\%. |
| 0.835-1.4 |  |  |  |  |  |  |  |  |  |  |  |  | Must add an adjuvant. |
| 0.75-1.5 |  |  |  |  |  |  |  | 1.7-2 | 0.75-1.5 |  |  |  | Add NIS when dilution in tank is below $400 \mathrm{~mL} / 100 \mathrm{~L}$ water. Not otherwise required. |
| - | - | - | - | - | 15-45 | - | - | - | - | - | 15-45 | - | Always add a knockdown herbicide. Adjuvant: MOS 0.5\%. |
| - | - | - | - | $\begin{gathered} 0.105- \\ 0.16 \end{gathered}$ | - | - | $\begin{gathered} 0.105- \\ 0.16 \end{gathered}$ | - | - | - | - | $\begin{gathered} 0.105- \\ 0.16 \end{gathered}$ | Add glyphosate. |
| - | - | - | - | $\begin{aligned} & 0.185- \\ & 0.375 \end{aligned}$ | - | - | - | - | - | - | - | - * | *Add glyphosate. <br> $\wedge$ Add 2,4-D amine. |
| - | - | - | - | - | - | - | - | - | - | - | 25 | - | Requires tank mixing with fluroxypyr and/or glyphosate. |
| - | 0.9* | - | $\begin{gathered} 0.25- \\ 0.5 \end{gathered}$ | $0.5 \wedge$ | $\begin{gathered} 0.25- \\ 0.5 \end{gathered}$ | - | - | - | - | - | 0.5-0.9 | $\begin{gathered} 0.25- \\ 0.5 \end{gathered}$ | *Southern NSW only. $\wedge$ Curled dock only. Add glyphosate. |
| - | 17-26 | - | - | - | 26-34 | - | 17-26 | - | - | - | 17-26 | 17-26 | Adjuvant: MSO $1 \%$. Adding paraquat or glyphosate will broaden the spectrum. |
| - | - | - | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | - | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | - | - | - | - | - | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | - | Always add a knockdown herbicide; refer label. Adjuvant: MSO 0.5\%. |
| 1.2-3.2 | - | - | 0.8-2.4 | - | 1.2-3.2 | $\begin{aligned} & 0.8- \\ & 1.2^{\wedge} \end{aligned}$ | $\begin{aligned} & 0.8- \\ & 1.2 \wedge \# \end{aligned}$ | 0.8-2.4 | 0.8-2.4 | $\begin{aligned} & \text { 0.8- } \\ & 1.2^{\wedge \#} \end{aligned}$ | 1.2-1.8 | $\begin{aligned} & 0.8- \\ & 3.2 \wedge \# \end{aligned}$ | *Add 2,4-D amine. <br> ^Add metsulfuron-methyl 600 at $5 \mathrm{~g} / \mathrm{ha}$. \#Add dicamba. |

## 75. Enhances brownout when used in combination with glyphosate products. Striker" is registered for Add glyphosate use on any weed listed on the partner product label.

| - | - | - | - | - | 15* | $\begin{gathered} 20 \text { or } \\ 15^{*} \end{gathered}$ | 20* | - | $\begin{gathered} 30 \text { or } \\ 15^{*} \end{gathered}$ | $\begin{gathered} 30 \text { or } \\ 20^{*} \end{gathered}$ | $\begin{gathered} 20 \text { or } \\ 15^{*} \end{gathered}$ | 15* | *Add glyphosate; refer label. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| - | - | - | 30 | - | 30 | - | - | - | - | - | 30 | 30 | Must add a knockdown herbicide partner. Adjuvant: MSO 0.5\%. |
| - | 0.1 | - | - | - | 0.1 | 0.1 | 0.1 | 0.1 | - | 0.1 | 0.1 | 0.1 | Add glyphosate or paraquat. Can reduce glyphosate efficacy on grasses; increase glyphosate rate to compensate. Adjuvant: MSO $1 \%$. |
| 1.4-7 | 0.77-7 | 0.77-7 | 0.77-7 | 0.77-7 | 1.15-7 | 2.3-7 | 1.4-7 | - | 0.96-7 | 0.96-7 | 1.4-7 | 0.96-7 |  |
| - | - | - | $\begin{aligned} & 0.425- \\ & \hline 1.3 \end{aligned}$ | $\begin{gathered} 0.625- \\ 1.9 \end{gathered}$ | 1.2-1.9 | - | $\begin{gathered} 0.32- \\ 0.95 \end{gathered}$ | - | $\begin{gathered} 0.32- \\ 0.95 \end{gathered}$ | $\begin{gathered} 0.32- \\ 0.95 \end{gathered}$ | - | - | Many factors influence rate; refer label. |
| 1.1-5.5 | 0.6-5.5 | 0.6-5.5 | 0.6-5.5 | 0.6-5.5 | 0.9-5.5 | 1.8-5.5 | 1.1-5.5 | - | $\begin{gathered} 0.75- \\ 5.5 \end{gathered}$ | $\begin{gathered} 0.75- \\ 5.5 \end{gathered}$ | 1.1-5.5 | $\begin{gathered} 0.75- \\ 5.5 \end{gathered}$ |  |

Table 14. Herbicides for pre-sowing knockdown (0-3 days pre-sowing) - page 2 of 2

| Note: example trade names shown. Others may be available at different concentrations. See labels for details. |  | $\begin{aligned} & 00 \\ & 2 \\ & 0.0 \\ & 0.0 \end{aligned}$ | $\begin{aligned} & \stackrel{0}{3} \\ & \stackrel{y}{0} \\ & \stackrel{5}{5} \\ & \hline \end{aligned}$ |  |  |  |  |  |  |  |  |  | $\begin{aligned} & \frac{0}{3} \\ & \frac{1}{3} \\ & \frac{1}{5} \\ & \frac{5}{6} \\ & \stackrel{c}{c} \end{aligned}$ | $\begin{aligned} & \text { 응 } \\ & \text { o } \\ & \frac{0}{0} \\ & 0 \\ & 0.0 \end{aligned}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Express ${ }^{\circledR}$ (tribenuronmethyl 750) | 2 | Wheat, barley, oats | g/ha | >50 | 3d | - | 15* | - | 20 | - | - | $\begin{gathered} 20^{*} \text { or } \\ 30 \end{gathered}$ | - | - | - |
| Gramoxone 360 Pro (paraquat 360) | 22 | $\begin{gathered} \text { All } \\ \text { crops } \end{gathered}$ | L/ha | $\begin{aligned} & 100- \\ & 200 \end{aligned}$ | 1 h | 0.835-1.4 |  |  |  |  |  |  |  |  |  |
| Guerrilla ${ }^{\ominus}$ (paraquat 300 + amitrole 12) | $\begin{gathered} 22+ \\ 37 \end{gathered}$ | $\begin{gathered} \text { All } \\ \text { crops } \end{gathered}$ | L/ha | $\begin{aligned} & 100- \\ & 200 \end{aligned}$ | 1 h | 0.75-1.5 |  |  |  |  |  |  |  |  |  |
| Hammer® (carfentrazoneethyl 400) | 14 | $\begin{gathered} \text { All } \\ \text { crops } \end{gathered}$ | mL/ha | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | Oh | - | - | - | - | 15-45 | - | - | 15-45 | - | - |
| Kambå 750 (dicamba 750) Pre-cultivation | 4 | $\begin{aligned} & \text { All } \\ & \text { crops } \end{aligned}$ | L/ha | >50 | 1-14d | - | $\begin{gathered} 0.105- \\ 0.16 \end{gathered}$ | $\begin{gathered} 0.105- \\ 0.16 \end{gathered}$ | - | $\begin{gathered} 0.105- \\ 0.16 \end{gathered}$ | - | $\begin{aligned} & 0.105- \\ & 0.16 \end{aligned}$ | - | - | - |
| Kamba ${ }^{\oplus} 750$ (dicamba 750 ) No till |  |  |  |  |  | - | $\begin{gathered} 0.215- \\ 0.375 \end{gathered}$ | - | 0.185 | - | - | - | - | - | $0.185 \wedge$ |
| Priority ${ }^{\text {® }}$ (florasulam 200) | 2 | Wheat, barley | mL/ha | $\begin{aligned} & 80- \\ & 100 \end{aligned}$ | 1w | - | - | - | - | - | - | - | - | - | - |
| Pyresta ${ }^{\oplus}$ Xtreme (pyraflufenethyl 2.1 + 2,4-D ester 600) | $\begin{aligned} & 14 \\ & +4 \end{aligned}$ | $\begin{gathered} \text { All } \\ \text { crops } \end{gathered}$ | L/ha | $\begin{aligned} & 60- \\ & 150 \end{aligned}$ | 1-3d | - | - | 0.5 | - | $\begin{gathered} 0.25- \\ 0.5 \end{gathered}$ | - | - | $\begin{gathered} 0.25- \\ 0.5 \end{gathered}$ | - | - |
| Sharpen® (saflufenacil 700) | 14 | Cereal, pulses | g/ha | $\begin{aligned} & 80- \\ & 250 \\ & 8 \end{aligned}$ | 1h | - | - | - | - | 17-26 | - | 17-26 | 26-34 | - | - |
| Sledge® (pyraflufen-ethyl 25) | 14 | Winter cereal | $\mathrm{mL} / \mathrm{ha}$ | $\begin{aligned} & 80- \\ & 150 \end{aligned}$ | 1h | - | - | - | - | - | - | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | - | - |
| Spray.Seed ${ }^{\circledR}$ (paraquat 135 + diquat 115) | 22 | $\begin{gathered} \text { All } \\ \text { crops } \end{gathered}$ | L/ha | $\begin{aligned} & 50- \\ & 200 \end{aligned}$ | 1 h | 0.8-2.4 | 0.8-2.4 | 0.8-3.2 | 0.8-2.4 | - | 0.8-2.4 | 0.8-2.4 | 0.8-3.2 | 0.8-3.2 | 0.8-3.2 |
| Striker® (oxyfluorfen 240) | 14 | $\begin{gathered} \text { All } \\ \text { crops } \end{gathered}$ | mL/ha | $\begin{aligned} & 30- \\ & 200 \end{aligned}$ | 24h | 75. Enhances brownout when used in combination with glyphosate products. Striker ${ }^{\circledR}$ is registered for use on any weed listed on the partner product label. |  |  |  |  |  |  |  |  |  |
| Terrad'or® (tiafenacil 700) | 14 | $\begin{aligned} & \text { All } \\ & \text { crops } \end{aligned}$ | g/ha | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | 1h | - | - | - | - | - | - | 15* | $\begin{gathered} 20 \text { or } \\ 15^{*} \end{gathered}$ | - | 15* |
| Terrain® (flumioxazin 500) | 14 | Cereal, pulses | g/ha | $\begin{aligned} & 80- \\ & 200 \\ & \hline \end{aligned}$ | 1-2mo | - | - | - | - | 30 | - | - | 30 | - | - |
| Voraxor ${ }^{\circledR}$ (saflufenacil $250+$ trifludimoxazin 125) | 14 | Wheat barley, (oatsfodder | L/ha | $\begin{aligned} & 80- \\ & 250 \\ & \end{aligned}$ | 1h | - | - | 0.1 | - | 0.1 | - | 0.1 | 0.1 | - | - |
| Weedmaster ${ }^{\text {D }}$ DT ${ }^{\ominus}$ <br> (glyphosate 470) | 9 | $\begin{gathered} \text { All } \\ \text { crops } \end{gathered}$ | L/ha | 80 | 6 h | 0.77-7 | 0.77-7 | 1.15-7 | 0.77-7 | 1.15-7 | 0.77-7 | 1.4-7 | 1.15-7 | 0.77-7 | 1.15-7 |
| Roundup UltraMAX ${ }^{\circ}$ <br> (glyphosate 570) | 9 | $\begin{gathered} \text { All } \\ \text { crops } \end{gathered}$ | L/ha | $\begin{aligned} & 80 \\ & \max \end{aligned}$ | 1 h | $\begin{gathered} 0.625- \\ 1.3 \end{gathered}$ | $\begin{gathered} 0.425- \\ 1.3 \end{gathered}$ | $\begin{aligned} & 0.95- \\ & 1.25 \end{aligned}$ | $\begin{gathered} 0.625- \\ 1.3 \end{gathered}$ | $\underset{1.25-}{0.625-}$ | - | $\begin{gathered} 0.625- \\ 1.3 \end{gathered}$ | $\begin{gathered} 0.95- \\ 1.25 \end{gathered}$ | - | $\begin{gathered} 0.625- \\ 1.25 \end{gathered}$ |
| CRUCIAL® (glyphosate 600) | 9 | $\begin{aligned} & \text { All } \\ & \text { crops } \end{aligned}$ | L/ha | 80 | 6 h | 0.6-5.5 | 0.6-5.5 | 0.9-5.5 | 0.6-5.5 | 0.9-5.5 | 0.6-5.5 | 1.1-5.5 | 0.9-5.5 | 0.6-5.5 | 0.9-5.5 |

[^4] Adjuvant key: $M O=$ mineral oil, $M O S=$ mineral oil plus surfactant, $M S O=$ methylated seed oil, $\mathrm{N} I \mathrm{~S}=$ non-ionic surfactant.

## Read the label before using a product.

|  |  |  | $\begin{aligned} & \overline{0} \\ & \text { ì } \\ & \hline \end{aligned}$ | 운 言 鬲 |  |  |  | $\begin{aligned} & \frac{\sqrt{3}}{2} \\ & \frac{1}{0} \\ & \stackrel{0}{0} \end{aligned}$ |  |  | $\begin{aligned} & \ddagger \\ & \stackrel{y}{y} \end{aligned}$ | $$ |  | Comments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| - | - | - | - | - | 25 | - | - | - | 20 | - | - | - | - | *Add glyphosate; refer label. Adjuvant: NIS 1000 0.1\%. |
| 0.835-1.4 |  |  |  |  |  |  |  |  |  |  |  |  |  | Must add an adjuvant. |
| 0.75-1.5 |  |  |  |  |  |  |  |  |  |  |  |  |  | Add NIS when dilution in tank is below $400 \mathrm{~mL} / 100 \mathrm{~L}$ water. Not otherwise required. |
| - | - | - | - | - | - | - | 15-45 | - | - | - | - | - | - | Always add a knockdown herbicide. Adjuvant: MOS 0.5\%. |
| - | - | - | $\begin{gathered} 0.105- \\ 0.16 \end{gathered}$ | - | $\begin{gathered} 0.105- \\ 0.16 \end{gathered}$ | - | - | - | $\begin{gathered} 0.105- \\ 0.16 \end{gathered}$ | $\begin{gathered} 0.105- \\ 0.16 \end{gathered}$ | - | - | $\begin{gathered} 0.105- \\ 0.16 \end{gathered}$ | Add glyphosate. |
| - | - | - 0 | $0.185 \wedge$ | - | - | $\begin{gathered} 0.215- \\ 0.375 \end{gathered}$ | $\begin{aligned} & 0.185- \\ & 0.375 \end{aligned}$ | - | - | 0.185 | 0.185 | - | 0.185 | *Add glyphosate. <br> $\wedge$ Add 2,4-D amine. |
| - | - | - | - | - | 25 | - | 15-25 | - | - | - | - | - | 15 | Requires tank mixing with fluroxypyr and/or glyphosate. |
| - | - | - | - | - | 0.5 | - | - | - | $\begin{gathered} 0.25- \\ 0.5 \end{gathered}$ | - | - | $\begin{array}{\|c} 0.25- \\ 0.5 \end{array}$ | - | *Southern NSW only. $\wedge$ Curled dock only. Add glyphosate. |
| 26-34 | - | 17-26 | - | - | 17-26 | - | 17-26 | - | 17-26 | - | - | 17-26 | 26-34 | Adjuvant: MSO 1\%. Adding paraquat or glyphosate will broaden the spectrum. |
| - | - | - | - | - | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | - | - | - | - | - | - | - | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | Always add a knockdown herbicide refer label. Adjuvant: MSO 1\%. |
| 0.8-3.2 | - | - | - | - | - | - | 0.8-3.2 | - | 0.8-3.2 | 0.8-2.4 | 0.8-3.2 | 0.8-3.2 | 0.8-3.2 | *Add 2,4-D amine. <br> ^Add metsulfuron-methyl 600 at <br> $5 \mathrm{~g} / \mathrm{ha}$. <br> \#Add dicamba. |
| 75. Enhances brownout when used in combination with glyphosate products. Striker ${ }^{\ominus}$ is registered for use on any weed listed on the partner product label. |  |  |  |  |  |  |  |  |  |  |  |  |  | Add glyphosate. |
| - | - | - | $\begin{gathered} 40 \text { or } \\ 15^{*} \end{gathered}$ | - | 20 | - | 15* | - | - | - | 15* | $\begin{gathered} 30 \text { or } \\ 15^{*} \end{gathered}$ | - | *Add glyphosate; refer label. |
| 30 | - | - | - | - | 30 | - | 30 | - | 30 | - | 30 | - | 30 | Must add a knockdown herbicide partner. Adjuvant: MSO 0.5\%. |
| 0.1 | - | 0.1 | - | - | 0.1 | - | 0.1 | - | 0.1 | - | - | 0.1 | 0.1 | Add glyphosate or paraquat. Can reduce glyphosate efficacy on grasses; increase glyphosate rate to compensate. <br> Adjuvant: MSO 1\%. |
| 1.4-7 | 1.15-7 | 0.77-7 | 1.15-7 | 1.15-7 | 0.77-7 | 1.15-7 | 0.77-7 | - | 1.15-7 | 0.96-7 | 1.4-7 | 1.15-7 | 1.15-7 |  |
| - | $\begin{gathered} 0.95- \\ 1.9 \end{gathered}$ | - | $\begin{gathered} 0.95- \\ 1.9 \end{gathered}$ | $\begin{aligned} & 0.95- \\ & 1.25 \end{aligned}$ | ${ }_{1.3}^{0.425-}$ | $\begin{gathered} 0.625- \\ 1.25 \end{gathered}$ | $\begin{aligned} & 0.32- \\ & 0.625 \end{aligned}$ | - | $\begin{gathered} 0.625- \\ 1.3 \end{gathered}$ | $\begin{gathered} 0.625- \\ 1.25 \end{gathered}$ | - | $\begin{gathered} 0.625- \\ 1.25 \end{gathered}$ | $\begin{gathered} 0.625- \\ 1.3 \end{gathered}$ | Many factors influence rate; refer label. |
| 1.1-5.5 | 0.9-5.5 | 0.6-5.5 | 0.9-5.5 | 0.9-5.5 | 0.6-5.5 | 0.9-5.5 | 0.6-5.5 | - | 0.9-5.5 | $\begin{gathered} 0.75- \\ 5.5 \end{gathered}$ | 1.1-5.5 | 0.9-5.5 | 0.9-5.5 |  |

NIS products might indicate a specific concentration (i.e. NIS 1000). Refer to adjuvant chart for example products.

Table 15. Herbicides for pre-emergent and post-sowing, pre-emergent grass control in cereals.

| Note: example trade names shown. Others may be available at different concentrations. See labels for details. |  |  | $\begin{aligned} & 00 \\ & 0.2 \\ & 0 . \\ & 0.0 \end{aligned}$ |  |  |  | n 0 0 0 2 2 0 0 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Arcade ${ }^{\text {( }}$ (prosulfocarb 800) | 15 | IBS | W, B | L/ha | >50 | - | 2.5 (S) 3.0 |
| Avadex ${ }^{\circ} \mathrm{Xtra}$ (tri-allate 500) | 15 | PSI IBS | W, B, T | L/ha | 50 | 1.6-2.4* | 3.2 or 1.6-2.4* |
|  |  |  | w |  |  | 3.2* | 3.2* |
| Boxer Gold ${ }^{\oplus}$ (prosulfocarb 800 + S-metolachlor 120) | 15 | IBS | W, T, O | L/ha | >50 | - | 2.5 |
|  |  | IBS fb PSPE | W, B |  |  | - | $\begin{gathered} 1.75 \mathrm{fb} 0.75 \text { or } \\ 2.5-3.0(\mathrm{~S}) \end{gathered}$ |
| Callisto ${ }^{\circ}$ (mesotrione 480) | 27 | IBS | Winter cereals | mL/ha | >50 | - | - |
| Chlorsulfuron $750 \mathrm{~g} / \mathrm{kg}$ | 2 | PSIIBS | W, T | g/ha | >30 | $20^{*}$ | 15 or 20 |
| Dual Gold ${ }^{\circ}$ ( S -metolachlor 960) | 15 | IBS PSPE | B, O | L/ha | >60 | - | 0.375-0.5 (S) |
| Luximax ( (inmethylin 750) | 30 | IBS | W (not durum) | L/ha | 70-150 | - | 0.5 |
| Mateno ${ }^{\circ}$ Complete (aclonifen $400+$ pyroxasulfone $100+$ diflufenican 66) | $32+15+12$ | IBS | W (not durum) | L/ha | 70-100 | 1.0 | 0.75-1.0 |
|  |  |  | B |  |  | - | 0.75 |
| Overwatch ${ }^{\text {® }}$ (bixlozone 400) | 13 | IBS | W, B | L/ha | 60-100 | 1.25 (S) | 1.25 |
| Rifle ${ }^{\circ} 440$ (pendimethalin 440) | 3 | PSI | W, B | L/ha | 50-200 | - | 0.9 or 1.4 |
|  |  | IBS |  |  |  | - | 1.35 |
| Sakura® ${ }^{\text {(pyroxasulfone }} 850$ ) | 15 | IBS | W (not durum), T | g/ha | 50-100 | 118 | 118 |
| $\begin{aligned} & \text { Sentry }{ }^{\ominus} \text { (imazapic } 525 \text { + } \\ & \text { imazapyr 175) } \end{aligned}$ | 2 | IBS | IMI ( $\mathrm{W}, \mathrm{B}, \mathrm{O}$ ^) | g/ha | 70 | 40-50 (S) | 40-50 (S) |
| Sulfosulfuron 750 | 2 | PSIIBS | W, T | g/ha | 40-100 | 25* | 25* |
| Terbyne ${ }^{\circledR}$ Xtreme ${ }^{\circledR}$ (terbuthylazine 875) | 5 | IBS | W, B, O (all not irrigated) | kg/ha | >50 | - | - |
| Triasulfuron 750 | 2 | IBS | w | g/ha | 50-100 | 35 | 35 or 10-15* |
| TriflurX® (trifluralin 480) | 3 | PSI | W, B, T | L/ha | 70-450 | 0.8 | 0.8 |
|  |  | IBS | $\text { W, B, T, (O } \max 2$ |  |  | 1.5-3 | 1.5-3 |
| Valor®Terrain® (flumioxazin 500 ) | 14 | IBS | W (not durum) | g/ha | 80 | 120* | 120* |
| Voraxor ${ }^{\circledR}$ (saflufenacil $250+$ trifludimoxazin 125) | 14 | IBS | Winter cereal (O - hay or fodder only) | mL/ha | 80-250 | - | $\underbrace{200^{*} \text { or } 240 \wedge}_{(S)}$ |


|  |  |  |  | $\begin{aligned} & \frac{n}{0} \\ & \frac{0}{2} \\ & \frac{0}{3} \end{aligned}$ |  | Comments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| - | - | - | - | - | - |  |
| 1.6-2.4* (S) | 1.6-2.4* (S) | 1.6-2.4* | 1.6-2.4* | 1.6 | 1.6-2.4* |  |
| $3.2{ }^{*}(\mathrm{~S})$ | $3.2{ }^{*}(S)$ | 3.2* | $3.2^{*}$ | 3.2* (S) | 3.2* |  |
| 2.5 (S) | - | - | 2.5 | - | - | Can be applied split or as a single higher rate. Adding trifluralin can increase weed spectrum; refer label. |
| $\begin{gathered} 1.75 \mathrm{fb} 0.75 \\ (\mathrm{~S}) \end{gathered}$ | - | - | 1.75 fb 0.75 | - | - | Can be applied split or as a single higher rate. |
| - | - | - | - | - | - |  |
| 20* | 20 (S) | - | - | - | - | *Add trifluralin. <br> Rate is influenced by soil type and pH ; refer label. |
| - | - | - | - | - | - |  |
| 0.5 | 0.5 (S) | - | - | 0.5 (S) | - | Incorporate within 3 days. |
| 0.75-1.0 | 1.0 (S) | - | 0.75-1.0 | 1.0 (S) | - | There are many considerations for effective control and crop safety; refer label. |
| 0.75 | - | - | 0.75 | - | - | Phytotoxicity considerations; refer label. Do not use on irrigated barley. |
| 1.25 (S) | 1.25 (S) | - | 1.25 | 1.25 (S) | - | Do not sow barley with disc seeders. |
| - | - | - | - | 0.9 or 1.4 | - | Incorporation method influences rate; refer label. |
| - | - | - | - | 1.35 (S) | - |  |
| 118 | 118 (5) | - | 118 | 118 (5) | - |  |
| 40-50 | 40-50 | 40-50 (S) | - | 40-50 (S) | - | *Imidazolinone-tolerant varieties only. $\wedge$ Grain export restrictions apply; refer label. |
| 25 (S) or * | 25 (S) | - | - | 25*^ | - | *Add trifluralin. <br> $\wedge$ Add tri-allate. |
| - | - | - | - | - | - | Low rate on light and/or high pH soils. Refer label for other crop safety considerations. |
| - | - | - | - | - | - | *Add trifluralin. |
| - | - | - | - | - | - |  |
| 1.5-3 | 1.5-3 | - | 1.5-3 | 1.5-3 | 1.5-3 | Rates vary depending on mix partner; refer label. Do not add tri-allate on oats. |
| 120 (S)* | 120 (S)* | - | 120* | 120* | 120* | *Add trifluralin $2 \mathrm{~L} / \mathrm{ha}$ and tri-allate at 3.2 L /ha. |
| - | - | - | - | - | - | *Apply 0-7 days before sowing. <br> $\wedge$ Apply 7-21 days before sowing. |

Plant backs: in a failed crop/re-sowing situation, plant backs apply. Refer to the plant back table and the label.
Crop key: $\mathrm{B}=$ barley, $\mathrm{O}=$ oats, $\mathrm{T}=$ triticale, $\mathrm{W}=$ wheat, $\mathrm{IMI}=$ imidazolinone-tolerant, $(\mathrm{S})=$ suppression.
Incorporation key: PSI = pre-sowing incorporated, IBS = incorporated by sowing, PSPE = post-sowing, pre-emergent, fb = followed by

## NOTES

## GOT OVERWATCH? GOT OPTIONS.

When you have Overwatch ${ }^{\oplus}$ in the mix, you're ready for anything

By delivering broad spectrum control of many important weeds including up to 12 weeks residual activity on annual ryegrass and a nil re-cropping
interval to wheat. barl y. canola and select pulse crops, only Overwatche
Herbicide gives you the flexibility you need. Herbicide gives you the flexibility you need.


Table 16. Herbicides for pre-emergent and post-sowing, pre-emergent broadleaf control in cereals - page 1 of 2.

| Note: example trade names shown. Others may be available at different concentrations. See labels for details. |  |  | $\begin{aligned} & 00 \\ & 0 . \\ & 0 \\ & 0.0 \\ & 0.0 \end{aligned}$ | $\begin{aligned} & \stackrel{0}{3} \\ & \stackrel{y}{0} \\ & \stackrel{4}{5} \end{aligned}$ |  |  |  | $\begin{aligned} & \frac{\mathrm{y}}{\circ} \\ & \stackrel{y}{\omega} \end{aligned}$ |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Arcade ${ }^{\circ}$ (prosulfocarb 800) | 15 | IBS | W, B | L/ha | >50 | - | - | - | - | - | - | - | - |
| Avadex ${ }^{\oplus}$ Xtra (triallate 500) | 15 | PSIIBS | W, B, T | L/ha | 50 | $\begin{aligned} & 1.6- \\ & 2.4^{*} \\ & (\mathrm{~S}) \end{aligned}$ | - | - | - | $\begin{aligned} & 1.6- \\ & 2.4^{*} \end{aligned}$ | - | - | - |
|  |  |  | w |  |  | 3.2 | - | - | - | 3.2 (S) | - | - | - |
| Boxer Gold ${ }^{\circ}$ (prosulfocarb 800 + S-metolachlor 120) | 15 | IBS | Winter cereals | L/ha | >50 | - | - | - | - | - | - | - | - |
|  |  | IBS fb PSPE | W, B |  |  | - | - | - | - | - | - | - | - |
| Callisto ${ }^{( }$(mesotrione 480) | 27 | IBS | Winter cereals | $\begin{gathered} \mathrm{mL} / \\ \mathrm{ha} \end{gathered}$ | >50 | - | $\begin{aligned} & 100- \\ & 200 \end{aligned}$ | - | - | - | $\begin{aligned} & 100- \\ & 150(\mathrm{~S}) \\ & \text { or } 200 \end{aligned}$ | $\begin{aligned} & 100- \\ & 200 \end{aligned}$ | $\begin{aligned} & 100- \\ & 200 \end{aligned}$ |
| Chlorsulfuron $750 \mathrm{~g} / \mathrm{kg}$ | 2 | PSIIBS | W, T | g/ha | >30 | 15 | - | - | - | - | - | 20 | - |
| Dual Gold ${ }^{\text {® }}$ <br> (S-metolachlor 960) | 15 | IBS PSPE | Winter cereals | L/ha | >60 | - | - | - | - | - | - | - | - |
| Luximax ${ }^{\circledR}$ (cinmethylin 750) | 30 | IBS | W (not durum) | L/ha | $\begin{aligned} & 70- \\ & 150 \end{aligned}$ | - | - | - | - | - | - | - | - |
| Mateno ${ }^{\circ}$ Complete (aclonifen 400 + pyroxasulfone 100 + diflufenican 66) | $\begin{aligned} & 32+ \\ & 15+ \\ & 12 \end{aligned}$ | IBS | W (not durum) | L/ha | $\begin{aligned} & 70- \\ & 100 \end{aligned}$ | - | - | - | - | - | - | 1.0 (S) | - |
|  |  |  | B |  |  | - | - | - | - | - | - | - | - |
| Overwatch ${ }^{\ominus}$ <br> (bixlozone 400) | 13 | IBS | W, B | L/ha | $\begin{aligned} & 60- \\ & 100 \end{aligned}$ | - | 1.25 (S) | 1.25 | - | - | - | 1.25 (S) | 1.25 (S) |
| Rifle ${ }^{\bullet} 440$ (pendimethalin 440) | 3 | PSI | W, B | L/ha | $\begin{aligned} & 50- \\ & 200 \end{aligned}$ | - | - | - | - | - | - | - | - |
|  |  | IBS |  |  |  | - | - | - | - | - | - | - | - |
| Sakura® (pyroxasulfone 850) | 15 | IBS | W (not durum), $T$ | g/ha | $\begin{aligned} & 50- \\ & 100 \\ & \hline \end{aligned}$ | - | - | - | - | - | - | - | - |
| Sentry ${ }^{\circ}$ (imazapic $525+$ imazapyr 175) | 2 | IBS | IMI ( $\mathrm{W}, \mathrm{B}, \mathrm{O}$ ) | g/ha | 70 | - | - | - | 40-50 | - | $\begin{gathered} 40-50 \\ (S)^{*} \end{gathered}$ | $\begin{gathered} 40-50 \\ (\mathrm{~S}) \end{gathered}$ | - |
| Sulfosulfuron 750 | 2 | PSIIBS | W, T | g/ha | $\begin{aligned} & 40- \\ & 100 \end{aligned}$ | - | - | - | - | - | - | - | - |
| Terbyne ${ }^{\ominus}$ Xtreme ${ }^{\ominus}$ (terbuthylazine 875) | 5 | IBS | W, B, O (not irrigated) | kg/ha | >50 | - | - | - | - | - | - | - | - |
| Triasulfuron 750 | 2 | IBS | W | g/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | 30 | - | - | 30 | - | - | 35 | - |
| TriflurX ${ }^{\text {P }}$ (trifluralin 480) | 3 | PSI | W, B, T | L/ha | $\begin{aligned} & 70- \\ & 455 \end{aligned}$ | - | - | - | - | - | - | - | - |
|  |  | IBS | $\begin{gathered} \mathrm{W}, \mathrm{~B}, \mathrm{~T}, \text { (O } \\ \max 2 \mathrm{~L} / \mathrm{ha}) \end{gathered}$ |  |  | 1.5-3.0 | - | - | - | 1.5-3.0 | - | - | - |
| Valor ${ }^{\bullet} /$ Terrain ${ }^{\circledR}$ (flumioxazin 500) | 14 | IBS | W (not durum) | g/ha | 80 | $\begin{aligned} & 120 \\ & (\mathrm{~S})^{*} \end{aligned}$ | $\begin{aligned} & 120 \\ & (\mathrm{~S})^{*} \end{aligned}$ | - | 120 (S) | $\begin{aligned} & 120 \\ & (\mathrm{~S})^{*} \end{aligned}$ | 120 (S) | 120 (S) | - |
| Voraxor® (saflufenacil 250 + trifludimoxazin 125) | 14 | IBS | Winter cereal (O - hay or fodder only) | g/ha | $\begin{aligned} & 80- \\ & 250 \\ & 200 \end{aligned}$ | - | $\begin{gathered} 200^{*} \text { or } \\ 240 \wedge \end{gathered}$ | - | $\begin{gathered} 200^{2} \text { or } \\ 240 \wedge \end{gathered}$ | - | - | $\begin{gathered} 200^{*} \text { or } \\ 240 \wedge \end{gathered}$ | - |


|  | $\overline{0}$ 0 0 0 0 0 0 |  |  | $\stackrel{\breve{\circ}}{\circ}$ |  |  |  | $\begin{aligned} & \stackrel{0}{\check{L}} \\ & \frac{0}{\pi} \\ & \frac{\ddot{d}}{4} \end{aligned}$ |  |  |  |  | Comments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| - | $\begin{aligned} & 1.6- \\ & 2.4^{*} \end{aligned}$ | - | $\begin{aligned} & 1.6- \\ & 2.4^{*} \\ & (\mathrm{~s} \end{aligned}$ | - | - | - | - | - | $\begin{aligned} & 1.6- \\ & 2.4^{*} \end{aligned}$ | - | - | - | *Add trifluralin $2 \mathrm{~L} / \mathrm{ha}$. |
| - | 3.2 | - | 3.2 (S) | - | - | - | - | - | 3.2 (S) | - | - | - |  |
| - | - | 2.5 | - | - | - | - | - | - | - | - | - | - |  |
| - | - | $\begin{aligned} & 1.75 \mathrm{fb} \\ & 0.75 \end{aligned}$ | - | - | - | - | - | - | - | - | - | - |  |
| 200 (S) | - | - | - | - | - | $\begin{aligned} & 100- \\ & 200 \end{aligned}$ | $\begin{aligned} & 100- \\ & 200 \end{aligned}$ | $\begin{aligned} & 100- \\ & 200 \end{aligned}$ | 200 (S) | - | $\begin{aligned} & 100- \\ & 200 \\ & (\mathrm{~S}) \end{aligned}$ | - |  |
| - | 20 | - | $\begin{gathered} 15 \text { or } \\ 20 \end{gathered}$ | 20 | - | - | - | - | $\begin{gathered} 15 \text { or } \\ 20 \end{gathered}$ | - | - | - | *Add trifluralin. Rate is influenced by soil type and pH ; refer label. |
| - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| - | - | - | - | - | - | - | - | - | - | - | - | - | Incorporate within 3 days. |
| - | - | - | 1.0 (S) | - | - | - | - | - | 1.0 (S) | - | - | - | There are many considerations for effective control and crop safety; refer label. |
| - | - | - | - | - | - | - | - | - | - | - | - | - | Phytotoxicity considerations; refer label. Do not use on irrigated barley. |
| - | - | - | - | - | - | - | - | - | - | - | - | - | Do not sow barley with disc seeders. |
| - | - | - | - | - | - | - | - | - | - | - | - | - | Incorporation method influences rate; refer label. |
| - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| - | - | - | - | - | $\begin{gathered} 40-50 \\ (5) \end{gathered}$ | - | - | - | $\begin{gathered} 40-50 \\ (\mathrm{~S}) \end{gathered}$ | - | - | - | ```*Imidazolinone-tolerant varieties only. ^Grain export restrictions apply; refer label.``` |
| - | - | - | - | - | - | - | - | - | 25* | - | - | - | *Add trifluralin. |
| - | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | - | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | - | - | - | - | - | - | - | - | - | Low rate on lighter and/or high pH soils. Refer label for other crop safety considerations. |
| - | $\begin{gathered} 30 \text { or } \\ 10-15^{*} \end{gathered}$ | - | $\begin{gathered} 30 \text { or } \\ 10-15^{*} \end{gathered}$ | - | - | - | - | - | $\begin{gathered} 30 \text { or } \\ 10-15^{*} \end{gathered}$ | - | - | 35 (S) | *Add trifluralin. |
| - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| - | 1.5-3.0 | - | 1.5-3.0 | - | - | - | - | - | 1.5-3.0 | - | - | - | Rates vary depending on mix partner; refer label. Do not add tri-allate on oats. |
| 120 (S) | 120* | 120 (S) | $\begin{aligned} & 120 \\ & (\mathrm{~S})^{*} \end{aligned}$ | - | - | - | - | - | 120* | 120 (S) | - | - | *Add trifluralin $2 \mathrm{~L} /$ ha and tri-allate at $3.2 \mathrm{~L} / \mathrm{ha}$. |
| - | - | - | $\begin{gathered} 200^{*} \\ \text { or } \\ 240^{\wedge} \end{gathered}$ | - | - | - | - | $\begin{gathered} 200^{*} \\ \text { or } \\ 240 \wedge \end{gathered}$ | $\begin{gathered} 200^{*} \\ \text { or } \\ 240^{\wedge} \end{gathered}$ | $\begin{gathered} 200^{*} \\ \text { or } \\ 240 \wedge \end{gathered}$ | - | - | *Apply 0-7 days before sowing. $\wedge$ Apply 7-21 days before sowing. |

Plant backs: in a failed crop/re-sowing situation, plant backs apply. Refer to the plant back table and the label.
Crop key: $\mathrm{B}=$ barley, $\mathrm{O}=$ oats, $\mathrm{T}=$ triticale, $\mathrm{W}=$ wheat, $I M I=$ imidazolinone-tolerant, $f \mathrm{f}=$ followed by.
Incorporation key: $1 B S$ = incorporated by sowing, PSI = pre-sowing incorporated, PSPE = post-sowing, pre-emergent.

Table 16. Herbicides for pre-emergent and post-sowing, pre-emergent broadleaf control in cereals - page 2 of 2.


|  |  |  | $\begin{aligned} & \bar{y} \\ & \stackrel{0}{0} \\ & \stackrel{0}{n} \\ & \tilde{n} \end{aligned}$ |  | $\begin{aligned} & \stackrel{\rightharpoonup}{\dddot{0}} \\ & \stackrel{0}{n} \\ & \stackrel{1}{1} \\ & \stackrel{\omega}{\hbar} \\ & \stackrel{\hbar}{亡} \end{aligned}$ |  |  |  | $\begin{aligned} & \text { ᄃ } \\ & \stackrel{y}{0} \\ & \hline \end{aligned}$ |  |  |  | Comments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| - | $\begin{aligned} & 1.6- \\ & 2.4^{*} \\ & (\mathrm{~S}) \end{aligned}$ | - | - | - | - | - | - | - | - | - | - | $\begin{aligned} & 1.6- \\ & .4^{*} \end{aligned}$ | *Add trifluralin $2 \mathrm{~L} / \mathrm{ha}$. |
| - | 3.2 (S) | - | - | - | - | - | - | - | - | - | - | 3.2 |  |
| - | - | - | - | - | - | - | 2.5 | - | - | - | - | - |  |
| - | - | - | - | - | - | - | $\begin{gathered} 1.25- \\ 2.5 \end{gathered}$ | - | - | - | - | - |  |
| $\begin{aligned} & 100- \\ & 200 \end{aligned}$ | $\begin{aligned} & 100- \\ & 150 \\ & \text { (S) or } \\ & 200 \end{aligned}$ | - | $\begin{array}{\|l\|l\|} \hline 100- \\ 200 \end{array}$ | - | - | - | - | - | $\begin{aligned} & 100- \\ & 200 \end{aligned}$ | $\begin{aligned} & 100- \\ & 200 \end{aligned}$ | $\begin{aligned} & 100- \\ & 200 \end{aligned}$ | $\begin{aligned} & 100- \\ & 200 \\ & (S) \end{aligned}$ |  |
| - | 20 | - | - | 20 (S) | - | - | - | - | - | - | 15 | $\begin{gathered} 15 \text { or } \\ 20 \end{gathered}$ | *Add trifluralin. <br> Rate is influenced by soil type and pH ; refer label. |
| - | - | - | - | - | - | - | $\begin{gathered} 0.15- \\ 0.25 \end{gathered}$ | - | - | - | - | - |  |
| - | - | - | - | - | - | - | 0.5 | - | - | - | - | - | Incorporate within 3 days. |
| - | - | - | - | - | - | - | $\begin{gathered} 0.75- \\ 1.0 \end{gathered}$ | - | - | - | - | - | There are many considerations for effective control and crop safety; refer label. |
| - | - | - | - | - | - | - | 0.75 | - | - | - | - | - | Phytotoxicity considerations; refer label. Do not use on irrigated barley. |
| 1.25 | - | - | - | - | - | - | - | - | - | $\begin{gathered} 1.25 \\ (S) \end{gathered}$ | - | 1.25 | Do not sow barley with disc seeders. |
| - | - | - | - | - | - | - | - | - | - | - | - | $\begin{gathered} 0.9 \text { or } \\ 1.4 \end{gathered}$ | Incorporation method influences rate; refer label. |
| - | - | - | - | - | - | - | - | - | - | - | - | 1.35 |  |
| - | - | - | - | - | - | - | 118 | - | - | - | - | - |  |
| - | - | - | - | - | - | - | - | - | - | 40-50 | - | 40-50 | *Imidazolinone-tolerant varieties only. $\wedge$ Grain export restrictions apply; refer label. |
| - | - | - | - | - | - | - | - | - | - | - | 25 | 25* | *Add trifluralin. |
| $0.86-$ | - | - | - | - | - | - | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | $0.86-$ | - | - | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | Low rate on light and/or high pH soils. Refer label for other crop safety considerations. |
| 30 | 35 | - | - | - | - | 30 (S) | - | 30 | - | 35 (S) | $\begin{gathered} 30 \text { or } \\ 10- \\ 15^{*} \end{gathered}$ | $\begin{gathered} 35 \text { or } \\ 10- \\ 15^{*} \\ \hline \end{gathered}$ | *Add trifluralin. |
| - | - | - | - | - | - | - | - | - | - | - | - | 0.8 |  |
| - | $\begin{gathered} 1.5- \\ 3.0 \end{gathered}$ | - | - | - | - | - | - | - | - | - | - | $\begin{aligned} & 1.5- \\ & 3.0 \end{aligned}$ | Rates vary depending on mix partner; refer label. Do not add tri-allate on oats. |
| $\begin{array}{\|l\|} \hline 120 \\ (\mathrm{~S}) \\ \hline \end{array}$ | $\begin{aligned} & 120 \\ & (\mathrm{~S})^{*} \end{aligned}$ | - | - | - | - | - | $\begin{aligned} & 120 \\ & (\mathrm{~S}) \end{aligned}$ | - | - | $\begin{aligned} & 120 \\ & (\mathrm{~S}) \end{aligned}$ | - | 120* | *Add trifluralin $2 \mathrm{~L} /$ ha and tri-allate at $3.2 \mathrm{~L} / \mathrm{ha}$. |
| $\begin{gathered} 200^{*} \\ \text { or } \\ 240 \wedge \end{gathered}$ | - | - | - | - | $\begin{gathered} 200^{*} \\ o r \\ 240 \wedge \end{gathered}$ | - | - | $\begin{gathered} 200^{*} \\ \text { or } \\ 240 \wedge \end{gathered}$ | - | $\begin{gathered} 200^{*} \\ o r \\ 240 \wedge \end{gathered}$ | $\begin{gathered} 200^{*} \\ \text { or } \\ 240^{\wedge} \end{gathered}$ | $\begin{gathered} 200^{*} \\ \text { or } \\ 240^{\wedge} \end{gathered}$ | *Apply 0-7 days before sowing. <br> $\wedge$ Apply 7-21 days before sowing. |

Plant backs: in a failed crop/re-sowing situation, plant backs apply. Refer to the plant back table and the label.
Crop key: $\mathrm{W}=$ wheat, $\mathrm{T}=$ triticale, $\mathrm{O}=$ oats, $\mathrm{B}=$ Barley, $\mathrm{IMI}=$ imidazolinone-tolerant, $(\mathrm{S})=$ suppression.
Incorporation key: $1 \mathrm{BS}=$ incorporated by sowing, PSI = pre-sowing incorporated, PSPE = post-sowing, pre-emergent.

| Note: example trade names shown. Others may be available at different concentrations. See labels for details. |  |  |  |  |  |  |  |  | $\begin{aligned} & \text { ू } \\ & \frac{0}{5} \\ & \frac{0}{0} \\ & \frac{\Delta}{n} \\ & \frac{0}{3} \\ & \frac{0}{5} \end{aligned}$ | $\begin{aligned} & \stackrel{n}{0} \\ & \frac{0}{3} \\ & \frac{0}{3} \end{aligned}$ |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Grass control products. High levels of herbicide resistance to Groups 1 and 2 selective herbicides are common in most grass weeds. Do not rely on these products as your only management tool. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Achieve ${ }^{\oplus}$ WG (tralkoxydim 400) | 1 | 12-22 | g/ha | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | $\begin{gathered} 380- \\ 500 \\ (S) \end{gathered}$ | $\begin{aligned} & 380- \\ & 500 \end{aligned}$ | - | - | - | $\begin{aligned} & 300- \\ & 50 \end{aligned}$ |  |  |  |  |  |  |  |
| Arcade ${ }^{\ominus}$ <br> (prosulfocarb 800) | 15 | 11-25 | L/ha | >70 | - | 3.0 (S) | - | - | - | - |  |  |  |  |  |  |  |
| Atlantis ${ }^{\circ}$ OD (mesosulfuron-methyl 30) Wheat only | 2 | >13 | $\begin{gathered} \mathrm{mL} / \\ \mathrm{ha} \end{gathered}$ | 50-80 | 330 | $\begin{gathered} 330 \\ \text { (S) } \end{gathered}$ | 330 (S) | 330 (S) | - | 330 |  |  |  |  |  |  |  |
| Axial ${ }^{0}$ Xtra (pinoxaden 50 + cloquintocet-mexyl 12.5) | 1 | 12-49 | L/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | 0.4-0.5 | $\begin{aligned} & 0.5- \\ & 0.6 \\ & \text { (S) } \end{aligned}$ | - | - | - | 0.3-0.4 |  |  |  |  |  |  |  |
| Boxer Gold ${ }^{\circ}$ (prosulfocarb 800 + S-metolachlor 120) | 15 | 00-25 | L/ha | >50 | - | $\begin{aligned} & 2.5- \\ & 3.0 \\ & (S) \\ & \hline \end{aligned}$ | - | - | - | - |  |  |  |  |  |  |  |
| Cheetah ${ }^{\circ}$ Gold (fenoxaprop-p-ethyl $13.6+$ diclofop-methyl + sethoxydim 20) | 1 | 12-22 | L/ha | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | 1.0 (S) | 1.0 | - | - | - | 1.0 |  |  |  |  |  |  |  |
| Decision ${ }^{\ominus}$ (diclofopmethyl 200 + sethoxydim 20) | 1 | 12-21 | L/ha | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | - | 1.0 | - | - | - | - |  |  |  |  |  |  |  |
| Diclofop-methyl 375 | 1 | $\begin{gathered} \text { W 12-21 } \\ \text { B 15-21 } \end{gathered}$ | L/ha | 80 | - | 1.0 | - | - | - | 1.5-2 |  |  |  |  |  |  |  |
| Foxtrot® (fenoxyprop-pethyl 69 + cloquintocetmexyl 34.5 ) | 1 | $\begin{gathered} \text { W 12-21 } \\ \text { B 15-21 } \end{gathered}$ | L/ha | 80 | $\begin{gathered} 0.635- \\ 0.8 \end{gathered}$ | - | - | - | - | $\begin{gathered} 0.475- \\ 0.635 \end{gathered}$ |  |  |  |  |  |  |  |
| Topik ${ }^{\ominus}$ (clodinafoppropargyl $240+$ cloquintocet-mexyl 60) | 1 | 12-24 | L/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | $\begin{aligned} & 85- \\ & 160 \end{aligned}$ | $\begin{aligned} & 160- \\ & 210 \end{aligned}$ | - | - | - | $\begin{aligned} & 65- \\ & 125 \end{aligned}$ |  |  |  |  |  |  |  |
| Grass and broadleaf control products |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Chlorsulfuron 750 | 2 | $\begin{aligned} & W 00, \\ & B>12 \end{aligned}$ | g/ha | >30 | - | 15-25 | - | - | - | - | 15 | - | 20 | - | - | 15 | - |
| Hussar® (idosulfuronmethyl $100+$ mefenpyrdimethyl 300) | 2 | 13-25 | $\begin{gathered} \mathrm{mL} / \\ \mathrm{ha} \end{gathered}$ | 50-80 | $\begin{aligned} & 75- \\ & 100 \\ & \text { (S) } \end{aligned}$ | $\begin{aligned} & 75- \\ & 100 \\ & \text { (S) } \end{aligned}$ | - | - | - | $\begin{aligned} & 75- \\ & 100 \\ & \text { (S) } \end{aligned}$ | - | $\begin{aligned} & 100 \\ & \text { (S) } \end{aligned}$ | 75 (S) | - | - | 75 | - |
| Intercept ${ }^{\ominus}$ (imazamox 33 + imazapyr 15) | 2 | $\begin{aligned} & \text { W 13-31 } \\ & \text { B15-31* } \end{aligned}$ | L/ha | >70 | - | $\begin{aligned} & 0.6- \\ & 0.75 \\ & \text { (S) } \end{aligned}$ | $\begin{gathered} 0.375- \\ 0.75 \end{gathered}$ | $\begin{gathered} 0.375- \\ 0.75 \end{gathered}$ | $\begin{aligned} & 0.6- \\ & 0.75 \\ & \text { (S) } \end{aligned}$ | $\begin{gathered} 0.375- \\ 0.75 \end{gathered}$ | - | $\begin{aligned} & 0.6- \\ & 0.75 \\ & (5) \end{aligned}$ | - | - | - | - | - |
| Mateno ${ }^{\circ}$ Complete (aclonifen $400+$ | $\begin{gathered} 32 \\ + \\ 15 \end{gathered}$ | $\begin{gathered} \text { Wheat } \\ 11-23 \\ \text { (not } \\ \text { durum) } \end{gathered}$ | L/ha | $\begin{aligned} & 70- \\ & \hline \end{aligned}$ | - | $\begin{gathered} 0.75- \\ 1.0 \end{gathered}$ | 1.0 (S) | - | $\begin{gathered} 0.75- \\ 1.0 \end{gathered}$ | - | - | - | - | $\begin{gathered} 0.75 \\ \text { (S) or } \\ 1.0 \end{gathered}$ | 1.0 | - | - |
| diflufenican 66) | $\begin{gathered} + \\ 12 \end{gathered}$ | Barley <br> 13-23 |  |  | - | 0.75 | - | - | 0.75 | - | - | - | - | $\begin{aligned} & 0.75 \\ & (5) \end{aligned}$ | - | - | - |
| Rexade ${ }^{\oplus}$ (pyroxsulam 150 + halauxifen 50) Wheat only | $\begin{gathered} 2+ \\ 4 \end{gathered}$ | 13-31 | g/ha | $\begin{aligned} & 80- \\ & 100 \end{aligned}$ | 100 | $\begin{aligned} & 100 \\ & (\mathrm{~s} \end{aligned}$ | 100 (S) | 100 | $\begin{aligned} & 100 \\ & (\mathrm{~S} \end{aligned}$ | 100 | - | 100 | 100* | 100 | 100* | - | 100 |
| Sentry ${ }^{\text {(imazapic }} 525+$ imazapyr 175) imazapyr 175) | 2 | $\underset{14-37^{*}}{w}$ | g/ha | >70 | 40 | 40 (S) | 40 | 40 | 40 (S) | 40 | 40 | 40 | 40 | 40 | 40 | - | - |
| Sulfosulfuron 750 Wheat only | 2 | $\begin{gathered} 11- \\ 15 / 22 \end{gathered}$ | g/ha | $\begin{aligned} & 40- \\ & 100 \end{aligned}$ | - | - | 25 (S) | $\begin{aligned} & 20 \text { or } \\ & 25(\mathrm{~S}) \end{aligned}$ | 25 | 25 (S) | 25 | - | - | 20 | - | - | - |

$$
\begin{array}{l|l|l|l|l|l|l|l|l|l|l|l|l}
\text { information. } \\
\hline & & & & & & & & & & & \begin{array}{l}
\text { Rate is influenced by crop and weed size at } \\
\text { application. Adjuvant: MOS 1\%. }
\end{array} \\
\hline
\end{array}
$$

Adjuvant: NIS $0.25 \%$ or MSO $1 \%$.

## Adjuvant:MOS $0.5 \%$ or MSO $1 \%$

Adjuvant: MOS $0.5 \%$ or MO, MSO $1 \%$.

Adjuvant: MSO, MO, MOS 0.5\%.

| - | 20 | $\begin{gathered} 15 \text { or } \\ 20 \end{gathered}$ | - | - | - | - | - | 20 | - | - | - | Rate, plant backs and crop safety are heavily influenced by soil pH ; refer label. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| - | 75 (S) | 75 | - | - | - | 75 (S) | - | 75 | - | 75 | - | Do not apply to barley unless no other weed control option is viable; refer label. Adjuvant: NIS $10000.25 \%$. |
| - | - | - | - | - | - | - | - | $\begin{aligned} & 0.6- \\ & 0.75 \\ & 0.6 \end{aligned}$ | - | - | $\begin{aligned} & 0.6- \\ & 0.75 \end{aligned}$ | *Clearfield Plus wheat and CL barley only. Add MCPA LVE or clopyralid to enhance control. Adjuvant: MSO 0.5\%. |
| - | - | 1.0 | - | - | - | - | - | 1.0 | - | - | - | There are many considerations for effective control and crop safety; refer label. |
| - | - | - | - | - | - | - | - | - | - | - | - | Phytotoxicity considerations; refer label. Do not use on irrigated barley. |
| - | - | 100 | - | - | 100 | 100 | $\begin{aligned} & 100^{*} \\ & (\mathrm{~S}) \end{aligned}$ | 100 | 100 | 100 (S) | $\begin{aligned} & 100^{*} \\ & (\mathrm{~S}) \end{aligned}$ | *Requires mix partner; refer label. Adjuvant: always use NIS $10000.25 \%$. |
| - | 40 | 40 | - | 40 (S) | - | 40 (S) | - | 40 | - | - | - | *Single gene IMI wheat only. Add MCPA LVE to enhance control. Adjuvant: MSO 0.5\%. |
| - | - | - | - | - | - | 20 | - | - | - | - | - | Adjuvant: MSO 1-2\%. Rate, plant backs and crop safety are heavily influenced by soil pH; refer label. |



Grass and broadleaf control products

| Chlorsulfuron 750 | 2 | $\begin{aligned} & W 00, \\ & B>12 \end{aligned}$ | g/ha | >30 | - | - | 20 | 15 | - | 15 | - | - | 20 | 20 | - |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Hussare (idosulfuronmethyl 100 + mefenpyrdimethyl 300) | 2 | 13-25 | mL/ha | 50-80 | 100 | - | - | 75 | - | 100 | - | - | - | 75 | - |
| Intercept ${ }^{\ominus}$ (imazamox 33 + imazapyr 15) | 2 | $\begin{aligned} & \text { W 13-31 } \\ & \text { B15-31* } \end{aligned}$ | L/ha | >70 | - | - | - | $\begin{gathered} 0.375- \\ 0.75 \end{gathered}$ | - | - | - | - | - | - | - |
| Mateno ${ }^{\circ}$ Complete (aclonifen 400 + pyroxasulfone 100 + diflufenican 66) | $\begin{aligned} & 32 \\ & + \\ & 15 \\ & + \\ & 12 \end{aligned}$ | $\begin{aligned} & \text { Wheat } \\ & 11-23 \\ & \text { (not } \\ & \text { durum) } \end{aligned}$ | L/ha | $\begin{aligned} & 70- \\ & 100 \end{aligned}$ | - | - | - | 0.75 | - | - | - | $\stackrel{0.75-}{1.0}$ | - | - | - |
|  |  | $\begin{aligned} & \text { Barley } \\ & 13-23 \end{aligned}$ |  |  | - | - | - | 0.75 | - | - | - | 0.75 | - | - | - |
| Rexade ${ }^{\oplus}$ (pyroxsulam $150+$ halauxifen 50) Wheat only | $\begin{gathered} 2+ \\ 4 \end{gathered}$ | 13-31 | g/ha | $\begin{aligned} & 80- \\ & 100 \end{aligned}$ | 100 | - | - | 100* | - | - | - | 100* | - | - | - |
| Sentry ${ }^{\ominus}$ (imazapic $525+$ imazapyr 175) | 2 | W 14-37* | g/ha | >70 | 40 (S) | - | 40 (S) | 20-40 | - | 40 | - | 40 (S) | - | 20-40 | - |
| Sulfosulfuron 750 Wheat only | 2 | 11-15/22 | g/ha | $\begin{aligned} & 40- \\ & 100 \end{aligned}$ | - | - | - | 25 (S) | - | - | - | - | - | - | - |

Key: $\mathrm{IMI}=$ imidazoline tolerant varieties, $\mathrm{NR}=$ not required, $(\mathrm{S})=$ suppression only.
Adjuvant key: $M O=$ mineral oil, $M O S=$ mineral oil plus surfactant, $M S O=$ methylated seed oil, NIS $=$ non-ionic surfactant.
NIS products might indicate a specific concentration (i.e. NIS 1000); refer to adjuvant chart for example products.

## 

| - | 20 | - | - | - | - | - | - | - | - | $\begin{gathered} 15 \text { or } \\ 20 \end{gathered}$ | 15 | 20 | Rate, plant backs and crop safety are heavily influenced by soil pH ; refer label. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| - | - | 100 (S) | 100 | - | - | - | - | 75 (S) | 75 (S) | 100 | 75 | 75 | Do not apply to barley unless no other weed control option is viable; refer label. Adjuvant: NIS 1000 0.25\%. |
| - | - | - | $\begin{aligned} & 0.6- \\ & 0.75 \\ & (5) \end{aligned}$ | - | - | - | - | - | - | $\begin{gathered} 0.375- \\ 0.75 \end{gathered}$ | $\begin{gathered} 0.375- \\ 0.75 \end{gathered}$ | - | *Clearfield Plus wheat and CL barley only. Add MCPA LVE or clopyralid to enhance control. <br> Adjuvant: MSO 0.5\%. |
| - | - | 1.0 | 1.0 (S) | - | - | - | - | $\begin{gathered} 0.75- \\ 1.0 \end{gathered}$ | - | 1.0 | - | $\begin{aligned} & 0.75 \\ & (S) \\ & \end{aligned}$ | There are many considerations for effective control and crop safety; refer label. |
| - | - | - | - | - | - | - | - | 0.75 | - | - | - | $\begin{aligned} & 0.75 \\ & (S) \\ & \end{aligned}$ | Phytotoxicity considerations; refer label. Do not use on irrigated barley. |
| - | - | 100* | 100* | - | - | - | - | - | 100 (S) | 100* | 100 | 100 | *Requires mix partner; refer label. Adjuvant: always use NIS $10000.25 \%$. |
| - | - | 40 (S) | 40 | 40 (S) | - | 40 | 40 | - | 40 (S) | 20-40 | 40 | 40 | *Single gene IMI wheat only. Add MCPA LVE to enhance control. Adjuvant: MSO 0.5\%. |
| - | - | - | - | - | - | - | - | - | - | 20 | 20 | - | Adjuvant: MSO 1-2\%. Rate, plant backs and crop safety are heavily influenced by soil pH ; refer label. |


| Note: example trade names shown. Others may be available at different concentrations. See labels for details. |  |  |  |  |  |  |  |  |  | $\begin{aligned} & \text { 는 } \\ & \text { 흧 } \\ & \text { 든 } \end{aligned}$ |  | $\stackrel{n}{0}$ $\stackrel{\omega}{0}$ © | $\overline{0}$ en 인 0 0 0 | \# <br> \# <br> ¢ <br> ¢ <br> O <br> 0 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Affinity ${ }^{\text {® }}$ Force (carfentrazone 240) | 14 | >13 | mL/ha | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | - | - | 85 | $\begin{aligned} & 85- \\ & 100 \end{aligned}$ | 85 | - | - | $\begin{aligned} & 85- \\ & 100^{*} \end{aligned}$ | $\begin{aligned} & 85- \\ & 100 \end{aligned}$ | - |
| Agtryne ${ }^{\ominus}$ MA (terbutryn 275 <br> + MCPA 160) | $4+5$ | 13-15 | L/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | 1.0 | - | - | - | 1.0 | 1.0 | - | - | 1.0 | 1.5 |
| Aptitude ${ }^{\circledR}$ (metribuzin 375 + carfentrazone-ethyl 90) | $5+14$ | 13-25 | g/ha | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | - | 200 | - | - | 200 | - | - | - | - | - |
| Associate ${ }^{\oplus}$ (metsulfuronmethyl 600) | 2 | 13-37 | g/ha | >50 | 5 or 7 | - | - | - | - | 5 | 5 | - | - | 5 |
| Broadside ${ }^{\ominus}$ (bromoxynil 140 <br> + MCPA 280 + dicamba 40) | $6+4$ | 13-30* | L/ha | >50 | $\begin{gathered} 0.75- \\ 1.0 \end{gathered}$ | - | $\begin{gathered} 1.0- \\ 1.4 \end{gathered}$ | 1.4 | $\begin{gathered} 0.75- \\ 1.0 \end{gathered}$ | - | - | - | $\begin{aligned} & 1.0- \\ & 1.4 \end{aligned}$ | - |
| Broadstrike ${ }^{\oplus}$ (flumetsulam 800) | 2 | $\begin{gathered} \text { W 13-31, } \\ \text { B 21-31 } \end{gathered}$ | g/ha | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | 25 | 25 | - | 25 | 25* | 25 | - | - | - | 25 (S)* |
| Bromicide ${ }^{\ominus}$ (bromoxynil 200) | 6 | 12-31 | L/ha | $\begin{aligned} & 50- \\ & 200 \end{aligned}$ | - | - | $\begin{aligned} & 0.9- \\ & 1.2 \end{aligned}$ | - | - | - | - | - | - | $\begin{gathered} 0.9- \\ 1.2 \end{gathered}$ |
|  |  | 13-30 |  |  | 1.4 | 2.1 | 2.1 | - | 1.4 | 1.4 | - | - | 1.4 | - |
| Bromoxynil 250 + diflufenican 25 | $6+12$ | 12-29 | L/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | 0.75 | 1.0 (S) | $\begin{aligned} & 0.5- \\ & 1.0 \end{aligned}$ | $\begin{aligned} & 0.5- \\ & 0.75 \end{aligned}$ | $\begin{aligned} & 0.5- \\ & 1.0 \end{aligned}$ | $\begin{aligned} & 0.5- \\ & 0.75 \end{aligned}$ | - | - | $\begin{aligned} & 0.5- \\ & 0.75 \end{aligned}$ | $\begin{aligned} & 0.5- \\ & 0.75 \end{aligned}$ |
| $\begin{aligned} & \text { Bronco }^{\ominus} \text { MA-X (bromoxynil } \\ & 280+\text { MCPA 280) } \end{aligned}$ | 6+4 | 13-30 | L/ha | $\begin{aligned} & 50- \\ & 200 \end{aligned}$ | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | - | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | - | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | - | 0.54 | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | - |
| Buttress ${ }^{\circ}(2,4-$ DB 500) | 4 | 15-33 | L/ha | >80 | - | - | - | - | $\begin{gathered} 2.1- \\ 3.2 \end{gathered}$ | $\begin{gathered} 2.1- \\ 3.2 \end{gathered}$ | - | - | - | - |
| Condor ${ }^{\oplus}$ (MCPA $375+$ pyraflufen-ethyl 10) | $4+14$ | 12-29 | L/ha | $\begin{aligned} & 80- \\ & 150 \end{aligned}$ | - | $\begin{gathered} 0.8- \\ 1.6 \end{gathered}$ | - | $\begin{gathered} 0.8- \\ 1.6 \end{gathered}$ | $\begin{gathered} 0.8- \\ 1.6 \end{gathered}$ | - | - | - | - | - |
| Diuron ${ }^{900}$ | 5 | 12-22 | kg/ha | 40-70 | 0.5 | - | - | - | 0.5 | 0.5 | - | - | - | 0.5 |
| Ecopar® (pyraflufenethyl 20) | 14 | 12-29 | L/ha | $\begin{aligned} & 70- \\ & 150 \end{aligned}$ | - | $\begin{aligned} & 0.4- \\ & 0.8 \end{aligned}$ | - | $\begin{aligned} & 0.4- \\ & 0.8 \end{aligned}$ | $\begin{gathered} 0.4- \\ 0.8 \end{gathered}$ | - | 0.4* | - | - | 0.4* |
| $\begin{aligned} & \text { Enforcer } 242 \text { (picloram } 26 \\ & + \text { MCPA 420) } \end{aligned}$ | 4 | 22-30 | L/ha | >50 | - | - | 1.0 | - | - | - | - | - | - | - |
| $\begin{aligned} & \text { FallowBoss }{ }^{\circ} \text { Tordon }{ }^{\ominus}(2,4-\mathrm{D} \\ & \text { amine } 300+\text { picloram } 75+ \\ & \text { aminopyralid 7.5) } \end{aligned}$ | 4 | 14-31 | L/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | - | - | 0.3 | - | - | - | - | - | - | - |
| Flight ${ }^{\ominus}$ EC (picolinafen 35 + bromoxynil 210 + MCPA 350) | $\begin{gathered} 6+12 \\ +4 \end{gathered}$ | 13-28 | L/ha | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | - | - | - | 0.36 | $\begin{gathered} 0.36- \\ 0.72 \end{gathered}$ | $\begin{gathered} 0.36- \\ 0.72 \end{gathered}$ | - | - | 0.72 | $\begin{aligned} & 0.72 \\ & (\mathrm{~s}) \end{aligned}$ |
| Frequency® (topramezone 60 + cloquintocet-mexyl 60) | 27 | 12-32 | mL/ha | $\begin{aligned} & 80- \\ & 150 \end{aligned}$ | - | - | 200 | - | 200 | 200 | - | - | - | 200 |
| Grindstone ${ }^{\ominus}$ (aminopyralid 240) | 4 | 13-31 | mL/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | - | - | 20-32 | - | - | - | - | - | - | 16-32 |
|  |  |  |  |  | - | - | - | - | - | - | 20 | - | - | - |
| Hotshot ${ }^{\ominus}$ (aminopyralid 10 + fluroxypyr 140) Northern NSW only | 4 | 13-31 | L/ha | >80 | - | - | $\begin{aligned} & 0.5- \\ & 0.75 \end{aligned}$ | - | - | - | 0.75 | - | - | $\begin{gathered} 0.5- \\ 0.75^{*} \end{gathered}$ |
| Igran ${ }^{\ominus}$ Flowable (terbutryn 500) | 5 | 13-21 | L/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | $\begin{gathered} 0.55- \\ 0.85 \end{gathered}$ | - | 0.44* | - | $\begin{gathered} 0.55- \\ 0.85 \end{gathered}$ | $\begin{aligned} & 0.55- \\ & 0.85^{*} \end{aligned}$ | - | - | $\begin{gathered} 0.55- \\ 0.85 \end{gathered}$ | $\begin{aligned} & 0.44- \\ & 0.6^{*} \end{aligned}$ |


| ড |  |  |  |  | 䂟 |  |  |  | $\begin{aligned} & \stackrel{y}{0} \\ & \sum \\ & \sum \end{aligned}$ |  | Comments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| - | $\begin{aligned} & 85- \\ & 100 \end{aligned}$ | 85* | 85* | - | 85 | 85* | 85* | $\begin{aligned} & 65- \\ & 100 \end{aligned}$ | - | - | Add minimum of $330 \mathrm{~mL} /$ ha MCPA 750. *Add dicamba. |
| - | - | - | - | - | 1.0 | - | - | - | - | - |  |
| - | - | - | - | - | 200 | - | - | 200 | - | - | MCPA amine can be added for improved control. Do not use MCPA LVE or any other ester formulations; refer label. |
| 5 or 7 | - | - | 7 | - | 5 | - | 5 | - | 5 | - | Tank mix partners will broaden the weed spectrum; refer label. |
| $\begin{array}{\|c} 0.75- \\ 1.0 \end{array}$ | - | - | - | - | 1.0-1.4 | - | - | - | - | - | *Rate increases with crop growth; refer label. |
| - | - | - | - | - | - | - | 25 | 15/25* | - | - * | *Apply with a partner herbicide; refer label. Adjuvant: W MOS $0.5 \%$ or NIS $0.2 \%$, B NIS $0.2 \%$. |
| - | - | - | - | 0.9-1.2 | 0.9-1.2 | - | - | - | - | - | Add fluroxypyr; refer label. Add Frequency ${ }^{\text {® }}$ and MSO 1\%; refer label. |
| - | - | - | - | - | 2.1 | - | - | - | - | 1.4 | Add 2,4-D amine or MCPA LVE; refer label. |
| - | $\begin{aligned} & 0.5- \\ & 0.75 \\ & \text { (S) } \end{aligned}$ | - | $\begin{aligned} & 0.75 \\ & (S) \end{aligned}$ | - | $\begin{aligned} & 0.75 \\ & (S) \end{aligned}$ | - | $\begin{gathered} 0.5-1.0 \\ (S) \end{gathered}$ | - | - | - | *Add MCPA LVE. Can cause transient yellowing. |
| - | S | - | - | - | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | - | - | - | - | $\begin{aligned} & 1.0- \\ & 1.43 \\ & \hline \end{aligned}$ | Application rate increases with crop growth and weed size; refer label. Do not spray if temperature is $>20^{\circ} \mathrm{C}$. |
| 2.1-3.2 | - | - | - | - | 2.1-3.2 | - | - 21 | 2.1-3.2 | - | 2.1-3.2 |  |
| - | 0.8-1.6 | - | - | - | - | - | 0.8-1.6 0 | 0.8-1.6 | - | - | Adjuvant: NIS 0.1\%; some phytotoxicity might occur. |
| - | - | - | - | - | - | - | - | - | - | - |  |
| - | 0.4-0.8 | 0.4* | - | - | 0.4* | - | 0.4-0.8 | - | 0.4* | - | $400 \mathrm{~mL} / \mathrm{ha}$ is the maximum rate at Z12. Always add MCPA amine 750. <br> *Add $5 \mathrm{~g} /$ ha metsulfuron-methyl 600 . |
| - | - | - | - | - | - | - | - | - | - | - |  |
| 0.3 | - | - | - | 0.3 | - | - | - | - | - | - | Northern NSW only *Add 2,4-D amine. Adjuvant: NIS 1000 |
| - | - | - | - | - | $\begin{aligned} & 0.54- \\ & 0.72 \\ & \text { (S) } \end{aligned}$ | - | $\begin{aligned} & 0.72 \\ & (5) \end{aligned}$ | - | - | - | Rates increase with weed size and crop growth stage; refer label. |
| - | - | - | - | 200 | 200 | - | - | - | - | - | Must be used with bromoxynil or MCPA LVE. Adjuvant: MSO 1\%. |
| $\begin{gathered} 16 \mathrm{or} \\ 22 \end{gathered}$ | - | 16-32 | 32 | 32 | - | - | - | - | 16 | - | Northern NSW only. Must have a mix partner. Crop growth stage and rate are determined by mix partner; refer label. |
| - | - | 20 | 20 | - | - | - | 20 | - | - | - | Southern NSW only. Add fluroxypyr; refer label. |
| - | - | 0.75 | 0.75 | 0.75* | - | - | - | - | - | - * | *Add a mix partner; refer label. |
| - | - | 0.44* | 0.44* | - | $\begin{gathered} 0.55- \\ 0.85 \end{gathered}$ | - | - | - | 0.44* | $\begin{aligned} & 0.44- \\ & 0.6^{*} \end{aligned}$ | *Add Triasulfuron 750. <br> $\wedge$ Add MCPA or 2,4-D. |


| Note: example trade names shown. Others may be available at different concentrations. See labels for details. |  | 든 웅 운융 |  |  |  |  |  |  |  | $\begin{aligned} & \text { 는 } \\ & \text { 흧 } \\ & \text { 든 } \end{aligned}$ |  |  |  | \# \# O O O. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Kambå 750 (dicamba 750) | 4 | 15-30 | mL/ha | >50 | - | - | 185 | - | $\begin{gathered} 105^{*} \\ \text { or } \\ 185^{\wedge} \end{gathered}$ | $\begin{gathered} 105^{*} \\ \text { or } \\ 185^{\wedge} \end{gathered}$ | - | - | - | - |
| Kamba® M (MCPA $340+$ dicamba 80) | 4 | 21-30 | L/ha | >50 | - | - | 1.7 | - | $\begin{gathered} 1.0- \\ 1.7 \end{gathered}$ | $\begin{gathered} 1.0- \\ 1.7 \end{gathered}$ | - | - | - | - |
| Legacy ${ }^{\oplus}$ MA (diflufenican 25 <br> + MCPA 250) | $4+12$ | 13-30 | L/ha | >50 | - | - | - | 0.5 | $\begin{aligned} & 0.5- \\ & 1.0 \end{aligned}$ | $\begin{aligned} & 0.5- \\ & 1.0 \end{aligned}$ | - | - | 1.0 | 1.0 |
| Lontre ${ }^{\ominus}$ Advanced (clopyralid 600) | 4 | 13-30 | mL/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | - | - | - | - | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | - | 50 | - | - | - |
| MCPA amine 750 | 4 | 12-14 | L/ha | $\begin{aligned} & 30- \\ & 120 \end{aligned}$ | 0.33 | - | - | - | 0.33 | 0.33 | - | - | 0.33 | 0.33 |
|  |  | 15-37 |  |  | - | - | $\begin{aligned} & 0.97- \\ & 1.35 \end{aligned}$ | $\begin{gathered} 0.66- \\ 0.96 \end{gathered}$ | 1.45 | 0.66 | - | - | - | 1.45 |
| MCPA LVE 570 | 4 | 13-32 | L/ha | $\begin{aligned} & 30- \\ & 120 \end{aligned}$ | - | - | - | 1.3 | 1.49 | $\stackrel{0.44-}{1.4}$ | - | - | - | $\begin{gathered} 0.44- \\ 0.6^{*} \end{gathered}$ |
| Paradigm ${ }^{\circledR}$ (florasulam 200 + halauxifen 200) | $2+4$ | 13-37 | $\mathrm{g} / \mathrm{ha}$ | $\begin{aligned} & 80- \\ & 100 \end{aligned}$ | - | 25* | - | 25* | 25*(S) | - | 25* | - | - | 25 |
|  |  | $\begin{gathered} 31-43^{*} \\ \text { or } 31-49 \end{gathered}$ |  |  | - | - | - | - | - | - | $\underset{25^{*}}{25 \text { or }}$ | - | - | 25 |
| Pixxaro ${ }^{\circ}$ (fluroxypyr $250+$ halauxifen 16.25) | 4 | 13-39 | L/ha | >80 | - | 0.4 | $\begin{aligned} & 0.4- \\ & 0.6 \end{aligned}$ | - | - | - | 0.4 | - | - | $\begin{gathered} 0.2- \\ 0.3 \end{gathered}$ |
| Precept ${ }^{\ominus}$ (MCPA $125+$ pyrasulfotole 25) | 4+27 | $\begin{array}{\|l\|l\|} \text { W 13-31 } \\ \text { B 15-31 } \end{array}$ | L/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | $\begin{aligned} & 1.5- \\ & 2.0 \end{aligned}$ | $\begin{gathered} 1.5- \\ 2.0 \end{gathered}$ | - | $\begin{gathered} 1.0- \\ 2.0 \end{gathered}$ | 1.0* | - | 1.0* | - | $\begin{aligned} & 1.0- \\ & 2.0 \end{aligned}$ | $\begin{gathered} 1.5- \\ 2.0 \end{gathered}$ |
| Quadrant ${ }^{\circ}$ (MCPA ester $250+$ bromoxynil 240 + diflufenican 20 + picolinafen 10) | $\begin{gathered} 4+6+ \\ 12 \end{gathered}$ | 13-28 | L/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | $\begin{gathered} 0.8- \\ 1.0 \end{gathered}$ | $\begin{gathered} 0.8- \\ 1.0 \end{gathered}$ | $\begin{aligned} & 1.0- \\ & 1.2 \end{aligned}$ | 0.6 | $\begin{gathered} 0.6- \\ 1.2 \end{gathered}$ | $\begin{gathered} 0.6- \\ 1.2 \end{gathered}$ | - | $\begin{gathered} 0.8- \\ 1.0 \end{gathered}$ | $\begin{gathered} 0.8- \\ 1.0 \end{gathered}$ | $\begin{aligned} & 0.8- \\ & 1.0 \end{aligned}$ |
| Sencor ${ }^{\circledR}$ (metribuzin 480) Barley only | 5 | B 13-8 weeks | L/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | - | - | - | - | - | - | - | - | - | - |
| Starane ${ }^{\oplus}$ Advanced (fluroxypyr 333) | 4 | 13-39 | L/ha | >50 | - | 0.3 | $\begin{gathered} 0.3(5) \\ \text { or * or } \\ 0.45 \end{gathered}$ | - | - | - | - | 0.6 | - | $\begin{gathered} 0.9 \text { or } \\ 0.3^{*} \end{gathered}$ |
| Talinor ${ }^{\circ}$ (bromoxynil 175 + bicyclopyrone 37.5 + cloquintocet-mexyl 9.4) | $6+27$ | 12-32 | L/ha | $\begin{aligned} & 75- \\ & 150 \end{aligned}$ | - | $\begin{aligned} & 0.75- \\ & 1.0 \text { (S) } \end{aligned}$ | $\begin{gathered} 0.5- \\ 1.0 \end{gathered}$ | $\begin{aligned} & 0.5- \\ & 1.0 \end{aligned}$ | $\begin{gathered} 0.5- \\ 1.0 \end{gathered}$ | $\begin{aligned} & 0.5- \\ & 1.0 \end{aligned}$ | $\begin{aligned} & 0.5- \\ & 0.75 \end{aligned}$ | - | $\begin{aligned} & 0.5- \\ & 0.75 \end{aligned}$ | $\begin{aligned} & 0.5- \\ & 0.75 \\ & 0.7 \end{aligned}$ |
| Trezac ${ }^{\circledR}$ (aminopyralid 25 + halauxifen 30 + cloquintocet-mexyl 30) | 4 | 13-31 | mL/ha | >80 | - | 200* | 200* | - | - | - | 200 | - | - | 200 |
| Triasulfuron 750 | 2 | 13-22 | g/ha | $\begin{aligned} & 30- \\ & 100 \end{aligned}$ | - | - | 10^ | - | - | - | - | - | - | $\begin{aligned} & 10- \\ & 13 \wedge \end{aligned}$ |
| Triathlon ${ }^{\ominus}$ (MCPA 250 + bromoxynil 150 + diflufenican 25) | $\begin{gathered} 4+6+ \\ 12 \end{gathered}$ | 13-30 | L/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | - | - | - | 0.5 | 0.5-1 | - | - | - | 1.0 | 1.0 |
| Velocity ${ }^{\text {® }}$ (pyrasulfotole 37.5 <br> + bromoxynil 210) | $27+6$ | 12-31 | L/ha | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | $\begin{gathered} 0.6- \\ 1.0 \end{gathered}$ | $\begin{gathered} 0.67- \\ 1.0 \end{gathered}$ | $\begin{aligned} & 0.5- \\ & 1.0 \end{aligned}$ | $\begin{aligned} & 0.5- \\ & 1.0 \end{aligned}$ | $\begin{aligned} & 0.5- \\ & 1.0 \end{aligned}$ | - | $\begin{gathered} 0.5- \\ 1.0(\mathrm{~S}) \end{gathered}$ | - | $\begin{aligned} & 0.5- \\ & 1.0 \end{aligned}$ | $\begin{aligned} & 0.5- \\ & 1.0 \end{aligned}$ |


| 蒿 |  |  |  |  | $\begin{aligned} & \text { 즐 } \\ & \text { n} \\ & \end{aligned}$ |  |  |  | $\frac{\ddots}{\bar{\omega}}$ |  | Comments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{gathered} 185 \text { or } \\ 105^{*} \end{gathered}$ | - | - | - | - | - | - | - | - | - | - * | *Add MCPA amine. <br> $\wedge$ Add MCPA or 2,4-D amine. |
| 1.0-1.7 | - | - | - | - | - | - | - | - | - | - |  |
| 1.0 (S) | 1.0 (S) | - | - | - | 0.75 | - | 1.0 (S) | - | - | - | Application rate increases with crop growth and weed size; refer label. Add MCPA for radish control. |
| - | - | 50 | 40-50 | - | - | - | 50 | - | 50 | - | Rates and timing are determined by weed size and mix partner. There are many mix partners; refer label. |
| - | 0.33 | - | - | - | - | - | 0.46 | - | - | - | Use the low rate and add Diuron ${ }^{\ominus} 900$ for control of small weeds. |
| - | - | - | - | - | 0.93 | - | - | - | - | - | Application rate increases with crop growth and weed size; refer label. |
| - | - | - | - | - | $\begin{gathered} 0.44- \\ 0.6^{*} \text { or } \\ 0.965 \end{gathered}$ | - | - | - | - | - | Add mix partner; refer label. <br> Application rate increases with crop growth and weed size; refer label. |
| - | - | 25* | 25* | 25* | 25 | 25* | 25* | 25 | 25* | 25 | *Add MCPA LVE. Rate of mix partner changes with crop growth stage; refer label. <br> Adjuvant; refer label. |
| - | - | - | - | - | 25 | - | - | 25 | - | 25 | *Add 0.8-1.2 L/ha 2,4-D amine 720. <br> Adjuvant: $\mathrm{W}, \mathrm{T}=$ MOS $0.5 \%, \mathrm{~B}=$ NIS $0.2 \%$. |
| - | - | - | - | 0.3 | 0.3 | - | - | 0.3 | 0.3 | 0.2-0.3 | Adjuvant: MOS 0.5\%. |
| - | - | 1.0* | $\begin{aligned} & 1.0-2.0 \\ & \text { or } 1.0^{*} \end{aligned}$ | - | 1.0-2.0 | 1.0* | 1.0-2.0 | - | $\begin{gathered} 2.0 \text { or } \\ 1.0^{*} \end{gathered}$ | - | *Add clopyralid for control. <br> Adjuvant: AMS, MSO 0.5-1\%, MOS 0.5-0.75\%. |
| 1.0 (S) | - | - | - | - | 0.8-1.2 | - | 1.0 (S) | 1.0 (S) | - | 0.8-1.0 | Rate is dictated by weed size; refer label. Transient yellowing might occur. Temperature $>20^{\circ} \mathrm{C}$ can increase effects. |
| - | - | - | - | - | - | - | - | - | - | - |  |
| - | - | - | - | - | - | - | 0.9 | - | - | - * | *Add metsulfuron-methyl (not durum). Adjuvant: weed specific; refer label. |
| - | $\begin{gathered} 0.75- \\ 1.0 \end{gathered}$ | $\begin{aligned} & 0.5- \\ & 0.75 \end{aligned}$ | $\begin{aligned} & 0.5- \\ & 0.7- \end{aligned}$ | $\begin{aligned} & 0.75- \\ & 1.0(\mathrm{~S}) \end{aligned}$ | $\begin{aligned} & 0.5- \\ & 0.75 \end{aligned}$ | $\begin{aligned} & 0.5- \\ & 0.75 \end{aligned}$ | $\begin{aligned} & 0.5- \\ & 0.75 \end{aligned}$ | - | $\begin{aligned} & 0.5- \\ & 0.75 \end{aligned}$ | - | Do not mix with UAN or AMS fertilisers. Adjuvant: MSO 0.5\%. |
| - | - | 200 | 200 | 200 | 200 | - | - | 200* | 200 | 200 | *Add fluroxypyr. <br> ^Add fluroxypyr + MCPA LVE. <br> Adjuvant: MOS 0.5\%. |
| - | - | 10^ | $10^{\wedge}$ | - | - | - | - | - | $10^{\wedge}$ | $\begin{aligned} & 10- \\ & 13 \wedge \end{aligned}$ | *Add MO 1\%. <br> $\wedge$ Add terbutryn. |
| 1.0 (S) | 1.0 (S) | - | - | - | 0.75 | - | 1.0 (S) | 1.0 (S) | - | - | Transient yellowing might occur. |
| - | - | 0.5-1.0 | $\begin{aligned} & 0.5(5) \\ & 0.67- \\ & 1.0 \end{aligned}$ | - | 0.5-1.0 | $\begin{gathered} 0.5-1.0 \\ (\mathrm{~S}) \end{gathered}$ | 0.5-1.0 | - | $\begin{gathered} 0.5(\mathrm{~S}) \\ 0.67- \\ 1.0 \end{gathered}$ | - | Add LVE MCPA for control; refer label. |

## Key: $\mathrm{IMI}=$ imidazoline tolerant varieties, $\mathrm{NR}=$ not required, $(\mathrm{S})=$ suppression only

Adjuvant key: $M O=$ mineral oil, $M O S=$ mineral oil plus surfactant, $M S O=$ methylated seed oil, $\mathrm{NIS}=$ non-ionic surfactant
NIS products might indicate a specific concentration (i.e. NIS 1000); refer to adjuvant chart for example products.

Table 18. Herbicides for broadleaf weed control in wheat and barley - early post-emergence - page 3 of 4 .

| Note: example trade names shown. Others may be available at different concentrations. See labels for details. |  |  |  |  |  |  |  |  |  |  |  |  |  | ¢ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Affinity ${ }^{\ominus}$ Force (carfentrazone 240) | 14 | >13 | mL/ha | 50-150 | - | $\begin{aligned} & 85- \\ & 100 \end{aligned}$ | - | $\begin{aligned} & 65- \\ & 100 \end{aligned}$ | - | 85 | 85 | 85 | - | - |
| Agtryne ${ }^{\ominus}$ MA (terbutryn 275 <br> + MCPA 160) | $4+5$ | 13-15 | L/ha | 50-100 | - | 1.0-1.5 | - | 1.0 | - | - | 1.0 | - | - | - |
| Aptitude ${ }^{\ominus}$ (metribuzin 375 + carfentrazone-ethyl 90) | $5+14$ | 13-25 | g/ha | 50-150 | - | 200 | - | - | - | 200 | - | 200 | - | - |
| Associate ${ }^{\oplus}$ (metsulfuronmethyl 600) | 2 | 13-37 | g/ha | >50 | - | 5 | - | 5 or 7 | - | - | 5 | 5 | 7 (S) | 5 |
| Broadside ${ }^{\ominus}$ (bromoxynil 140 <br> + MCPA 280 + dicamba 40) | $6+4$ | 13-30* | L/ha | >50 | - | $\begin{gathered} 0.75- \\ 1.0 \end{gathered}$ | - | - | - | - | - | - | - | - |
| Broadstrike ${ }^{\ominus}$ <br> (flumetsulam 800) | 2 | $\begin{gathered} \text { W 13-31, } \\ \text { B 21-31 } \end{gathered}$ | g/ha | 50-150 | - | 25 | - | $\begin{aligned} & 25(S) \\ & \text { or } 25^{*} \end{aligned}$ | $\begin{aligned} & 25(\mathrm{~S}) \\ & \text { or } 25^{*} \end{aligned}$ | - | - | 25 | - | - |
| Bromicide ${ }^{\bullet}$ (bromoxynil 200) | 6 | 12-31 | L/ha | 50-200 | - | - | - | - | - | - | - | $\begin{aligned} & 0.9-1 \\ & 1.2 \end{aligned}$ | - | - |
|  |  | 13-30 |  |  | 1.4 | 1.4 | - | $\begin{gathered} 1.4- \\ 2.1 \end{gathered}$ | 1.4 | - | 1.4 | $\begin{aligned} & 1.4- \\ & 2.1 \end{aligned}$ | - | 2.1 |
| Bromoxynil 250 + diflufenican 25 | $6+12$ | 12-29 | L/ha | 50-100 | 1.0 (S) | 0.5-1.0 | - | $\begin{aligned} & 0.5- \\ & 0.75 \end{aligned}$ | 1.1 | 1.0 (S) | $\begin{aligned} & 0.5- \\ & 0.75 \end{aligned}$ | 1.0 | 1.0 (S) | 1.0 (S) |
| Bronco ${ }^{\oplus}$ MA-X (bromoxynil $280 \text { + MCPA 280) }$ | $6+4$ | 13-30 | L/ha | 50-200 | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | - | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | - | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | $\begin{aligned} & 1.0- \\ & 1.0 \end{aligned}$ | - | - |
| Buttress ${ }^{\text {( } 2,4-D B 500) ~}$ | 4 | 15-33 | L/ha | >80 | - | 2.1-3.2 | - | $\begin{gathered} 2.1- \\ 3.2 \end{gathered}$ | - | $\begin{gathered} 2.1- \\ 3.2 \end{gathered}$ | - | $\begin{gathered} 2.1- \\ 3.2 \end{gathered}$ | - | - |
| Condor ${ }^{\ominus}$ (MCPA 375 + pyraflufen-ethyl 10) | $4+14$ | 12-29 | L/ha | 80-150 | - | 0.8-1.6 | - | - | - | $\begin{gathered} 0.8- \\ 1.6 \end{gathered}$ | - | - | - | - |
| Diuron 900 | 5 | 12-22 | kg/ha | 40-70 | - | 0.5 | - | - | - | - | - | - | - | - |
| Ecopar® (pyraflufenethyl 20) | 14 | 12-29 | L/ha | 70-150 | - | 0.4-0.8 | - | 0.4* | - | $\begin{gathered} 0.4- \\ 0.8 \end{gathered}$ | - | - | - | 0.4* |
| $\begin{aligned} & \text { Enforcer® } 242 \text { (picloram } 26 \\ & + \text { MCPA 420) } \end{aligned}$ | 4 | 22-30 | L/ha | >50 | - | 1.0 | 1.0 (S) | - | - | - | - | - | 1.0 | - |
| FallowBoss ${ }^{\ominus}$ Tordon ${ }^{\circledR}$ (2,4-D amine 300 + picloram 75 + aminopyralid 7.5) | 4 | 14-31 | L/ha | 50-100 | 0.3* | 0.3* | 0.3 | - | - | - | - | - | - | - |
| Flight ${ }^{\ominus}$ EC (picolinafen 35 + bromoxynil 210 + MCPA 350) | $6+12$ | 13-28 | L/ha | 50-150 | - | $\begin{gathered} 0.36- \\ 0.72 \end{gathered}$ | - | - | - | $\begin{aligned} & 0.3- \\ & 0.72 \end{aligned}$ | - | $\begin{gathered} 0.36- \\ 0.72 \end{gathered}$ | - | - |
| Frequency ${ }^{\circ}$ (topramezone $60+$ cloquintocet-mexyl 60) | 27 | 12-32 | mL/ha | 80-150 | - | - | - | - | - | - | - | 200 | - | - |
| Grindstone ${ }^{\bullet}$ (aminopyralid 240) | 4 | 13-31 | mL/ha | 50-100 | - | 16 | 22 | - | - | 16-32 | - | - | - | - |
|  |  |  |  |  | - | - | - | - | - | - | - | - | - | - |
| Hotshot ${ }^{\ominus}$ (aminopyralid 10 + fluroxypyr 140) Northern NSW only | 4 | 13-31 | L/ha | >80 | - | - | - | - | - | 0.75 | - | - | - | - |
| Igran ${ }^{\circledR}$ Flowable (terbutryn 500) | 5 | 13-21 | L/ha | 50-100 | - | $\begin{gathered} 0.33- \\ 0.44^{*} \\ \text { or } \\ 0.55- \\ 0.85 \wedge \end{gathered}$ | - | $\begin{gathered} 0.55- \\ 0.85 \end{gathered}$ | - | - | - | 0.44* | - | - |


| $\begin{aligned} & \text { 음 } \\ & \text { ì } \\ & \stackrel{0}{0} \end{aligned}$ |  |  |  |  |  |  |  | $\begin{aligned} & \stackrel{5}{y} \\ & > \end{aligned}$ |  | $\begin{aligned} & \text { O} \\ & \frac{2}{3} \\ & \frac{1}{3} \\ & \frac{0}{3} \end{aligned}$ |  | Comments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| - | 85 | 85 | - | - | - | - | $\begin{aligned} & 85- \\ & 100 \end{aligned}$ | 85* | 100 | 85 | 85 | Add minimum of $330 \mathrm{~mL} / \mathrm{ha}$ MCPA 750. *Add dicamba. |
| - | - | 1.5 | 1.5 | - | - | - | 1.5 | - | - | 1.0 | 1.5 |  |
| - | - | - | - | - | - | - | 200 | - | 200 | 200 | - | MCPA amine can be added for improved control. Do not use MCPA LVE or any other ester formulations; refer label. |
| 5 | 5 | 5 or 7 | - | - | - | - | - | - | - | 5 | 5 or 7 | Tank mix partners will broaden the weed spectrum; refer label. |
| - | - | $\begin{array}{\|c} 0.75- \\ 1.0 \end{array}$ | - | - | - | - | - | - | $\begin{gathered} 0.75- \\ 1.0 \end{gathered}$ | - | $\begin{gathered} 0.75- \\ 1.0 \end{gathered}$ | *Rate increases with crop growth; refer label. |
| - | - | 25* | - | - | - | - | - | - | $\begin{aligned} & 15^{*} \text { or } \\ & 25(\mathrm{~S}) \end{aligned}$ | 15-25 | - | *Apply with a partner herbicide; refer label. Adjuvant: W MOS $0.5 \%$ or NIS $0.2 \%$, B NIS 0.2\%. |
| - | 0.9-1.2 | - | - | - | - | - | - | 0.9-1.2 | 0.9-1.2 | 0.9-1.2 | 0.9-1.2 | Add fluroxypyr; refer label. Add Frequency ${ }^{\ominus}$ and MSO $1 \%$; refer label. |
| - | - | 1.4 | 1.4 | 1.4 | - | 1.4-2.1 | - | - | 1.4 | 1.4 | 1.4 | Add 2,4-D amine or MCPA LVE; refer label. |
| - | 1.0 (S) | $\begin{aligned} & 0.5- \\ & 0.75 \end{aligned}$ | 1.00 | - | - | 1.00 | 1.0 (S) | 1.0 (S) | $\begin{aligned} & 0.5-1.0 \\ & \text { or 0.5* } \end{aligned}$ | $\begin{aligned} & 0.5- \\ & 0.75 \end{aligned}$ | 1.00 | *Add MCPA LVE. Can cause transient yellowing. |
| - | 1.0-1.5 | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | $\begin{aligned} & 1.0- \\ & 1.4 \end{aligned}$ | $\begin{aligned} & \text { 1.0- } \\ & 1.4 \end{aligned}$ | - | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | - | - | $\begin{aligned} & 1.0- \\ & 1.4 \end{aligned}$ | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | $\begin{aligned} & \text { 1.0- } \\ & 1.4 \end{aligned}$ | Application rate increases with crop growth and weed size; refer label. Do not spray if temperature is $>20^{\circ} \mathrm{C}$. |
| - | 2.1-3.2 | 2.1-3.2 | 2.1-3.2 | 2.1-3.2 | 2.1-3.2 | 2.1-3.2 | - | - | - | 2.1-3.2 | 2.1-3.2 |  |
| - | - | - | - | - | - | - | - | - | 0.8-1.6 | 0.8-1.6 | - | Adjuvant: NIS $0.1 \%$; some phytotoxicity might occur. |
| - | - | 0.5 | 0.5 | - | - | - | - | - | 0.5 | 0.5 | - |  |
| 0.4* | 0.4* | 0.4* | - | - | - | - | - | - | 0.3-0.8 | 0.4-0.8 | 0.4* | $400 \mathrm{~mL} / \mathrm{ha}$ is the maximum rate at Z 12 . Always add MCPA amine 750. *Add $5 \mathrm{~g} /$ ha metsulfuron-methyl 600 . |
| - | 1.0 | 1.0 | 1.0 | - | - | 1.0 | - | - | 1.0 | 1.0 | 1.0 (5) |  |
| - | 0.3 | 0.3 | 0.3 | - | - | 0.3* | - | - | 0.3* | 0.3* | 0.3* (S) | Northern NSW only. *Add 2,4-D amine. Adjuvant: NIS 1000 |
| - | $\begin{aligned} & 0.72 \\ & \text { (S) } \end{aligned}$ | $\begin{aligned} & 0.72 \\ & (\mathrm{~S}) \end{aligned}$ | 0.72 | - | - | - | 0.72 | - | $\begin{gathered} 0.36- \\ 0.72 \end{gathered}$ | $\begin{gathered} 0.36- \\ 0.72 \end{gathered}$ | - | Rates increase with weed size and crop growth stage; refer label. |
| - | 200 | - | - | - | - | - | - | 200 | 200 | 200 | 200 | Must be used with bromoxynil or MCPA LVE. Adjuvant: MSO 1\%. |
| - | 20-32 | 16-32 | 16 | - | - | 16-32 | - | 32 | - | 16 | 16-32 | Northern NSW only. Must have a mix partner. Crop growth stage and rate are determined by mix partner; refer label. |
| - | - | - | - | - | - | - | - | 20 | - | - | - | Southern NSW only. Add fluroxypyr; refer label. |
| - | $\begin{aligned} & 0.5- \\ & 0.75^{*} \end{aligned}$ | $\begin{gathered} 0.5- \\ 0.75^{*} \end{gathered}$ | - | - | - | $\begin{aligned} & 0.5- \\ & 0.75^{*} \end{aligned}$ | - | 0.75 | - | - | $\begin{aligned} & 0.5- \\ & 0.75^{*} \end{aligned}$ | *Add a mix partner; refer label. |
| - | $\begin{aligned} & 0.5- \\ & 0.75^{*} \end{aligned}$ | $\begin{aligned} & 0.55- \\ & 0.85^{*} \end{aligned}$ | - | - | - | - | $\begin{gathered} 0.55- \\ 0.85 \end{gathered}$ | 0.6* | $\begin{gathered} 0.44- \\ 0.6^{*} \end{gathered}$ | $\begin{aligned} & 0.33- \\ & 0.44^{*} \\ & \text { or } \\ & 0.55- \\ & 0.85 \wedge \end{aligned}$ | - | *Add Triasulfuron 750. <br> $\wedge$ Add MCPA or 2,4-D. |

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Table 18. Herbicides for broadleaf weed control in wheat and barley - early post-emergence - page 4 of 4 .

| Note: example trade names shown. Others may be available at different concentrations. See labels for details. |  |  |  |  |  |  |  |  |  |  |  |  |  | ご |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Kambå 750 (dicamba 750 ) | 4 | 15-30 | mL/ha | >50 | 185* | $\begin{gathered} 105^{*} \\ o \\ 185 \wedge \end{gathered}$ | 185 | - | - | - | - | - | - | 1.0 |
| Kamba ${ }^{\oplus}$ M (MCPA $340+$ dicamba 80) | 4 | 21-30 | L/ha | >50 | 1.7 | 1.0-1.7 | 1.7 | - | - | - | - | - | - | $\begin{aligned} & 1.0- \\ & 1.7 \end{aligned}$ |
| Legacy ${ }^{\ominus}$ MA (diflufenican 25 <br> + MCPA 250) | $4+12$ | 13-30 | L/ha | >50 | - | 0.5-1.0 | - | 1.0 (S) | 1.0 (S) | $\begin{gathered} 0.5- \\ 1.0 \end{gathered}$ | 1.0 (S) | $\begin{aligned} & 0.5- \\ & 1.0 \end{aligned}$ | 1.0 (S) | - |
| Lontrel ${ }^{\ominus}$ Advanced (clopyralid 600) | 4 | 13-30 | mL/ha | 50-100 | - | - | - | - | - | 50-75 | - | - | 250 | - |
| MCPA amine 750 | 4 | 12-14 | L/ha | 30-120 | - | $\begin{gathered} 0.33- \\ 0.46 \end{gathered}$ | - | - | - | - | - | - | - | - |
|  |  | 15-37 |  |  | 1.35 | 0.66 | - | $\begin{gathered} 0.66- \\ 0.96 \end{gathered}$ | - | - | $\begin{gathered} 0.46- \\ 0.96 \end{gathered}$ | - | $\begin{aligned} & 0.96- \\ & 1.35 \end{aligned}$ | - |
| MCPA LVE 570 | 4 | 13-32 | L/ha | 30-120 | - | $\begin{gathered} 0.49- \\ 0.88 \end{gathered}$ | - | 1.49 | - | - | - | $\begin{gathered} 0.44- \\ 0.6^{*} \end{gathered}$ | $\begin{gathered} 0.965- \\ 1.4 \end{gathered}$ | - |
| Paradigm ${ }^{\ominus}$ (florasulam 200 <br> + halauxifen 200) | $2+4$ | 13-37 | $\mathrm{g} / \mathrm{ha}$ | 80-100 | - | 25* | - | - | - | 25* | - | 25* | - | - |
|  |  | $\begin{gathered} 31-43^{*} \\ \text { or 31-49 } \end{gathered}$ |  |  | - | - | - | - | - | - | - | - | - | - |
| Pixxaro ${ }^{\text {® }}$ (fluroxypyr 250 + halauxifen 16.25) | 4 | 13-39 | L/ha | >80 | - | - | - | - | - | 0.4 | - | - | - | - |
| Precept ${ }^{\ominus}$ (MCPA $125+$ pyrasulfotole 25) | $4+27$ | $\begin{gathered} \text { W 13-31, } \\ \text { B 15-31 } \end{gathered}$ | L/ha | 50-100 | - | 1.0-2.0 | - | $\begin{aligned} & 1.0- \\ & 2.0 \end{aligned}$ | - | $\begin{aligned} & 1.0- \\ & 2.0 \end{aligned}$ | - | - | - | - |
| Quadrant ${ }^{\ominus}$ (MCPA ester 250 + bromoxynil 240 + diflufenican 20 + picolinafen 10) | $\begin{gathered} 4+6+ \\ 12 \end{gathered}$ | 13-28 | L/ha | 50-100 | $\begin{gathered} 0.8- \\ 1.0 \end{gathered}$ | 0.6-1.2 | - | $\begin{gathered} 0.8- \\ 1.2 \end{gathered}$ | 1.2 | $\begin{gathered} 0.6- \\ 1.2 \end{gathered}$ | $\begin{gathered} 0.8- \\ 1.2 \end{gathered}$ | $\begin{gathered} 0.6- \\ 1.2 \end{gathered}$ | 1.0 (S) | $\begin{gathered} 0.8- \\ 1.0 \end{gathered}$ |
| Sencor ${ }^{\ominus}$ (metribuzin 480) Barley only | 5 | B 13-8 weeks | L/ha | 50-100 | - | - | - | - | - | - | - | - | - | - |
| Starane ${ }^{\oplus}$ Advanced (fluroxypyr 333) | 4 | 13-39 | L/ha | >50 | - | $\begin{aligned} & 0.3- \\ & 0.9^{*} \end{aligned}$ | - | - | - | 0.3 | - | $\begin{aligned} & 0.3- \\ & 0.9^{*} \end{aligned}$ | - | - |
| Talinor (bromoxynil 175 <br> + bicyclopyrone 37.5 + <br> cloquintocet-mexyl 9.4) | $6+27$ | 12-32 | L/ha | 75-150 | - | 0.5-1.0 | - | $\begin{aligned} & 0.5- \\ & 0.75 \end{aligned}$ | - | $\begin{aligned} & 0.5- \\ & 0.75 \end{aligned}$ | - | $\begin{aligned} & 0.5- \\ & 0.75 \end{aligned}$ | - | - |
| Trezac ${ }^{\ominus}$ (aminopyralid $25+$ halauxifen $30+$ cloquintocet-mexyl 30) | 4 | 13-31 | mL/ha | >80 | - | - | - | - | - | 200* | - | - | - | - |
| Triasulfuron 750 | 2 | 13-22 | g/ha | 30-100 | - | $\begin{aligned} & 6.5- \\ & 0^{\wedge} \end{aligned}$ | - | - | - | - | - | $10^{\wedge}$ | - | - |
| Triathlon ${ }^{\circledR}$ (MCPA 250 + bromoxynil 150 + diflufenican 25) | $\begin{gathered} 4+6+ \\ 12 \end{gathered}$ | 13-30 | L/ha | 50-100 | - | 0.5-1 | - | 1.0 (S) | 1.0 (S) | $\begin{aligned} & 0.5- \\ & 1.0 \end{aligned}$ | 1.0 (S) | $\begin{gathered} 0.5- \\ 1.0 \end{gathered}$ | 1.0 (S) | - |
| Velocity ${ }^{\text {( }}$ (pyrasulfotole 37.5 <br> + bromoxynil 210) | $27+6$ | 12-31 | L/ha | 50-150 | - | 0.5-1.0 | - | $\begin{aligned} & 0.5- \\ & 1.0 \end{aligned}$ | - | $\begin{aligned} & 0.5- \\ & 1.0 \end{aligned}$ | - | $\begin{aligned} & 0.5- \\ & 1.0 \end{aligned}$ | - | - |


| \% |  | ® $\stackrel{\text { En }}{0}$ त्च in |  |  |  |  |  | $\stackrel{ড}{ \pm}$ |  | $\begin{aligned} & \text { 을 } \\ & \frac{3}{2} \\ & \frac{0}{3} \\ & \hline \end{aligned}$ |  | Comments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| - | - | $\begin{aligned} & 185 \text { or } \\ & 105^{*} \end{aligned}$ | 185^ | - | - | - | - | $\begin{aligned} & 185 \text { or } \\ & 105^{*} \end{aligned}$ | 105* | $\begin{gathered} 185 \wedge \\ \text { or105* } \end{gathered}$ | $\begin{gathered} 185 \text { or } \\ 105^{*} \end{gathered}$ | *Add MCPA amine. <br> $\wedge$ Add MCPA or 2,4-D amine. |
| - | - | 1.0-1.7 | 1.7 | - | - | 1.7 | - | 1.0-1.7 | 1.0-1.7 | 1.0-1.7 | 1.0-1.7 |  |
| - | 1.0 (S) | 1.0 (S) | 1.0 | - | - | 1.0 (S) | 1.0 | 1.0 (S) | 0.5-1.0 | 0.5-1.0 | $\begin{aligned} & 0.75 \\ & (5) \end{aligned}$ | Application rate increases with crop growth and weed size; refer label. Add MCPA for radish control. |
| - | 50 | - | 25 | 25 | 25 | 25 | - | 40-50 | - | - | - | Rates and timing are determined by weed size and mix partner. There are many mix partners; refer label. |
| - | - | 0.33 | - | - | - | - | - | - | $\begin{gathered} 0.33- \\ 0.46 \end{gathered}$ | $\begin{gathered} 0.33- \\ 0.46 \end{gathered}$ | - | Use the low rate and add Diuron ${ }^{\circledR} 900$ for control of small weeds. |
| - | - | - | $\begin{aligned} & 0.66- \\ & 1.35 \end{aligned}$ | $\begin{aligned} & 0.66- \\ & 1.35 \end{aligned}$ | $\begin{aligned} & 0.96- \\ & 1.35 \end{aligned}$ | $\begin{gathered} 0.66- \\ 1.35 \end{gathered}$ | - | - | 0.66 | 0.66 | - | Application rate increases with crop growth and weed size; refer label. |
| - | $\begin{gathered} 0.44- \\ 0.6^{*} \end{gathered}$ | - | $\begin{gathered} 0.965- \\ 1.7 \end{gathered}$ | 1.8 | $\begin{gathered} 1.31- \\ 1.84 \end{gathered}$ | $\begin{aligned} & 0.74- \\ & 0.96 \end{aligned}$ | - | - | $\begin{gathered} 0.44- \\ 0.6^{*} \text { or } \\ 0.965- \\ 1.4 \end{gathered}$ | $\begin{aligned} & 0.44- \\ & 0.6^{*} \text { or } \\ & 0.615- \\ & 0.965 \end{aligned}$ | $\begin{aligned} & 0.44- \\ & 0.6^{*} \end{aligned}$ | Add mix partner; refer label. <br> Application rate increases with crop growth and weed size; refer label. |
| - | 25* | 25* | - | - | - | - | 25 (S) | 25* | 25* | 25* | - | *Add MCPA LVE. Rate of mix partner changes with crop growth stage; refer label. Adjuvant; refer label. |
| - | - | - | - | - | - | - | 25 (S) | - | $\begin{gathered} 25 \text { or } \\ 25^{*} \end{gathered}$ | - | - | *Add 0.8-1.2 L/ha 2,4-D amine 720. <br> Adjuvant: $\mathrm{W}, \mathrm{T}=$ MOS $0.5 \%, \mathrm{~B}=$ NIS 0.2\%. |
| - | 0.4 | - | - | - | - | - | - | - | - | - | - | Adjuvant: MOS 0.5\%. |
| - | 1.0-2.0 | $\begin{gathered} 1.5-2.0 \\ (\mathrm{~S}) \end{gathered}$ | - | - | - | - | - | 1.0* | 1.0-2.0 | 1.0-2.0 | 1.0-2.0 | *Add clopyralid for control. Adjuvant: AMS, MSO 0.5-1\%, MOS 0.5-0.75\%. |
| - | 1.2 | 0.8-1.2 | 0.8-1.0 | 0.8-1.0 | - | 1.2 | 0.8-1.0 | 1.0 (S) | 0.6-1.2 | 0.6-1.2 | 0.8-1.2 | Rate is dictated by weed size; refer label. Transient yellowing might occur. Temperatures $>20^{\circ} \mathrm{C}$ can increase effects. |
| - | - | - | - | - | - | - | 0.15 | - | - | - | - |  |
| - | 0.6 | $\begin{gathered} 0.9 \text { or } \\ 0.3^{*} \end{gathered}$ | - | - | - | - | - | - | $\begin{aligned} & 0.3- \\ & 0.9^{*} \end{aligned}$ | $\begin{aligned} & 0.3- \\ & 0.9^{*} \end{aligned}$ | 0.3* | *Add metsulfuron-methyl (not durum). Adjuvant: weed specific; refer label. |
| - | $\begin{aligned} & 0.5- \\ & 0.75 \end{aligned}$ | 0.5-1.0 | $\stackrel{0.75-}{1.0}$ | - | - | - | - | $\begin{aligned} & 0.5- \\ & 0.75 \end{aligned}$ | 0.5-1.2 | 0.5-1.0 | 0.5-1.0 | Do not mix with UAN or AMS fertilisers. Adjuvant: MSO 0.5\%. |
| - | 200^ | 200^ | - | - | - | 200^ | - | 200 | - | - | - | *Add fluroxypyr. <br> ^Add fluroxypyr + MCPA LVE. <br> Adjuvant: MOS 0.5\%. |
| - | - | - | - | - | - | - | - | - | $\begin{gathered} 10-15^{*} \\ \text { or } \end{gathered}$ | $6.5 \wedge$ | - * | *Add MO 1\%. <br> $\wedge$ Add terbutryn. |
| - | 1.0 (S) | 1.0 (S) | 1.0 | - | - | 1.0 (S) | 1.0 | 1.0 (S) | 0.5-1.0 | 0.5-1.0 | $\begin{aligned} & 0.75 \\ & (\mathrm{~S}) \end{aligned}$ | Transient yellowing might occur. |
| - | 0.5-1.0 | 0.5-1.0 | $\stackrel{c}{0.67-}$ | - | - | - | - | $\begin{gathered} 0.5-1.0 \\ (S) \end{gathered}$ | 0.5-1.0 | 0.5-1.0 | $\begin{aligned} & 0.5(\mathrm{~S}) \\ & 0.67- \\ & 10 \end{aligned}$ | Add LVE MCPA for control; refer label. |

Key: $I M I=$ imidazoline tolerant varieties, $\mathrm{NR}=$ not required, $(\mathrm{S})=$ suppression only
Adjuvant key: $\mathrm{MO}=$ mineral oil, MOS = mineral oil plus surfactant, $\mathrm{MSO}=$ methylated seed oil, NIS = non-ionic surfactant.
NIS products might indicate a specific concentration (i.e. NIS 1000); refer to adjuvant chart for example products.
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\square$
$\qquad$
$\qquad$
$\qquad$

## Spectrum. Compatibility. Flexibility.

## Paradigm

Arylex ${ }^{\circ}$ active

## HERBICIDE

Paradigm ${ }^{\circledR}$ Arylex ${ }^{\circledR}$ active Herbicide delivers a low dose, wide spectrum solution for the control of broadleaf weeds.
Widely compatible with the ability to safely go across wheat, barley, oats and triticale. Paradigm fits easily into your spray programme.
Increase your productivity with less downtime due to tank clean out, changing the spray mix or worrying about compatibilities.
Get some precious time back and make life easier.
For more information call 1800700096 or scan the QR code

Table 19. Herbicides for weed control for wheat and barley - late post-emergence - page 1 of 2.

| Note: example trade names shown. Others may be available at different concentrations. See labels for details. |  |  |  |  |  |  |  |  |  | $\begin{aligned} & \stackrel{n}{0} \\ & \frac{0}{3} \\ & \frac{0}{3} \end{aligned}$ |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Grass control products. High levels of herbicide resistance to Groups 1 and 2 selective herbicides are common in most grass weeds. Do not rely on these products as your only management tool. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Axial ${ }^{\oplus}$ Xtra (pinoxaden $50+$ cloquintocet-mexyl 12.5) | 1 | 12-49 | L/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | 0.4-0.5 | $\begin{array}{r} 0.5-0.6 \\ (\mathrm{~S}) \end{array}$ | - | - | - | 0.3-0.4 |  |  |  |  |  |
| Topik ${ }^{\ominus}$ (clodinafop-propargyl 240 + cloquintocet-mexyl 60) Wheat only | 1 | 12-37 | $\mathrm{mL} / \mathrm{ha}$ | $\begin{aligned} & 50- \\ & 110 \end{aligned}$ | $\begin{aligned} & 85- \\ & 160 \end{aligned}$ | $\begin{aligned} & 160- \\ & 210 \end{aligned}$ | - | - | - | $\begin{aligned} & 65- \\ & 125 \end{aligned}$ |  |  |  |  |  |
| Grass and broadleaf control products |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Sentry ${ }^{\ominus}$ (imazapic $525+$ imazapyr 175) Wheat only* | 2 | 14-37 | g/ha | >70 | 40 | 40 (S) | 40 | 40 | 40 (S) | 40 | 40 | 40 | 40 | 40 | 40 |
| Broadleaf control products |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2,4-D amine $700 \mathrm{~g} / \mathrm{L}$ | 4 | 31-43 | L/ha | $\begin{aligned} & 50- \\ & 250 \\ & \hline \end{aligned}$ |  |  |  |  |  |  | 0.98 | - | 0.98 | - | $\begin{gathered} 0.98- \\ 1.5 \end{gathered}$ |
| 2,4-D LV ester 680 | 4 | 31-37 | L/ha | $\begin{aligned} & 30- \\ & 100 \end{aligned}$ |  |  |  |  |  |  | - | - | - | - | $\begin{gathered} 0.53- \\ 0.8 \end{gathered}$ |
| Affinity ${ }^{\ominus}$ Force (carfentrazone 240) | 14 | >13 | mL/ha | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ |  |  |  |  |  |  | - | - | 85 | $\begin{aligned} & 85- \\ & 100 \end{aligned}$ | 85 |
| Broadstrike ${ }^{\ominus}$ (flumetsulam 800) | 2 | 61-83 | g/ha | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ |  |  |  |  |  |  | 25 | 25 | - | 25 | 25* |
| Lontre ${ }^{\ominus}$ Advanced (clopyralid 600) | 4 | 13-45 | L/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ |  |  |  |  |  |  | - | - | - | - | - |
| MCPA amine 750 | 4 | 15-37 | L/ha | $\begin{aligned} & 30- \\ & 120 \end{aligned}$ |  |  |  |  |  |  | - | - | $\begin{gathered} 0.97- \\ 1.35 \end{gathered}$ | $\begin{gathered} 0.66- \\ 0.96 \end{gathered}$ | 1.45 |
| MCPA LVE 570 | 4 | 15-39 | L/ha | $\begin{aligned} & 30- \\ & 120 \end{aligned}$ |  |  |  |  |  |  | - | - | - | 1.3 | 1.49 |
| Paradigm ${ }^{\ominus}$ (florasulam $200+$ halauxifen 200) | $2+4$ | 13-37 | $\mathrm{g} / \mathrm{ha}$ | $\begin{aligned} & 80- \\ & 100 \end{aligned}$ |  |  |  |  |  |  | - | 25* | - | 25* | 25*(S) |
|  |  | $\begin{gathered} 31-43^{*} \\ \text { or } \\ 31-49 \end{gathered}$ |  |  |  |  |  |  |  |  | - | - | - | - | - |
| Pixxaro ${ }^{\circ}$ (fluroxypyr 250 + halauxifen 6.25) | 4 | 13-39 | L/ha | >80 |  |  |  |  |  |  | - | 0.4 | 0.4-0.6 | - | - |

Key: $\mathrm{IMI}=$ imidazoline tolerant varieties, $\mathrm{NR}=$ not required, $(S)=$ suppression only.
Adjuvant key: $M O=$ mineral oil, $M O S=$ mineral oil plus surfactant, $M S O=$ methylated seed oil, NIS $=$ non-ionic surfactant.
NIS products might indicate a specific concentration (i.e. NIS 1000); refer to adjuvant chart for example products.

Ensure you have an IWM plan in place. It is recommended to get your weeds tested for resistance - consult your advisor for localised information.


| $\begin{aligned} & 0.5- \\ & 1.25 \end{aligned}$ | - | - | - | - | $\begin{array}{\|c} 0.98- \\ 1.25 \\ \hline \end{array}$ | 1.25 | - | - | 1.5 | 0.5-1.5 | - | $\begin{gathered} 0.715- \\ 1.5 \end{gathered}$ | - |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0.41 | - | - | 0.8 | 0.8 | - | 0.8 | - | - | - | 0.8 | - | $\begin{gathered} 0.41- \\ 0.8 \end{gathered}$ | - |  |
| - | - | $\begin{aligned} & 85- \\ & 100^{*} \end{aligned}$ | $\begin{aligned} & 85- \\ & 100 \end{aligned}$ | - | - | $\begin{aligned} & 85- \\ & 100 \end{aligned}$ | 85* | 85* | - | 85 | 85* | 85* | $\begin{aligned} & 65- \\ & 100 \end{aligned}$ | Add minimum of $330 \mathrm{~mL} / \mathrm{ha}$ MCPA 750. <br> *Add dicamba. |
| 25 | - | - | - | 25 (S)* | - | - | - | - | - | - | - | 25 | 15/25* | *Apply with a partner herbicide; refer label. Adjuvant: W MOS 0.5\% or NIS $0.2 \%$, B NIS $0.2 \%$. |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | Add MCPA LVE. |
| 0.66 | - | - | - | 1.45 | - | - | - | - | - | 0.93 | - | - | - | Application rate increases with crop growth and weed size; refer label. |
| $\begin{gathered} 0.44- \\ 1.4 \end{gathered}$ | - | - | - | $\begin{gathered} 0.44- \\ 0.6^{*} \end{gathered}$ | - | - | - | - | - | $\begin{aligned} & 0.44- \\ & 0.6^{*} \text { or } \\ & 0.965 \end{aligned}$ | - | - | - | *Add Frequency ${ }^{\text { }}$. <br> Application rate increases with crop growth and weed size; refer label. |
| - | 25* | - | - | 25 | - | - | 25* | 25* | 25* | 25 | 25* | 25* | 25 | *Add MCPA LVE. Rate of mix partner changes with crop growth stage; refer label. |
| - | $\begin{gathered} 25 \text { or } \\ 25^{*} \end{gathered}$ | - | - | 25 | - | - | - | - | - | 25 | - | - | 25 | *Add 0.8-1.2 L/ha 2,4-D amine 720. Adjuvant: W, T = MOS 0.5\%, B = NIS 0.2\%. |
| - | 0.4 | - | - | 0.2-0.3 | - | - | - | - | 0.3 | 0.3 | - | - | 0.3 | Adjuvant: MOS 0.5\%. |

Table 19. Herbicides for weed control for wheat and barley - late post-emergence - page 2 of 2.

| Note: example trade names shown. Others may be available at different concentrations. See labels for details. |  | 든 흉 웅훙 |  |  | $\frac{\tilde{y}}{\frac{y}{0}}$ |  | $\begin{aligned} & \text { 힘 } \\ & \sum_{i}^{c} \\ & \dot{\Sigma} \end{aligned}$ |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Grass and broadleaf control products |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Sentry ${ }^{\text {® }}$ (imazapic 525 + imazapyr 175) Wheat only* | 2 | 14-37 | g/ha | >70 | 40 (S) | - | 40 (S) | 20-40 | - | 40 | - | 40 (S) | - | 20-40 |
| Broadleaf control products |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2,4-D amine $700 \mathrm{~g} / \mathrm{L}$ | 4 | 31-43 | L/ha | $\begin{aligned} & 50- \\ & 250 \end{aligned}$ | - | 1.25 | 0.8-0.9 | $\begin{aligned} & 0.5- \\ & 1.25 \end{aligned}$ | $\begin{gathered} 0.98- \\ 1.5 \end{gathered}$ | - | - | - | 0.98 | $\begin{gathered} 0.98- \\ 1.5 \end{gathered}$ |
| 2,4-D LV ester 680 | 4 | 31-37 | L/ha | $\begin{aligned} & 30- \\ & 100 \end{aligned}$ | - | 0.8 | 0.8 | $\begin{gathered} 0.41- \\ 0.8 \end{gathered}$ | 0.8 | 0.8 | - | - | 0.8 | 0.8 |
| Affinity ${ }^{\text {F }}$ Force (carfentrazone 240) | 14 | >13 | $\begin{gathered} \mathrm{mL} / \\ \mathrm{ha} \end{gathered}$ | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | - | - | - | $\begin{aligned} & 85- \\ & 100 \end{aligned}$ | - | $\begin{aligned} & 65- \\ & 100 \end{aligned}$ | - | 85 | 85 | 85 |
| Broadstrike ${ }^{\bullet}$ <br> (flumetsulam 800) | 2 | 61-83 | g/ha | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | - | - | - | 25 | - | $\begin{aligned} & 25(\mathrm{~S}) \\ & \text { or 25* } \end{aligned}$ | $\begin{aligned} & 25(\mathrm{~S}) \\ & \text { or } 25^{*} \end{aligned}$ | - | - | 25 |
| Lontre ${ }^{\ominus}$ Advanced (clopyralid 600) | 4 | 13-45 | L/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | - | - | - | - | - | - | - | 75 | - | - |
| MCPA amine 750 | 4 | 15-37 | L/ha | $\begin{aligned} & 30- \\ & 120 \end{aligned}$ | - | - | 1.35 | 0.66 | - | $\begin{gathered} 0.66- \\ 0.96 \end{gathered}$ | - | - | $\begin{gathered} 0.46- \\ 0.96 \end{gathered}$ | - |
| MCPA LVE 570 | 4 | 15-39 | L/ha | $\begin{aligned} & 30- \\ & 120 \end{aligned}$ | - | - | - | $\begin{aligned} & 0.49- \\ & 0.88 \end{aligned}$ | - | 1.49 | - | - | - | $\begin{gathered} 0.44- \\ 0.6^{*} \end{gathered}$ |
| Paradigm ${ }^{\ominus}$ (florasulam $200+$ halauxifen 200) | $2+4$ | 13-37 | g/ha | $\begin{aligned} & 80- \\ & 100 \end{aligned}$ | 25* | 25 | - | 25* | - | - | - | 25* | - | 25* |
|  |  | $\begin{gathered} \hline 31-43^{*} \\ \text { or } \\ 31-49 \\ \hline \end{gathered}$ |  |  | - | 25 | - | - | - | - | - | - | - | - |
| Pixxaro® (fluroxypyr $250+$ halauxifen 6.25) | 4 | 13-39 | L/ha | >80 | 0.3 | 0.2-0.3 | - | - | - | - | - | 0.4 | - | - |

Key: $I M I=$ imidazoline tolerant varieties, $\mathrm{NR}=$ not required, $(\mathrm{S})=$ suppression only.
Adjuvant key: $\mathrm{MO}=$ mineral oil, $\mathrm{MOS}=$ mineral oil plus surfactant, $\mathrm{MSO}=$ methylated seed oil, $\mathrm{NIS}=$ non-ionic surfactant.
NIS products might indicate a specific concentration (i.e. NIS 1000); refer to adjuvant chart for example products.


| $\begin{array}{\|l\|} \hline 0.98- \\ 1.5 \end{array}$ | $\begin{gathered} 1.25- \\ 1.5 \end{gathered}$ | $\begin{gathered} 1.25-5 \\ \hline \end{gathered}$ | 1.25 | 0.5-1.5 | $5 \begin{gathered} 0.715- \\ 1.5 \end{gathered}$ | $\begin{aligned} & 0.5- \\ & 1.45 \end{aligned}$ | 0.5-1.5 | - | $\begin{gathered} 0.98- \\ 1.25 \end{gathered}$ | $\begin{gathered} 0.715- \\ 1.5 \end{gathered}$ | $\begin{aligned} & 0.5- \\ & 1.25 \end{aligned}$ | 1.25 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0.8 | - | - | - | $\begin{gathered} 0.41- \\ 0.8 \end{gathered}$ | 0.8 | 0.8 | 0.8 | - | - | $\begin{gathered} 0.41- \\ 0.8 \end{gathered}$ | $\begin{gathered} 0.41- \\ 0.8 \end{gathered}$ | 0.8 |  |
| - | - | 85 | 85 | - | - | - | - | $\begin{aligned} & 85- \\ & 100 \end{aligned}$ | 85* | 100 | 85 | 85 | Add minimum of $330 \mathrm{~mL} / \mathrm{ha}$ MCPA 750. <br> *Add dicamba. |
| - | - | - | 25* | - | - | - | - | - | - | $\begin{aligned} & 15^{*} \text { or } \\ & 25 \text { (S) } \end{aligned}$ | 15-25 | - | *Apply with a partner herbicide; refer label. Adjuvant: W MOS $0.5 \%$ or NIS 0.2\%, B NIS 0.2\%. |
| - | - | - | - | 25 | 25 | 25 | 25 | - | 40 | - | - | - | Add MCPA LVE. |
| $\begin{gathered} 0.96- \\ 1.35 \end{gathered}$ | - | - | - | $\begin{gathered} 0.66- \\ 1.35 \end{gathered}$ | $\begin{gathered} 0.66- \\ 1.35 \end{gathered}$ | $\begin{aligned} & 0.96- \\ & 1.35 \end{aligned}$ | $\begin{aligned} & 0.66- \\ & 1.35 \end{aligned}$ | - | - | 0.66 | 0.66 | - | Application rate increases with crop growth and weed size; refer label. |
| $\begin{gathered} 0.965- \\ 1.4 \end{gathered}$ | - | $\begin{gathered} 0.44- \\ 0.6^{*} \end{gathered}$ | - | $\begin{gathered} 0.965- \\ 1.7 \end{gathered}$ | 1.8 | - | $\begin{gathered} 0.74- \\ 0.96 \end{gathered}$ | - | - | $\begin{gathered} 0.44- \\ 0.6^{*} \text { or } \\ 0.965- \\ 1.4 \end{gathered}$ | $\begin{aligned} & 0.44- \\ & 0.6^{*} \text { or } \\ & 0.615- \\ & 0.965 \end{aligned}$ | $\begin{aligned} & 0.44- \\ & 0.66^{*} \end{aligned}$ | *Add Frequency ${ }^{\text {a }}$. <br> Application rate increases with crop growth and weed size; refer label. |
| - | - | 25* | 25* | - | - | - | - | 25 (S) | 25* | 25* | 25* | - | *Add MCPA LVE. Rate of mix partner changes with crop growth stage; refer label. |
| - | - | - | - | - | - | - | - | 25 (S) | - | $\begin{gathered} 25 \text { or } \\ 25^{*} \end{gathered}$ | - | - | *Add 0.8-1.2 L/ha 2,4-D amine 720. Adjuvant: W, T = MOS 0.5\%, $\mathrm{B}=$ NIS $0.2 \%$. |
| - | - | 0.4 | - | - | - | - | - | - | - | - | - | - | Adjuvant: MOS 0.5\%. |

Table 20．Herbicides for weed control for oats－early post－emergence－page 1 of 4 ．

| Note：example trade names shown．Others may be available at different concentrations．See labels for details． |  |  |  |  |  | $\begin{aligned} & \text { 弒 } \\ & \stackrel{\rightharpoonup}{n} \\ & \stackrel{y}{4} \end{aligned}$ | $\begin{aligned} & \text { z } \\ & \text { 䔍 } \\ & \text { 華 } \\ & \hline \end{aligned}$ |  |  |  | $\begin{aligned} & \text { 늘 } \\ & \text { 늗 } \\ & \text { 드 } \end{aligned}$ |  | n ¢ \％ U |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Grass and broadleaf control products |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Chlorsulfuron 750 | 2 | 12－23 | g／ha | ＞30 | 15－25 | 15 | － | 20 | － | － | 15 | － | － | 20 |

Broadleaf control products

| Affinity ${ }^{\ominus}$ Force （carfentrazone 240） | 14 | ＞13 | mL／ha | 50－150 | － | － | 85 | 85－100 | 85 | － | － | $\begin{aligned} & 85- \\ & 100^{*} \end{aligned}$ | 85－100 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Agtryne ${ }^{\oplus}$ MA（terbutryn 275 + MCPA 160) | $4+5$ | 13－15 | L／ha | 50－100 | 1.0 | － | － | － | 1.0 | 1.0 | － | － | 1.0 |
| Aptitude ${ }^{\ominus}$（metribuzin 375 ＋ carfentrazone－ethyl 90） | $\begin{aligned} & 5+ \\ & 14 \end{aligned}$ | 13－25 | g／ha | 50－150 | － | 200 | － | － | 200 | － | － | － | － |
| Broadside ${ }^{\oplus}$（bromoxynil 140 <br> ＋MCPA 280 ＋dicamba 40） | $6+4$ | 13－30＊ | L／ha | ＞50 | $\begin{gathered} 0.75- \\ 1.0 \end{gathered}$ | － | 1．0－1．4 | 1.4 | $\begin{gathered} 0.75- \\ 1.0 \end{gathered}$ | － | － | － | 1．0－1．4 |
| Broadstrike ${ }^{\oplus}$ （flumetsulam 800） | 2 | 21－31 | g／ha | 50－150 | 25 | 25 | － | 25 | 25＊ | 25 | － | － | － |
| Bromicide ${ }^{\text {® }}$（bromoxynil 200） | 6 | 13－30 | L／ha | 50－200 | 1.4 | 2.1 | 2.1 | － | 1.4 | 1.4 | － | － | 1.4 |
| $\begin{aligned} & \text { Bronco }{ }^{\ominus} \text { MA-X (bromoxynil } \\ & 280+\text { MCPA 280) } \end{aligned}$ | $6+4$ | 13－30 | L／ha | 50－200 | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | － | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | － | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | － | 0.54 | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ |
| Buttress ${ }^{\circ}$（2，4－DB 500） | 4 | 15－33 | L／ha | ＞80 | － | － | － | － | 2．1－3．2 | 2．1－3．2 | － | － | － |
| Condor ${ }^{\ominus}$（MCPA $375+$ pyraflufen－ethyl 10） | 4 | $4+14$ | L／ha | 12－29 | － | 0．8－1．6 | － | 0．8－1．6 | 0．8－1．6 | － | － | － | － |
| Diuron 900 | 5 | 12－22 | kg／ha | 40－70 | 0.5 | － | － | － | 0.5 | 0.5 | － | － | － |
| Ecopar®（pyraflufen－ethyl 20 ） | 14 | 12－29 | L／ha | 70－150 | － | 0．4－0．8 | － | 0．4－0．8 | 0．4－0．8 | － | － | － | － |
| Enforcer 242 （picloram 26 ＋ MCPA 420） | 4 | 22－30 | L／ha | ＞50 | － | － | 1.0 | － | － | － | － | － | － |
| $\begin{aligned} & \text { FallowBoss }{ }^{\circ} \text { Tordon }{ }^{\ominus}(2,4-\mathrm{D} \\ & \text { amine } 300+\text { picloram } 75+ \\ & \text { aminopyralid } 7.5) \end{aligned}$ | 4 | 14－31 | L／ha | 50－100 | － | － | 0.3 | － | － | － | － | － | － |
| Flight ${ }^{\ominus}$ EC（picolinafen $35+$ bromoxynil 210 ＋MCPA 350） | $\begin{array}{\|c\|} \hline 6+ \\ 12 \\ +4 \\ \hline \end{array}$ | 13－28 | L／ha | 50－150 | － | － | － | 0.36 | $\begin{gathered} 0.36- \\ 0.72 \end{gathered}$ | $\begin{gathered} 0.36- \\ 0.72 \end{gathered}$ | － | － | 0.72 |
| Grindstone ${ }^{\circledR}$ （aminopyralid 240） | 4 | 13－31 | mL／ha | 50－100 | － | － | 20－32 | － | － | － | 32 | － | － |
|  |  |  |  |  | － | － | － | － | － | － | － | － | － |
| Hotshot ${ }^{\oplus}$（aminopyralid 10 ＋fluroxypyr 140）Northern NSW only | 4 | 13－31 | L／ha | ＞80 | － | － | $\begin{aligned} & 0.5- \\ & 0.75 \end{aligned}$ | － | － | － | 0.75 | － | － |

## 

| $\begin{gathered} 15 \text { or } \\ 20 \end{gathered}$ | － | － | － | － | － | 20 | － | － | － | － | － | 20 | Rate，plant backs and crop safety are heavily influenced by soil pH ；refer label． |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| － | － | 85－100 | 85＊ | 85＊ | － | 85 | 85＊ | 85＊ | 65－100 | － | － | － | Add minimum of $330 \mathrm{~mL} / \mathrm{ha}$ MCPA 750. ＊Add dicamba． |
| 1.5 | － | － | － | － | － | 1.0 | － | － | － | － | － | － | Not suitable for some varieties；refer label |
| － | － | － | － | － | － | 200 | － | － | 200 | － | － | － | MCPA amine can be added for improved control．Do not use MCPA LVE or any other ester formulations； refer label． |
| － | $\begin{gathered} 0.75- \\ 1.0 \end{gathered}$ | － | － | － | － | 1．0－1．4 | － | － | － | － | － | － | ＊Rate increases with crop growth；refer label． |
| 25 （S）＊ | － | － | － | － | － | － | － | 25 | 15／25＊ | － | － | － | ＊Apply with a partner herbicide；refer label．Adjuvant：NIS 0．2\％．Transient yellowing can occur． |
| － | － | － | － | － | － | 2.1 | － | － | － | － | 1.4 | 1.4 | Add 2，4－D amine or MCPA LVE；refer label． |
| － | － | － | － | － | － | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | － | － | － | － | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | Application rate increases with crop growth and weed size；refer label．Do not spray if temperature is $>20^{\circ} \mathrm{C}$ ． |
| － | 2．1－3．2 | － | － | － | － | 2．1－3．2 | － | － | 2．1－3．2 | － | 2．1－3．2 | － |  |
| － | － | 0．8－1．6 | － | － | － | － | － | 0．8－1．6 | 0．8－1．6 | － | － | － | Adjuvant：NIS $0.1 \%$ ；some phytotoxicity might occur． |
| 0.5 | － | － | － | － | － | － | － | － | － | － | － | － |  |
| － | － | 0．4－0．8 | － | － | － | － | － | 0．4－0．8 | － | － | － | － | $400 \mathrm{~mL} / \mathrm{ha}$ is the maximum rate at Z 12. Add MCPA amine 750. |
| － | － | － | － | － | － | － | － | － | － | － | － | － |  |
| － | 0.3 | － | － | － | 0.3 | － | － | － | － | － | － | 0．3＊ | Northern NSW only． ＊Add 2，4－D amine． Adjuvant：NIS 1000. |
| 0.72 （S） | － | － | － | － | － | $\begin{aligned} & 0.54- \\ & 0.72 \\ & \text { (S) } \end{aligned}$ | － | 0.72 （S） | － | － | － | － | Rates increase with weed size and crop growth stage；refer label． |
| － | － | － | 32 | 32 | 32 | － | － | － | － | － | － | － | Northern NSW only．Must have a mix partner．Crop growth stage and rate are determined by mix partner；refer label． |
| － | － | － | 20 | 20 | － | － | － | 20 | － | － | － | － | Southern NSW only．Add fluroxypyr； refer label． |
| － | － | － | 0.75 | 0.75 | 0．75＊ | － | － | － | － | － | － | － | ＊Add a mix partner；refer label． Add MCPA LVE；refer label． |

Table 20. Herbicides for weed control for oats - early post-emergence - page 2 of 4.

| Note: example trade names shown. Others may be available at different concentrations. See labels for details. |  |  |  |  |  | $\begin{aligned} & \text { 弒 } \\ & \stackrel{\rightharpoonup}{n} \\ & \stackrel{y}{4} \end{aligned}$ |  |  |  |  | $\begin{aligned} & \text { 늧 } \\ & \text { 흔 } \\ & \text { 든 } \end{aligned}$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Igran ${ }^{\ominus}$ Flowable (terbutryn 500) | 5 | 13-21 | L/ha | 50-100 |  | $\begin{gathered} 0.55- \\ 0.85 \end{gathered}$ | - | 0.44* | - | $\begin{gathered} 0.55- \\ 0.85 \end{gathered}$ | $\begin{aligned} & 0.55- \\ & 0.85^{*} \end{aligned}$ | - | - | $\begin{gathered} 0.55- \\ 0.85 \end{gathered}$ |
| Kambå 750 (dicamba 750) | 4 | 15-30 | mL/ha | >50 |  | - | - | 185 | - | $\begin{gathered} 105 * \text { or } \\ 185 \wedge \end{gathered}$ | $\begin{gathered} 105^{*} \text { or } \\ 185 \wedge \end{gathered}$ | - | - | - |
| Kamba ${ }^{\oplus}$ M (MCPA $340+$ dicamba 80) | 4 | 21-30 | L/ha | >50 |  | - | - | 1.7 | - | 1.0-1.7 | 1.0-1.7 | - | - | - |
| Legacy ${ }^{\oplus}$ MA (diflufenican 25 <br> + MCPA 250) | $\begin{aligned} & 4+ \\ & 12 \end{aligned}$ | 13-30 | L/ha | >50 |  | - | - | - | 0.5 | 0.5-1.0 | 0.5-1.0 | - | - | 1.0 |
| Lontrel ${ }^{\ominus}$ Advanced (clopyralid 600) | 4 | 13-30 | mL/ha | 50-100 |  | - | - | - | - | 50-150 | - | 50 | - | - |
| MCPA amine 750 | 4 | 12-39 | L/ha | 30-120 |  | - | - | $\begin{gathered} 0.97- \\ 1.35 \end{gathered}$ | $\begin{aligned} & 0.6- \\ & 0.96 \end{aligned}$ | 1.45 | 0.6 | - | - | - |
| MCPA LVE 570 | 4 | 13-37 | L/ha | 30-120 |  | - | - | - | 1.3 | - | $\begin{gathered} 0.44- \\ 1.4 \end{gathered}$ | - | - | - |
| Paradigm ${ }^{\ominus}$ (florasulam $200+$ halauxifen 200) | $2+4$ | 13-39 | g/ha | 80-100 |  | - | 25* | - | 25* | 25*(S) | - | 25* | - | - |
| Pixxaro® (fluroxypyr 250 + halauxifen 16.25) | 4 | 13-39 | L/ha | >80 |  | - | 0.4 | 0.4-0.6 | - | - | - | 0.4 | - | - |
| Precept ${ }^{\ominus}$ (MCPA 125 + pyrasulfotole 25) | $\begin{aligned} & 4+ \\ & 27 \end{aligned}$ | 13-31 | L/ha | 50-100 |  | 1.5-2.0 | 1.5-2.0 | - | 1.0-2.0 | 1.0* | - | 1.0* | - | 1.0-2.0 |
| Quadrant ${ }^{\oplus}$ (MCPA ester $250+$ bromoxynil 240 + diflufenican $20+$ picolinafen 10) | $\begin{aligned} & 4+6 \\ & +12 \end{aligned}$ | 13-28 | L/ha | 50-100 |  | 0.8-1.0 | 0.8-1.0 | 1.0-1.2 | 0.6 | 0.6-1.2 | 0.6-1.2 | - | 0.8-1.0 | 0.8-1.0 |
| Starane ${ }^{\oplus}$ Advanced (fluroxypyr 333) | 4 | 13-39 | L/ha | >50 |  | - | 0.3 | $\begin{gathered} 0.3(5) \\ \text { or }{ }^{*} \text { or } \\ 0.45 \end{gathered}$ | - | - | - | - | 0.6 | - |
| Trezac ${ }^{\ominus}$ (aminopyralid 25 + halauxifen 30 + cloquintocet-mexyl 30) | 4 | 13-31 | L/ha | >80 |  | - | 200* | 200* | - | - | - | 200 | - | - |
| Triasulfuron 750 | 2 | 13-22 | g/ha | 30-100 |  | - | - | 10^ | - | - | - | - | - | - |
| Triathlon ${ }^{\circledR}$ (MCPA 250 + bromoxynil 150 + diflufenican 25 ) | $\begin{aligned} & 4+ \\ & +12 \end{aligned}$ | 13-30 | L/ha | 50-100 |  | - | - | - | 0.5 | 0.5-1.0 | - | - | 0.5-1.0 | 1.0 |


|  | ড |  |  |  |  |  |  |  |  | $\frac{\check{y}}{\stackrel{y}{0}}$ |  |  | Comments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{gathered} 0.44- \\ 0.6^{*} \end{gathered}$ | - | - | 0.44* | 0.44* | - | $\begin{aligned} & 0.55- \\ & 0.85 \end{aligned}$ | - | - | - | 0.44* | $\begin{aligned} & 0.44- \\ & 0.6^{*} \end{aligned}$ | - | Not suitable for some varieties; refer label. <br> *Add Triasulfuron 750. <br> $\wedge$ Add MCPA or 2,4-D amine. |
| - | $\begin{aligned} & 185 \text { or } \\ & 105^{*} \end{aligned}$ | - | - | - | - | - | - | - | - | - | - | 185* | *Add MCPA amine. <br> $\wedge$ Add MCPA or 2,4-D amine. |
| - | 1.0-1.7 | - | - | - | - | - | - | - | - | - | - | 1.7 |  |
| 1.0 | 1.0 (S) | 1.0 (S) | - | - | - | 0.75 | - | 1.0 (S) | - | - | - | - | Application rate increases with crop growth and weed size; refer label. Add MCPA for radish control. |
| - | - | - | 50 | 40-50 | - | - | - | 50 | - | 50 | - | - | Rates and timing are determined by weed size and mix partner. There are many mix partners; refer label. |
| 1.45 | - | - | - | - | - | 0.93 | - | - | - | - | - | 1.35 | Application rate increases with crop growth and weed size; refer label. |
| - | - | - | - | - | - | 0.965 | - | - | - | - | - | - | Application rate increases with crop growth and weed size; refer label. |
| 26 | - | - | 25* | 25* | 25* | 25 | 25* | 25* | 25 | 25* | 26 | - * | *Add MCPA LVE. Rate of mix partner changes with crop growth stage; refer label. Adjuvant; refer label. |
| 0.2-0.3 | - | - | - | - | 0.3 | 0.3 | - | - | 0.3 | 0.3 | 0.2-0.3 | - | Adjuvant: MOS 0.5\%. |
| 1.5-2.0 | - | - | 1.0* | $\begin{aligned} & 1.0-2.0 \\ & \text { or } 1.0^{*} \end{aligned}$ | - | 1.0-2.0 | 1.0* | 1.0-2.0 | - | $\begin{array}{\|c} 2.0 \text { or } \\ 1.0^{*} \end{array}$ | - | - | *Add clopyralid for control. Adjuvant: AMS, MSO 0.5-1\%, MOS 0.5-0.75\%. |
| 0.8-1.0 | 1.0 (S) | - | - | - | - | 0.8-1.2 | - | 1.0 (S) | 1.0 (S) | - | 0.8-1.0 | 0.8-1.0 | Rate is dictated by weed size; refer label. Transient yellowing might occur. Temperature $>20^{\circ} \mathrm{C}$ can increase effects. |
| 0.9 | - | - | - | - | - | - | - | 0.9 | - | - | - | - | Adjuvant: weed specific; refer label. *Add Logran. |
| 200 | - | - | 200 | 200 | 200 | 200 | - | - | 200* | 200 | 200 | - | *Add fluroxypyr. <br> ^Add fluroxypyr + MCPA LVE. <br> Adjuvant: MOS 0.5\%. |
| 10-13^ | - | - | 10^ | $10^{\wedge}$ | - | - | - | - | - | 10^ | 10-13^ | - | *Add MO $1 \%$. <br> $\wedge$ Add terbutryn. |
| 1.0 | 1.0 (S) | 1.0 (S) | - | - | - | 0.75 | - | 1.0 (S) | 1.0 (S) | - | - | - | Transient yellowing might occur. |

[^5]Table 20. Herbicides for weed control for oats - early post-emergence - page 3 of 4 .

##  <br> Grass and broadleaf control products

| Chlorsulfuron 750 |
| :--- |
| Broadleaf control products |


| Affinity ${ }^{\otimes}$ Force (carfentrazone 240) | 14 | >13 | mL/ha | 50-150 | 85-100 | - | 65-100 | - | 85 | 85 | 85 | - | - |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Agtryne ${ }^{\oplus}$ MA (terbutryn $275+$ MCPA 160) | $4+5$ | 13-15 | L/ha | 50-100 | 1.0-1.5 | - | 1.0 | - | - | 1.0 | - | - | - |
| Aptitude ${ }^{\oplus}$ (metribuzin 375 + carfentrazone-ethyl 90) | $\begin{aligned} & 5+ \\ & 14 \end{aligned}$ | 13-25 | g/ha | 50-150 | 200 | - | - | - | 200 | - | 200 | - | - |
| Broadside ${ }^{\oplus}$ (bromoxynil $140+$ <br> MCPA 280 + dicamba 40) | $6+4$ | 13-30* | L/ha | >50 | $\begin{gathered} 0.75- \\ 1.0 \end{gathered}$ | - | - | - | - | - | - | - | - |
| Broadstrike ${ }^{\oplus}$ (flumetsulam 800) | 2 | 21-31 | g/ha | 50-150 | 25 | - | $\begin{gathered} 25(\mathrm{~S}) \\ \text { or* }^{*} \end{gathered}$ | $\begin{gathered} 25 \text { or } \\ 25^{*} \end{gathered}$ | - | - | 25 | - | - |
| Bromicide (bromoxynil 200) | 6 | 13-30 | L/ha | 50-200 | 1.4 | - | 1.4-2.1 | 1.4 | - | 1.4 | 1.4-2.1 | - | 2.1 |
| Bronco ${ }^{\oplus}$ MA-X (bromoxynil $280+$ MCPA 280) | $6+4$ | 13-30 | L/ha | 50-200 | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | - | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | - | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | - | - |
| Buttress ${ }^{\circ}$ (2,4-DB 500) | 4 | 15-33 | L/ha | >80 | 2.1-3.2 | - | 2.1-3.2 | - | 2.1-3.2 | - | 2.1-3.2 | - | - |
| Condor ${ }^{\circledR}$ (MCPA 375 + pyraflufen-ethyl 10) | 4 | $4+14$ | 12-29 | L/ha | 0.8-1.6 | - | - | - | 0.8-1.6 | - | - | - | - |
| Diuron 900 | 5 | 12-22 | 40-70 | kg/ha | 0.5 | - | - | - | - | - | - | - | - |
| Ecopar ${ }^{\circ}$ (pyraflufen-ethyl 20 ) | 14 | 12-29 | L/ha | 70-150 | 0.4-0.8 | - | - | - | 0.4-0.8 | - | - | - | - |
| Enforcer® 242 (picloram 26 + MCPA 420) | 4 | 22-30 | L/ha | >50 | 1.0 | 1.0 (S) | - | - | - | - | - | 1.0 | - |
| FallowBoss ${ }^{\circledR}$ Tordon ${ }^{\ominus}$ (2,4-D amine 300 + picloram 75 + aminopyralid 7.5) | 4 | 14-31 | L/ha | 50-100 | 0.3* | 0.3 | - | - | - | - | - | - | - |
| Flight ${ }^{\bullet}$ EC (picolinafen 35 + bromoxynil 210 + MCPA 350) | $\begin{aligned} & 6+ \\ & 12 \\ & +4 \end{aligned}$ | 13-28 | L/ha | 50-150 | $\begin{gathered} 0.36- \\ 0.72 \end{gathered}$ | - | - | - | $\begin{aligned} & 0.3- \\ & 0.72 \end{aligned}$ | - | $\begin{gathered} 0.36- \\ 0.72 \end{gathered}$ | - | - |
| Grindstone ${ }^{\circledR}$ (aminopyralid 240) | 4 | 13-31 | mL/ha | 50-100 | - | - | - | - | 32 | - | - | - | - |
|  |  |  |  |  | - | - | - | - | - | - | - | - | - |
| Hotshot ${ }^{\oplus}$ (aminopyralid $10+$ fluroxypyr 140) Northern NSW only | 4 | 13-31 | L/ha | >80 | - | - | - | - | 0.75 | - | - | - | - |

## ||nill| || <br> Comments

| 20 | - | - | - | - | - | - | - | - | $\begin{gathered} 15 \text { or } \\ 20 \end{gathered}$ | 15 | 20 | Rate, plant backs and crop safety are heavily influenced by soil pH ; refer label. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| - | 85 | 85 | - | - | - | - | 85-100 | 85* | 100 | 85 | 85 | Add minimum of $330 \mathrm{~mL} / \mathrm{ha}$ MCPA 750. <br> *Add dicamba. |
| - | - | 1.5 | 1.5 | - | - | - | 1.5 | - | - | 1.0 | 1.5 | Not suitable for some varieties; refer label. |
| - | - | - | - | - | - | - | 200 | - | 200 | 200 | - | MCPA amine can be added for improved control. Do not use MCPA LVE or any other ester formulations; refer label. |
| - | - | $\begin{gathered} 0.75- \\ 1.0 \end{gathered}$ | - | - | - | - | - | - | $\begin{gathered} 0.75- \\ 1.0 \end{gathered}$ | - | $\begin{gathered} 0.75- \\ 1.0 \end{gathered}$ | *Rate increases with crop growth; refer label. |
| - | - | 25* | - | - | - | - | - | - | $\begin{aligned} & 15^{*} \text { or } \\ & 25 \text { (S) } \end{aligned}$ | 15-25 | - | *Apply with a partner herbicide; refer label. Adjuvant: NIS 0.2\%. Transient yellowing can occur. |
| - | - | 1.4 | 1.4 | 1.4 | - | 1.4-2.1 | - | - | 1.4 | 1.4 | 1.4 | Add 2,4-D amine or MCPA LVE; refer label. |
| - | 1.0-1.5 | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | - | $\begin{aligned} & 1.0- \\ & 1.43 \\ & \hline \end{aligned}$ | - | - | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | Application rate increases with crop growth and weed size; refer label. Do not spray if temperature is $>20^{\circ} \mathrm{C}$. |
| - | 2.1-3.2 | 2.1-3.2 | 2.1-3.2 | 2.1-3.2 | 2.1-3.2 | 2.1-3.2 | - | - | - | 2.1-3.2 | 2.1-3.2 |  |
| - | - | - | - | - | - | - | - | - | 0.8-1.6 | 0.8-1.6 | - | Adjuvant: NIS $0.1 \%$; some phytotoxicity might occur. |
| - | - | 0.5 | 0.5 | - | - | - | - | - | 0.5 | 0.5 | - |  |
| - | - | - | - | - | - | - | - |  | 0.3 | 0.4-0.8 | - | $400 \mathrm{~mL} / \mathrm{ha}$ is the maximum rate at Z12. Add MCPA amine 750. |
| - | 1.0 | 1.0 | 1.0 | - | - | 1.0 | - | - | 1.0 | 1.0 | 1.0 (S) |  |
| - | 0.3 | 0.3 | 0.3 | - | - | 0.3* | - | - | 0.3* | 0.3* | 0.3* (S) | Northern NSW only. *Add 2,4-D amine. Adjuvant: NIS 1000 |
| - | 0.72 (S) | 0.72 (S) | 0.72 | - | - | - | 0.72 | - | $\begin{gathered} 0.36- \\ 0.72 \end{gathered}$ | $\begin{gathered} 0.36- \\ 0.72 \end{gathered}$ | - | Rates increase with weed size and crop growth stage; refer label. |
| - | 20-32 | 20-32 | - | - | - | - | - | 32 | - | - | - | Northern NSW only. Must have a mix partner. Crop growth stage and rate are determined by mix partner; refer label. |
| - | - | - | - | - | - | - | - | 20 | - | - | - | Southern NSW only. Add fluroxypyr; refer label. |
| - | $\begin{aligned} & 0.5- \\ & 0.75^{*} \end{aligned}$ | $\begin{aligned} & 0.5- \\ & 0.75^{*} \end{aligned}$ | - | - | - | $\begin{gathered} 0.5- \\ 0.75^{*} \end{gathered}$ | - | 0.75 | - | - | - | *Add a mix partner; refer label. Add MCPA LVE; refer label. |

Table 20. Herbicides for weed control for oats - early post-emergence - page 4 of 4 .

| Note: example trade names shown. Others may be available at different concentrations. See labels for details. |  |  |  |  | $\begin{aligned} & \text { n } \\ & \frac{n}{5} \\ & \stackrel{H}{n} \\ & \stackrel{\rightharpoonup}{n} \end{aligned}$ |  |  |  |  |  |  |  | $\begin{aligned} & \bar{\omega} \\ & \text { ì } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Igran ${ }^{\circledR}$ Flowable (terbutryn 500) | 5 | 13-21 | L/ha | 50-100 | $\begin{gathered} 0.33- \\ 0.44^{*} \text { or } \\ 0.55- \\ 0.85 \wedge \end{gathered}$ | - | $\begin{gathered} 0.55- \\ 0.85 \end{gathered}$ | - | - | - | 0.44* | - | - |
| Kamba® 750 (dicamba 750) | 4 | 15-30 | mL/ha | >50 | $\begin{gathered} 105^{*} \text { or } \\ 185 \wedge \end{gathered}$ | 185 | - | - | - | - | - | - | 185^ |
| Kamba® M (MCPA 340 + dicamba 80) | 4 | 21-30 | L/ha | >50 | 1.0-1.7 | 1.7 | - | - | - | - | - | - | 1.0-1.7 |
| Legacy ${ }^{\text {M }}$ M (diflufenican 25 + MCPA 250) | $\begin{aligned} & 4+ \\ & 12 \end{aligned}$ | 13-30 | L/ha | >50 | 0.5-1.0 | - | 1.0 (S) | 1.0 (S) | 0.5-1.0 | 1.0 (S) | 0.5-1.0 | 1.0 (S) | - |
| Lontrel® Advanced (clopyralid 600) | 4 | 13-30 | mL/ha | 50-100 | - | - | - | - | 50-75* | - | - | 250* | - |
| MCPA amine 750 | 4 | 12-39 | L/ha | 30-120 | 0.6 | - | $\begin{aligned} & 0.6- \\ & 0.96 \end{aligned}$ | - | - | $\begin{gathered} 0.46- \\ 0.96 \end{gathered}$ | - | $\begin{gathered} 0.96- \\ 1.35 \end{gathered}$ | - |
| MCPA LVE 570 | 4 | 13-37 | L/ha | 30-120 | $\begin{gathered} 0.49- \\ 0.88 \end{gathered}$ | - | - | - | - | - | - | $\begin{gathered} 0.965- \\ 1.4 \end{gathered}$ | - |
| Paradigm ${ }^{\ominus}$ (florasulam $200+$ halauxifen 200) | $2+4$ | 13-39 | g/ha | 80-100 | 25* | - | - | - | 25* | - | 25* | - | - |
| Pixxaro ${ }^{\circ}$ (fluroxypyr 250 + halauxifen 16.25) | 4 | 13-39 | L/ha | >80 | - | - | - | - | 0.4 | - | - | - | - |
| Precept ${ }^{\oplus}$ (MCPA $125+$ pyrasulfotole 25) | $\begin{aligned} & 4+ \\ & 27 \end{aligned}$ | 13-31 | L/ha | 50-100 | 1.0-2.0 | - | 1.0-2.0 | - | 1.0-2.0 | - | - | - | - |
| Quadrant${ }^{\circledR}$ (MCPA ester 250 + bromoxynil $240+$ diflufenican $20+$ picolinafen 10) | $\begin{aligned} & 4+6 \\ & +12 \end{aligned}$ | 13-28 | L/ha | 50-100 | 0.6-1.2 | - | 0.8-1.2 | 1.2 | 0.6-1.2 | 0.8-1.2 | 0.6-1.2 | 1.0 (S) | 0.8-1.0 |
| Starane ${ }^{\oplus}$ Advanced (fluroxypyr 333) | 4 | 13-39 | L/ha | >50 | - | - | - | - | 0.3 | - | - | - | - |
| Trezac ${ }^{\circledR}$ (aminopyralid $25+$ halauxifen 30 + cloquintocetmexyl 30) | 4 | 13-31 | L/ha | >80 | - | - | - | - | 200* | - | - | - | - |
| Triasulfuron 750 | 2 | 13-22 | g/ha | 30-100 | $\begin{aligned} & 6.5- \\ & 10^{\wedge} \end{aligned}$ | - | - | - | - | - | $10^{\wedge}$ | - | - |
| Triathlon ${ }^{\ominus}$ (MCPA 250 + bromoxynil 150 + diflufenican 25) | $\begin{aligned} & 4+6 \\ & +12 \end{aligned}$ | 13-30 | L/ha | 50-100 | 0.5-1.0 | - | 1.0 (S) | 1.0 (S) | 0.5-1.0 | 1.0 (S) | 0.5-1.0 | 1.0 (S) | - |

Adjuvant key: $M O=$ mineral oil, $M O S=$ mineral oil plus surfactant, $M S O=$ methylated seed oil, $\mathrm{NIS}=$ non-ionic surfactant
NIS products might indicate a specific concentration (i.e. NIS 1000); refer to adjuvant chart for example products.

| $\begin{aligned} & \circ \\ & \text { O } \\ & \text { 訁訁 } \\ & \stackrel{0}{0} \end{aligned}$ |  | 중 $\stackrel{y}{0}$ i. in |  |  |  |  | $\begin{aligned} & \frac{\tilde{u}}{3} \\ & \frac{\rightharpoonup}{2} \\ & \stackrel{\rightharpoonup}{\circ} \\ & \end{aligned}$ | $\stackrel{\substack{5 \\ \cline { 1 - 2 }}}{ }$ |  | 을 <br>  <br> $\frac{2}{3}$ <br> $\frac{2}{3}$ <br>  |  | Comments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| - | - | $\begin{aligned} & 0.55- \\ & 0.85 * \end{aligned}$ | - | - | - | - | $\begin{gathered} 0.55- \\ 0.85 \end{gathered}$ | 0.6* | $\begin{gathered} 0.44- \\ 0.6^{*} \end{gathered}$ | $\begin{gathered} 0.33- \\ 0.44^{*} \text { or } \\ 0.55- \\ 0.85 \wedge \end{gathered}$ | - | Not suitable for some varieties; refer label. <br> *Add Triasulfuron 750. <br> $\wedge$ Add MCPA or 2,4-D. |
| - | - | $\begin{gathered} 185 \text { or } \\ 105^{*} \end{gathered}$ | 185^ | - | - | - | - | $\begin{aligned} & 185 \text { or } \\ & 105^{*} \end{aligned}$ | 105* | $\begin{gathered} 185 \wedge \\ \text { or105* } \end{gathered}$ | $\begin{aligned} & 185 \text { or } \\ & 105^{*} \end{aligned}$ | *Add MCPA amine. <br> $\wedge$ Add MCPA or 2,4-D amine. |
| - | - | 1.0-1.7 | 1.7 | - | - | 1.7 | - | 1.0-1.7 | 1.0-1.7 | 1.0-1.7 | 1.0-1.7 |  |
| - | 1.0 (S) | 1.0 (S) | 1.0 | - | - | 1.0 (S) | 1.0 | 1.0 (S) | 0.5-1.0 | 0.5-1.0 | 0.75 (S) | Application rate increases with crop growth and weed size; refer label. Add MCPA for radish control. |
| - | 50 | - | 25* | 25* | 25* | 25* | - | 40-50 | - | - | - | Rates and timing are determined by weed size and mix partner. *There are many mix partners; refer label. |
| - | - | - | $\begin{aligned} & 0.6- \\ & 1.35 \end{aligned}$ | $\begin{aligned} & 0.6- \\ & 1.35 \end{aligned}$ | $\begin{aligned} & 0.96- \\ & 1.35 \end{aligned}$ | $\begin{aligned} & 0.6- \\ & 1.35 \end{aligned}$ | - | - | 0.6 | 0.6 | - | Application rate increases with crop growth and weed size; refer label. |
| - | - | - | $\begin{gathered} 0.95- \\ 1.4 \end{gathered}$ | - | - | $\begin{aligned} & 0.74- \\ & 0.96 \end{aligned}$ | - | - | $\begin{gathered} 0.965- \\ 1.4 \end{gathered}$ | $\begin{gathered} 0.615- \\ 0.965 \end{gathered}$ | - | Application rate increases with crop growth and weed size; refer label. |
| - | 25* | 25* | - | - | - | - | 25 (S) | 25* | 25* | 25* | - | *Add MCPA LVE. Rate of mix partner changes with crop growth stage; refer label. Adjuvant; refer label. |
| - | 0.4 | - | - | - | - | - | - | - | - | - | - | Adjuvant: MOS 0.5\%. |
| - | 1.0-2.0 | $\begin{gathered} 1.5-2.0 \\ (\mathrm{~S}) \end{gathered}$ | - | - | - | - | - | 1.0* | 1.0-2.0 | 1.0-2.0 | 1.0-2.0 | *Add clopyralid for control. Adjuvant: AMS, MSO 0.5-1\%, MOS 0.5-0.75\%. |
| - | 1.2 | 0.8-1.2 | 0.8-1.0 | 0.8-1.0 | - | 1.2 | 0.8-1.0 | 1.0 (S) | 0.6-1.2 | 0.6-1.2 | 0.8-1.2 | Rate is dictated by weed size; refer label. Transient yellowing might occur. Temperature $>20^{\circ} \mathrm{C}$ can increase effects. |
| - | 0.6 | 0.9 | - | - | - | - | - | - | - | - | - | Adjuvant: weed specific; refer label. |
| - | 200^ | 200^ | - | - | - | 200^ | - | 200 | - | - | - ** | *Add fluroxypyr. <br> ^Add fluroxypyr + MCPA LVE. <br> Adjuvant: MOS 0.5\%. |
| - | - | - | - | - | - | - | - | - | $\begin{gathered} 10-15^{*} \\ \text { or } \end{gathered}$ | $6.5 \wedge$ | - * | *Add MO 1\%. <br> $\wedge$ Add terbutryn. |
| - | 1.0 (S) | 1.0 (S) | 1.0 | - | - | 1.0 (S) | 1.0 | 1.0 (S) | 0.5-1.0 | 0.5-1.0 | 0.75 (S) | Transient yellowing might occur. |


| Note: example trade names shown. Others may be available at different concentrations. See labels for details. |  |  |  |  |  | $\begin{aligned} & \text { ? } \\ & \text { N } \\ & \text { 華 } \\ & \text { © } \end{aligned}$ |  |  |  | $\begin{aligned} & \text { 는 } \\ & \text { 흧 } \\ & \text { 든 } \end{aligned}$ |  |  |  |  | 艽 |  |  |  |  | ה |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Broadleaf control products |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2,4-D amine 700 | 4 | 30-37 | L/ha | $\begin{aligned} & 50- \\ & 250 \end{aligned}$ | 0.98 | - | 0.98 | - | $\begin{gathered} 0.98- \\ 1.15 \end{gathered}$ | $\begin{aligned} & 0.5- \\ & 1.15 \end{aligned}$ | - | - | - | - | $\begin{gathered} 0.98- \\ 1.15 \end{gathered}$ | 1.15 | - | - | 1.15 | $\begin{aligned} & 0.5- \\ & 1.15 \end{aligned}$ |
| Affinity ${ }^{\circ}$ Force (carfentrazone 240) | 14 | >13 | $\mathrm{mL} / \mathrm{ha}$ | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | - | - | 85 | $\begin{aligned} & 85- \\ & 100 \end{aligned}$ | 85 | - | - | $\begin{aligned} & 85- \\ & 100^{*} \end{aligned}$ | $\begin{aligned} & 85- \\ & 100 \end{aligned}$ | - | - | $\begin{aligned} & 85- \\ & 100 \\ & 100 \end{aligned}$ | 85* | 85* | - | 85 |
| Broadstrike ${ }^{\bullet}$ (flumetsulam 800) | 2 | 61-83 | g/ha | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | 25 | 25 | - | 25 | 25* | 25 | - | - | - | $\underset{(\mathrm{s})^{*}}{25}$ | - | - | - | - | - | - |
| Lontrel ${ }^{\ominus}$ Advanced (clopyralid 600) | 4 | 13-45 | L/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| MCPA amine 750 | 4 | 30-37 | L/ha | $\begin{aligned} & 30- \\ & 120 \end{aligned}$ | - | - | $\begin{gathered} 0.97- \\ 1.35 \end{gathered}$ | $\begin{gathered} 0.66- \\ 0.96 \end{gathered}$ | 1.45 | 0.66 | - | - | - | 1.45 | - | - | - | - | - | 0.93 |
| MCPA LVE 570 | 4 | 15-37 | L/ha | $\begin{aligned} & 30- \\ & 120 \end{aligned}$ | - | - | - | 1.3 | - | $\begin{gathered} 0.44- \\ 1.4 \end{gathered}$ | - | - | - | $\begin{gathered} 0.44- \\ 0.6^{*} \end{gathered}$ | - | - | - | - | - | $\begin{gathered} 0.44- \\ 0.6^{*} \\ \text { or } \\ 0.965 \end{gathered}$ |
| Paradigm ${ }^{\ominus}$ <br> (florasulam 200 + <br> halauxifen 200) | $\begin{gathered} 2+ \\ 4 \end{gathered}$ | 13-39 | g/ha | $\left[\begin{array}{l} 80- \\ 100 \end{array}\right.$ | - | 25* | - | 25* | 25*(S) | - | 25* | - | - | 25 | - | - | 25* | 25* | 25* | 25 |
| Pixxaro ${ }^{\circ}$ <br> (fluroxypyr 250 + halauxifen 16.25) | 4 | 13-39 | L/ha | >80 | - | 0.4 | $\begin{gathered} 0.4- \\ 0.6 \end{gathered}$ | - | - | - | 0.4 | - | - | $\begin{gathered} 0.2- \\ 0.3 \end{gathered}$ | - | - | - | - | 0.3 | 0.3 |

[^6]NIS products might indicate a specific concentration (i.e. NIS 1000); refer to adjuvant chart for example products.

| - | $\begin{gathered} 0.715- \\ 1.15 \end{gathered}$ | - | - | 1.15 | $\begin{gathered} 0.8- \\ 0.9 \end{gathered}$ | $\begin{aligned} & 0.5- \\ & 1.15 \end{aligned}$ | $\begin{gathered} 0.98- \\ 1.15 \end{gathered}$ | - | - | - | 0.98 | $\begin{gathered} 0.98- \\ 1.15 \end{gathered}$ | $\begin{gathered} 0.98- \\ 1.15 \end{gathered}$ | 1.15 | 1.15 | 1.15 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 85* | 85* | $\begin{aligned} & 65- \\ & 100 \end{aligned}$ | - | - | - | $\begin{aligned} & 85- \\ & 100 \end{aligned}$ | - | $\begin{aligned} & 65- \\ & 100 \end{aligned}$ | - | 85 | 85 | 85 | - | - | 85 | 85 | Add minimum of $330 \mathrm{~mL} / \mathrm{ha}$ MCPA 750. *Add dicamba. |
| - | 25 | 15/25* | - | - | - | 25 | - | $\begin{gathered} 25(\mathrm{~S}) \\ \mathrm{or}^{*} \end{gathered}$ | $\begin{gathered} 25(S) \\ \mathrm{or}^{*} \end{gathered}$ | - | - | 25 | - | - | - | 25* | *Apply with a partner herbicide; refer label. Adjuvant: MOS 0.5\% or NIS 0.2\%, NIS 0.2\%. |
| - | - | - | - | - | - | - | - | - | - | 75 | - | - | - | - | - | - | Add MCPA LVE. |
| - | - | - | - | - | 1.35 | 0.66 | - | $\begin{gathered} 0.66- \\ 0.96 \end{gathered}$ | - | - | $\begin{gathered} 0.46- \\ 0.96 \end{gathered}$ | - | $\begin{aligned} & 0.96- \\ & 1.35 \end{aligned}$ | - | - | - | Application rate increases with crop growth and weed size; refer label. |
| - | - | - | - | - | - | $\begin{gathered} 0.49- \\ 0.88 \end{gathered}$ | - | - | - | - | - | $\begin{gathered} 0.44- \\ 0.6^{*} \end{gathered}$ | $\begin{gathered} 0.965- \\ 1.4 \end{gathered}$ | - | $\begin{gathered} 0.44- \\ 0.6^{*} \end{gathered}$ | - | Application rate increases with crop growth and weed size; refer label. |
| 25* | 25* | 25 | 25* | 25 | - | 25* | - | - | - | 25* | - | 25* | - | - | 25* | 25* | *Add MCPA LVE. Rate of mix partner changes with crop growth stage; refer label. |
| - | - | 0.3 | 0.3 | $\begin{gathered} 0.2- \\ 0.3 \end{gathered}$ | - | - | - | - | - | 0.4 | - | - | - | - | 0.4 | - | Adjuvant: MOS 0.5\%. |

## Broadleaf control product

| 2,4-D amine 700 | 4 | 30-37 | L/ha | $\begin{aligned} & 50- \\ & 250 \end{aligned}$ | $\begin{aligned} & 0.5- \\ & 1.15 \end{aligned}$ | $\begin{gathered} 0.715- \\ 1.15 \end{gathered}$ | $\begin{aligned} & 0.5- \\ & 1.15 \end{aligned}$ | $\begin{aligned} & 0.5- \\ & 1.15 \end{aligned}$ | - | $\begin{gathered} 0.98- \\ 1.15 \end{gathered}$ | $\begin{gathered} 0.715- \\ 1.15 \end{gathered}$ | $\begin{aligned} & 0.5- \\ & 1.15 \end{aligned}$ | - |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Affinity ${ }^{\bullet}$ Force (carfentrazone 240) | 14 | >13 | mL/ha | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | - | - | - | - | $\begin{aligned} & 85- \\ & 100 \end{aligned}$ | 85* | 100 | 85 | 85 | Add minimum of $330 \mathrm{~mL} / \mathrm{ha}$ MCPA 750. *Add dicamba. |
| Broadstrike ${ }^{\ominus}$ (flumetsulam 800) | 2 | 61-83 | g/ha | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | - | - | - | - | - | - | $\begin{aligned} & 15^{*} \text { or } \\ & 25 \text { (S) } \end{aligned}$ | 15-25 | - | *Apply with a partner herbicide; refer label. Adjuvant: W MOS 0.5\% or NIS 0.2\%, B NIS 0.2\% |
| Lontrel ${ }^{\oplus}$ Advanced (clopyralid 600) | 4 | 13-45 | L/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | 25 | 25 | 25 | 25 | - | 40 | - | - | - | Add MCPA LVE. |
| MCPA amine 750 | 4 | 30-37 | L/ha | $\begin{aligned} & 30- \\ & 120 \end{aligned}$ | $\begin{aligned} & 0.6- \\ & 1.35 \end{aligned}$ | $\begin{aligned} & 0.6- \\ & 1.35 \end{aligned}$ | $\begin{gathered} 0.96- \\ 1.35 \end{gathered}$ | $\begin{aligned} & 0.6- \\ & 1.35 \end{aligned}$ | - | - | 0.6 | 0.6 | - | Application rate increases with crop growth and weed size; refer label. |
| MCPA LVE 570 | 4 | 15-37 | L/ha | $\begin{aligned} & 30- \\ & 120 \end{aligned}$ | $\begin{gathered} 0.965- \\ 1.4 \end{gathered}$ | - | - | $\begin{gathered} 0.74- \\ 0.96 \end{gathered}$ | - | - | $\begin{gathered} 0.965- \\ 1.4 \end{gathered}$ | $\begin{gathered} 0.615- \\ 0.965 \end{gathered}$ | - | Application rate increases with crop growth and weed size; refer label. |
| Paradigm ${ }^{\text {® }}$ <br> (florasulam 200 + <br> halauxifen 200) | $\begin{gathered} 2+ \\ 4 \end{gathered}$ | 13-39 | g/ha | $\begin{aligned} & 80- \\ & 100 \end{aligned}$ | - | - | - | - | 26 (S) | 25* | 25* | 25* | - | *Add MCPA LVE. Rate of mix partner changes with crop growth stage refer label. |
| Pixxaro ${ }^{\circ}$ (fluroxypyr 250 + halauxifen 16.25) | 4 | 13-39 | L/ha | >80 | - | - | - | - | - | - | - | - | - | Adjuvant: MOS 0.5\%. |

Key: $\mathrm{IMI}=$ imidazoline tolerant varieties, $\mathrm{NR}=$ not required, $(\mathrm{S})=$ suppression only
Adjuvant key: $\mathrm{MO}=$ mineral oil, MOS = mineral oil plus surfactant, MSO = methylated seed oil, NIS = non-ionic surfactant. NIS products might indicate a specific concentration (i.e. NIS 1000); refer to adjuvant chart for example products.

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Table 22. Herbicides for weed control for cereal rye and triticale - early post-emergence - page 1 of 4 .


Grass control products. High levels of herbicide resistance to Groups 1 and 2 selective herbicides are common in most grass weeds. Do not rely on these products as your only management tool

| Achieve ${ }^{\ominus}$ WG <br> (tralkoxydim 400) | 1 | $12-22$ | g/ha | $50-$ <br> 150 | $380-$ <br> 500 <br> (S) | $380-$ <br> 500 | - | - | - | $300-$ |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 500 |  |  |  |  |  |  |  |  |  |  |$|$

Grass and broadleaf control products

| Chlorsulfuron 750 | 2 | $\begin{gathered} \text { T:00, } \\ \text { CR:>12 } \end{gathered}$ | g/ha | >30 | - | 15-25 | - | - | - | - | 15 | - | 20 | - | - | 15 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Rexade ${ }^{\oplus}$ (pyroxsulam $150+$ <br> halauxifen 50) <br> Triticale only | $2+4$ | 13-31 | g/ha | $\begin{aligned} & 80- \\ & 100 \end{aligned}$ | 100 | 100 (S) | 100 (S) | 100 | 100 (S) | 100 | - | 100 | 100* | 100 | 100* |  |
| Sulfosulfuron 750 | 2 | $\begin{gathered} 11- \\ 15 / 22 \end{gathered}$ | g/ha | $\begin{aligned} & 40- \\ & 100 \end{aligned}$ | - | - | 25 (S) | $\begin{aligned} & 20 \text { or } \\ & 25(\mathrm{~S}) \end{aligned}$ | 25 | 25 (S) | 25 | - | - | 20 | - |  |




Ensure you have an IWM plan in place. It is recommended to get your weeds tested for resistance - consult your advisor for localised information.

|  |  |  |  |  |  |  |  |  |  |  |  | Rate is influenced by crop and weed size at application. Adjuvant: MOS 1\%. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  |  |  | Do not spray if temperature is $>25^{\circ} \mathrm{C}$. Adjuvant: NIS 0.25\%. |
|  |  |  |  |  |  |  |  |  |  |  |  | Rate is influenced by crop and weed size at application. |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| - | - | 20 | $\begin{gathered} 15 \text { or } \\ 20 \end{gathered}$ | - | - | - | - | - | 20 | - | - | Rate, plant backs and crop safety are heavily influenced by soil pH; refer label. |
| 100 | - | - | 100 | - | - | 100 | 100 | 100* (S) | 100 | 100 | 100 (S) | *Requires mix partner; refer label. Adjuvant: always use NIS 1000 0.25\%. |
| - | - | - | - | - | - | - | 20 | - | - | - | - | Rate, plant backs and crop safety are heavily influenced by soil pH; refer label. Adjuvant MSO 1-2\%. |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| - | $\begin{aligned} & 85- \\ & 100^{*} \end{aligned}$ | 85-100 | - | - | 85-100 | 85* | 85* | - | 85 | 85* | 85* | Add minimum of $330 \mathrm{~mL} /$ ha MCPA 750. *Add dicamba. |
| 5 | - | - | 5 | 5 or 7 | - | - | 7 | - | 5 | - | 5 | Tank mix partners will broaden the weed spectrum; refer label. |
| - | - | 1-1.4 | - | $\begin{gathered} 0.75- \\ 1.0 \end{gathered}$ | - | - | - | - | 1-1.4 | - | - | *Rate increases with crop growth; refer label. |
| - | - | 1.4 | - | - | - | - | - | - | 2.1 | - | - | Add 2,4-D amine or MCPA LVE; refer label. |
| - | - | $\begin{aligned} & 0.5- \\ & 0.75 \end{aligned}$ | $\begin{aligned} & 0.5- \\ & 0.75 \end{aligned}$ | - | $\begin{gathered} 0.5- \\ 0.75(S) \end{gathered}$ | - | 0.75 (S) | - | 0.75 (S) | - | $\underset{(S)}{0.5-1.0}$ | *Add MCPA LVE. Can cause transient yellowing. |
| - | 0.54 | $\begin{aligned} & 1.0- \\ & 1.43 \\ & \hline \end{aligned}$ | - | - | - | - | - | - | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | - | - | Application rate increases with crop growth and weed size; refer label. Do not spray if temperature is $>20^{\circ} \mathrm{C}$. |
| - | - | - | - | 2.1-3.2 | - | - | - | - | 2.1-3.2 | - | - |  |
| 0.4* | - | - | 0.4* | - | 0.4-0.8 | 0.4* | - | - | 0.4* | - | 0.4-0.8 | $400 \mathrm{~mL} /$ ha is the maximum rate at Z 12 . Always add MCPA amine 750. *Add $5 \mathrm{~g} /$ ha metsulfuron-methyl 600 . |
| - | - | - | - | - | - | - | - | - | - | - | - |  |
| - | - | - | - | 0.3 | - | - | - | 0.3 | - | - | - | Northern NSW only. Adjuvant: NIS 1000. *Add 2,4-D amine. |
| - | - | 0.72 | 0.72 (S) | - | - | - | - | - | $\begin{gathered} 0.54- \\ 0.72(S) \end{gathered}$ | - | 0.72 (S) | Rates increase with weed size and crop growth stage; refer label. |
| 16-32 | - | - | 16-32 | $\begin{gathered} 16 \text { or } \\ 22 \end{gathered}$ | - | 16-32 | 32 | 32 | - | - | - | Northern NSW only. Must have a mix partner. Crop growth stage and rate are determined by mix partner; refer label. |
| - | - | - | - | - | - | 20 | 20 | - | - | - | 20 | Southern NSW only. Add fluroxypyr; refer label. |

Table 22. Herbicides for weed control for cereal rye and triticale - early post-emergence - page 2 of 4.

| Note: example trade names shown. Others may be available at different concentrations. See labels for details. |  |  |  |  |  |  |  |  |  | $\begin{aligned} & \stackrel{y}{0} \\ & \frac{0}{3} \\ & \frac{0}{3} \end{aligned}$ |  |  |  |  | $\begin{aligned} & \text { ס్ँ } \\ & \sum_{0}^{0} \\ & \text { iٍ } \end{aligned}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{aligned} & \text { Hotshot }{ }^{\odot} \text { (aminopyralid } 10 \\ & + \text { fluroxypyr } 140 \text { ) } \\ & \text { Triticale only } \end{aligned}$ | 4 | 13-31 | L/ha | >80 |  |  |  |  |  |  | - | - | $\begin{array}{\|l\|} 0.5- \\ 0.75 \end{array}$ | - | - | - |
| Igran ${ }^{\circledR}$ Flowable (terbutryn 500) Triticale only | 5 | 13-21 | L/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ |  |  |  |  |  |  | $\begin{aligned} & 0.55- \\ & 0.85 \end{aligned}$ | - | 0.44* | - | $\begin{gathered} 0.55- \\ 0.85 \end{gathered}$ | $\begin{aligned} & 0.55- \\ & 0.85^{*} \end{aligned}$ |
| Kambå 750 (dicamba 750) | 4 | 15-30 | mL/ha | >50 |  |  |  |  |  |  | - | - | 185 | - | $\begin{gathered} 105^{*} \\ o r \\ 185 \wedge \end{gathered}$ | $\begin{gathered} 105^{*} \\ \text { or } \\ 185 \wedge \end{gathered}$ |
| Kamba ${ }^{\oplus}$ M (MCPA $340+$ dicamba 80) | 4 | 21-30 | L/ha | >50 |  |  |  |  |  |  | - | - | 1.7 | - | $\begin{aligned} & 1.0- \\ & 1.7 \end{aligned}$ | $\begin{gathered} 1.0- \\ 1.7 \end{gathered}$ |
| Legacy ${ }^{\oplus}$ MA <br> (diflufenican 25 + MCPA <br> 250) | $\begin{aligned} & 4+ \\ & 12 \end{aligned}$ | 13-30 | L/ha | >50 |  |  |  |  |  |  | - | - | - | 0.5 | $\begin{aligned} & 0.5- \\ & 1.0 \end{aligned}$ | $\begin{aligned} & 0.5- \\ & 1.0 \end{aligned}$ |
| Lontrel ${ }^{\oplus}$ Advanced <br> (clopyralid 600) <br> Triticale only | 4 | 13-30 | mL/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ |  |  |  |  |  |  | - | - | - | - | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | - |
|  |  | 12-14 |  |  |  |  |  |  |  |  | 0.33 | - | - | - | 0.33 | 0.33 |
| MCPA amine 750 | 4 | 15-37 | L/ha | 120 |  |  |  |  |  |  | - | - | $\begin{aligned} & 0.97- \\ & 1.35 \end{aligned}$ | $\begin{gathered} 0.66- \\ 0.96 \end{gathered}$ | 1.45 | 0.66 |
| MCPA LVE 570 | 4 | 13-37 | L/ha | $\begin{aligned} & 30- \\ & 120 \end{aligned}$ |  |  |  |  |  |  | - | - | - | 1.3 | 1.49 | $\begin{gathered} 0.44- \\ 1.4 \end{gathered}$ |
| adigm® (florasulam 200 |  | 13-37 |  |  |  |  |  |  |  |  | - | 25* | - | 25* | $25^{*}(\mathrm{~S})$ | - |
| Triticale only |  | $\begin{gathered} \text { or } \\ 31-49 \end{gathered}$ |  |  |  |  |  |  |  |  | - | - | - | - | - | - |
| Pixxaro® (fluroxypyr $250+$ <br> halauxifen 16.25) <br> Triticale only | 4 | 13-39 | L/ha | >80 |  |  |  |  |  |  | - | 0.4 | $\begin{gathered} 0.4- \\ 0.6 \end{gathered}$ | - | - | - |
| Precept ${ }^{\ominus}$ (MCPA 125 + pyrasulfotole 25) | $\begin{aligned} & 4+ \\ & 27 \end{aligned}$ | 13-31 | L/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ |  |  |  |  |  |  | $\begin{aligned} & 1.5- \\ & 2.0 \end{aligned}$ | $\begin{aligned} & 1.5- \\ & 2.0 \end{aligned}$ | - | $\begin{aligned} & 1.0- \\ & 2.0 \end{aligned}$ | 1.0* | - |
| Quadrant ${ }^{\circledR}$ (MCPA ester <br> 250 + bromoxynil 240 + diflufenican 20 + picolinafen 10 ) | $\begin{aligned} & 4+6 \\ & +12 \end{aligned}$ | 13-28 | L/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ |  |  |  |  |  |  | $\begin{aligned} & 0.8- \\ & 1.0 \end{aligned}$ | $\begin{gathered} 0.8- \\ 1.0 \end{gathered}$ | $\begin{aligned} & 1.0- \\ & 1.2 \end{aligned}$ | 0.6 | $\begin{gathered} 0.6- \\ 1.2 \end{gathered}$ | $\begin{aligned} & 0.6- \\ & 1.2 \end{aligned}$ |
| Starane ${ }^{\oplus}$ Advanced <br> (fluroxypyr 333) <br> Triticale only | 4 | 13-39 | L/ha | >50 |  |  |  |  |  |  | - | 0.3 | $\begin{aligned} & 0.3(5) \\ & \text { or * or } \\ & 0.45 \end{aligned}$ | - | - | - |
| $\begin{aligned} & \text { Trezac (aminopyralid } \\ & 25+\text { halauxifen } 30+ \\ & \text { cloquintocet-mexyl } 30 \text { ) } \\ & \text { Triticale only } \end{aligned}$ | 4 | 13-31 | mL/ha | >80 |  |  |  |  |  |  | - | 200* | 200* | - | - | - |
| Triasulfuron 750 <br> Triticale only | 2 | 13-22 | g/ha | $\begin{aligned} & 30- \\ & 100 \end{aligned}$ |  |  |  |  |  |  | - | - | 10^ | - | - | - |
| Triathlon ${ }^{\ominus}$ (MCPA 250 + bromoxynil 150 + diflufenican 25) | $\begin{aligned} & 4+6 \\ & +12 \end{aligned}$ | 13-30 | L/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ |  |  |  |  |  |  | - | - | - | 0.5 | $\begin{aligned} & 0.5- \\ & 1.0 \end{aligned}$ | $\begin{aligned} & 0.5- \\ & 1.0 \end{aligned}$ |
| Velocity ${ }^{\text {( }}$ (pyrasulfotole 37.5 + bromoxynil 210) | $\begin{array}{r} 27 \\ +6 \end{array}$ | 12-31 | L/ha | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ |  |  |  |  |  |  | $\begin{gathered} 0.6- \\ 1.0 \end{gathered}$ | $\begin{array}{\|c\|} \hline 0.67- \\ 1.0 \end{array}$ | $\begin{aligned} & 0.5- \\ & 1.0 \end{aligned}$ | $\begin{aligned} & 0.5- \\ & 1.0 \end{aligned}$ | $\begin{aligned} & 0.5- \\ & 1.0 \end{aligned}$ | - |

[^7]|  |  |  |  | $\begin{aligned} & \text { ̌ } \\ & \text { 。 } \end{aligned}$ |  |  |  |  |  |  |  | Comments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0.75 | - | - | $\begin{gathered} 0.5- \\ 0.75^{*} \end{gathered}$ | - | - | 0.75 | 0.75 | 0.75* | - | - | - | *Add a mix partner; refer label. |
| - | - | $\begin{gathered} 0.55- \\ 0.85 \end{gathered}$ | $\begin{aligned} & 0.44- \\ & 0.6^{*} \end{aligned}$ | - | - | 0.44* | 0.44* | - | $\begin{gathered} 0.55- \\ 0.85 \end{gathered}$ | - | - | *Add Triasulfuron 750. <br> $\wedge$ Add MCPA or 2,4-D. |
| - | - | - | - | $\begin{aligned} & 185 \text { or } \\ & 105^{*} \end{aligned}$ | - | - | - | - | - | - | - | *Add MCPA amine. <br> $\wedge$ Add MCPA or 2,4-D amine. |
| - | - | - | - | 1.0-1.7 | - | - | - | - | - | - | - |  |
| - | - | 1.0 | 1.0 | 1.0 (S) | 1.0 (S) | - | - | - | 0.75 | - | 1.0 (S) | Application rate increases with crop growth and weed size; refer label. Add MCPA for radish control. |
| 50 | - | - | - | - | - | 50 | 40-50 | - | - | - | 50 | Rates and timing are determined by weed size and mix partner. There are many mix partners; refer label. |
| - | - | 0.33 | 0.33 | - | 0.33 | - | - | - | - | - | 0.46 | Use the low rate and add Diuron ${ }^{\ominus} 900$ for control of small weeds. |
| - | - | - | 1.45 | - | - | - | - | - | 0.93 | - | - | Application rate increases with crop growth and weed size; refer label. |
| - | - | - | - | - | - | - | - | - | 0.965 | - | - | Application rate increases with crop growth and weed size; refer label. |
| 25* | - | - | 25 | - | - | 25* | 25* | 25* | 25 | 25* | 25* | *Add MCPA LVE. Rate of mix partner changes with crop growth stage; refer label. Adjuvant: refer label. |
| $\begin{gathered} 25 \text { or } \\ 25^{*} \end{gathered}$ | - | - | 25 | - | - | - | - | - | 25 | - | - | *Add 0.8-1.2 L/ha 2,4-D amine 720. Adjuvant: refer label. |
| 0.4 | - | - | 0.2-0.3 | - | - | - | - | 0.3 | 0.3 | - | - | Adjuvant: MOS 0.5\%. |
| 1.0* | - | 1.0-2.0 | 1.5-2.0 | - | - | 1.0* | $\begin{aligned} & 1.0-2.0 \\ & \text { or } 1.0^{*} \end{aligned}$ | - | 1.0-2.0 | 1.0* | 1.0-2.0 | *Add clopyralid for control. Adjuvant: AMS, MSO 0.5-1\%, MOS 0.5-0.75\%. |
| - | 0.8-1.0 | 0.8-1.0 | 0.8-1.0 | 1.0 (S) | - | - | - | - | 0.8-1.2 | - | 1.0 (S) | Rate is dictated by weed size; refer label. Transient yellowing might occur. Temperature $>20^{\circ} \mathrm{C}$ can increase effects. |
| - | 0.6 | - | $\begin{gathered} 0.9 \text { or } \\ 0.3^{*} \end{gathered}$ | - | - | - | - | - | - | - | 0.9 | *Add mix partner. Adjuvant: weed specific; refer label. |
| 200 | - | - | 200 | - | - | 200 | 200 | 200 | 200 | - | - | *Add fluroxypyr. <br> $\wedge$ Add fluroxypyr + MCPA LVE. <br> Adjuvant: MOS 0.5\% |
| - | - | - | 10-13 | - | - | 10 | 10 | - | - | - | - | Add terbutryn. |
| - | - | 1.0 | 1.0 | 1.0 (S) | 1.0 (S) | - | - | - | 0.75 | - | 1.0 (S) | Transient yellowing might occur. |
| $\underset{(S)}{0.5-1.0}$ | - | 0.5-1.0 | 0.5-1.0 | - | - | 0.5-1.0 | $\begin{aligned} & 0.5(\mathrm{~S}) \\ & 0.67- \\ & 1.0 \end{aligned}$ | - | 0.5-1.0 | $\underset{(S)}{0.5-1.0}$ | 0.5-1.0 | Add LVE MCPA for control; refer label. |

Table 22. Herbicides for weed control for cereal rye and triticale - early post-emergence - page 3 of 4 .

##  <br> Grass and broadleaf control products

| Chlorsulfuron 750 | 2 | T: 00 <br> CR: $>12$ | g/ha | $>30$ | - | - | - | 20 | 15 | - | 15 | - | - | 20 | 20 |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Rexade <br> halauxifen 50$)^{\circ}$ <br> Triticale only | $2+4$ | $13-31$ | g/ha | $80-$ <br> 100 | $100^{*}$ <br> (S) | 100 | - | - | $100^{*}$ | - | - | - | $100^{*}$ | - | - |
| Sulfosulfuron 750 | 2 | $11-15 / 22$ | g/ha | $40-$ <br> 100 | - | - | - | - | $25(5)$ | - | - | - | - | - | - |

Broadleaf control products

| Affinity ${ }^{\bullet}$ Force (carfentrazone 240) | 14 | >13 | mL/ha | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | $\begin{aligned} & 65- \\ & 100 \end{aligned}$ | - | - | - | $\begin{aligned} & 85- \\ & 100 \end{aligned}$ | - | $\begin{aligned} & 65- \\ & 100 \end{aligned}$ | - | 85 | 85 | 85 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Associate ${ }^{\oplus}$ (metsulfuronmethyl 600) | 2 | 13-37 | g/ha | >50 | - | 5 | - | - | 5 | - | 5 or 7 | - | - | 5 | 5 |
| $\begin{aligned} & \text { Broadside }{ }^{\oplus} \text { (bromoxynil } \\ & 140+\text { MCPA } 280+ \\ & \text { dicamba 40) } \\ & \hline \end{aligned}$ | $6+4$ | 13-30* | L/ha | >50 | - | - | - | - | $\stackrel{c}{0.75-}$ | - | - | - | - | - | - |
| Bromicide ${ }^{\star}$ (bromoxynil 200) | 6 | 13-30 | L/ha | $\begin{aligned} & 50- \\ & 200 \end{aligned}$ | - | - | 1.4 | 1.4 | 1.4 | - | 1.4-2.1 | 1.4 | - | 1.4 | 1.4-2.1 |
| Bromoxynil $250+$ diflufenican 25 | $\begin{aligned} & 6+ \\ & 12 \end{aligned}$ | 12-29 | L/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | - | - | - | 1.0 (S) | 0.5-1.0 | - | $\begin{aligned} & 0.5- \\ & 0.75 \end{aligned}$ | 1.1 | 1.0 (S) | $\begin{aligned} & 0.5- \\ & 0.75 \end{aligned}$ | 1.0 |
| Bronco MA-X (bromoxynil 280 + MCPA 280) | $6+4$ | 13-30 | L/ha | $\begin{aligned} & 50- \\ & 200 \end{aligned}$ | - | - | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | - | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | - | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ |
| Buttress ${ }^{\text {® }}$ (2,4-DB 500) | 4 | 15-33 | L/ha | >80 | 2.1-3.2 | - | 2.1-3.2 | - | 2.1-3.2 | - | 2.1-3.2 | - | 2.1-3.2 | - | 2.1-3.2 |
| Ecopar ${ }^{\circledR}$ (pyraflufenethyl 20) | 14 | 12-29 | L/ha | $\begin{aligned} & 70- \\ & 150 \end{aligned}$ | - | 0.4* | - | - | 0.4-0.8 | - | 0.4* | - | 0.4-0.8 | - | - |
| Enforcer 242 (picloram 26 + MCPA 420) Triticale only | 4 | 22-30 | L/ha | >50 | - | - | - | - | 1.0 | 1.0 (S) | - | - | - | - | - |
| $\begin{aligned} & \text { FallowBoss }^{\ominus} \text { Tordon }{ }^{\ominus} \text { (2,4-D } \\ & \text { amine } 300+\text { picloram } 75+ \\ & \text { aminopyralid 7.5) } \\ & \hline \end{aligned}$ | 4 | 14-31 | L/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | - | - | - | 0.3* | 0.3* | 0.3 | - | - | - | - | - |
| Flight ${ }^{\oplus}$ EC (picolinafen 35 + bromoxynil $210+$ MCPA 350) | $\begin{aligned} & 6+ \\ & 12 \\ & +4 \end{aligned}$ | 13-28 | L/ha | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | - | - | - | - | $\begin{gathered} 0.36- \\ 0.72 \end{gathered}$ | - | - | - | $\begin{aligned} & 0.3- \\ & 0.72 \end{aligned}$ | - | $\begin{aligned} & 0.36- \\ & 0.72 \end{aligned}$ |
| Grindstone ${ }^{\bullet}$ (aminopyralid 240) | 4 | 13-31 | mL/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | - | 16 | - | - | 16 | 22 | - | - | 16-32 | - | - |
|  |  |  |  |  | - | - | - | - | - | - | - | - | - | - | - |
| Hotshot $^{\oplus}$ (aminopyralid 10 <br> + fluroxypyr 140) <br> Triticale only | 4 | 13-31 | L/ha | >80 | - | - | - | - | - | - | - | - | 0.75 | - | - |


| - | - | 20 | - | - | - | - | - | - | - | - | $\begin{gathered} 15 \text { or } \\ 20 \end{gathered}$ | 15 | 20 | Rate, plant backs and crop safety are heavily influenced by soil pH ; refer label. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| - | - | - | 100* | 100* | - | - | - | - | - | 100 (S) | 100* | 100 | 100 | *Requires mix partner; refer label. Adjuvant: always use NIS 1000 0.25\%. |
| - | - | - | - | - | - | - | - | - | - | - | 20 | 20 | - | Rate, plant backs and crop safety are heavily influenced by soil pH ; refer label. Adjuvant MSO 1-2\%. |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| - | - | - | 85 | 85 | - | - | - | - | $\begin{aligned} & 85- \\ & 100 \end{aligned}$ | 85* | 100 | 85 | 85 | Add minimum of $330 \mathrm{~mL} / \mathrm{ha}$ MCPA 750. <br> *Add dicamba. |
| 7 (S) | 5 | 5 | 5 | 5 or 7 | - | - | - | - | - | - | - | 5 | 5 or 7 | Tank mix partners will broaden the weed spectrum; refer label. |
| - | - | - | - | $\stackrel{0.75-}{1.0}$ | - | - | - | - | - | - | $\stackrel{0.75-}{1.0}$ | - | $\begin{gathered} 0.75- \\ 1.0 \end{gathered}$ | *Rate increases with crop growth; refer label. |
| - | 2.1 | - | - | 1.4 | 1.4 | 1.4 | - | 1.4-2.1 | - | - | 1.4 | 1.4 | 1.4 | Add 2,4-D amine or MCPA LVE; refer label. |
| 1.0 (S) | 1.0 (S) | - | 1.0 (S) | $0.5-$ | 1.0 | - | - | 1.0 | 1.0 (S) | 1.0 (S) | $\begin{gathered} 0.5-1.0 \\ \text { or } 0.5^{*} \end{gathered}$ | $\begin{aligned} & 0.5- \\ & 0.75 \end{aligned}$ | 1.0 | *Add MCPA LVE. Can cause transient yellowing. |
| - | - | - | 1.0-1.5 | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | 1.0-1.43 | $\begin{aligned} & 1.0- \\ & 1.4 \end{aligned}$ | - | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | - | - | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | $\begin{aligned} & 1.0- \\ & 1.4 \end{aligned}$ | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | Application rate increases with crop growth and weed size; refer label. Do not spray if temperature is $>20^{\circ} \mathrm{C}$. |
| - | - | - | 2.1-3.2 | 2.1-3.2 | 2.1-3.2 | 2.1-3.2 | 2.1-3.2 | 2.1-3.2 | - | - |  | 2.1-3.2 | 2.1-3.2 |  |
| - | 0.4* | 0.4* | 0.4* | 0.4* | - | - | - | - | - | - | 0.3-0.8 | 0.4-0.8 | 0.4* | $400 \mathrm{~mL} / \mathrm{ha}$ is the maximum rate at Z12. Always add MCPA amine 750. *Add $5 \mathrm{~g} /$ ha metsulfuronmethyl 600. |
| 1.0 | - | - | 1.0 | 1.0 | 1.0 | - | - | 1.0 | - | - | 1.0 | 1.0 | 1.0 (S) |  |
| - | - | - | 0.3 | 0.3 | 0.3 | - | - | 0.3* | - | - | 0.3* | 0.3* | 0.3* (S) | Northern NSW only.*Add 2,4-D amine. Adjuvant: NIS 1000. |
| - | - | - | $\begin{aligned} & 0.72 \\ & (\mathrm{~S}) \end{aligned}$ | $\begin{aligned} & 0.72 \\ & (\mathrm{~S}) \end{aligned}$ | 0.72 | - | - | - | 0.72 | - | $\begin{gathered} 0.36- \\ 0.72 \end{gathered}$ | $\begin{gathered} 0.36- \\ 0.72 \end{gathered}$ | - | Rates increase with weed size and crop growth stage; refer label. |
| - | - | - | 20-32 | 16-32 | 16 | - | - | 16-32 | - | 32 | - | 16 | 16-32 | Northern NSW only. Must have a mix partner. Crop growth stage and rate are determined by mix partner; refer label. |
| - | - | - | - | - | - | - | - | - | - | 20 | - | - | - | Southern NSW only. Add fluroxypyr; refer label. |
| - | - | - | $\begin{aligned} & 0.5- \\ & 0.75^{*} \end{aligned}$ | $\begin{aligned} & 0.5- \\ & 0.75^{*} \end{aligned}$ | - | - | - | $\begin{aligned} & 0.5- \\ & 0.75^{*} \end{aligned}$ | - | 0.75 | - | - | $\begin{aligned} & 0.5- \\ & 0.75^{*} \end{aligned}$ | *Add a mix partner; refer label. |

Table 22. Herbicides for weed control for cereal rye and triticale - early post-emergence - page 4 of 4 .

| Note: example trade names shown. Others may be available at different concentrations. See labels for details. |  | 든 응 은 융 |  |  |  | $\frac{\stackrel{y}{\partial}}{\stackrel{y}{0}}$ |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Igran ${ }^{\ominus}$ Flowable (terbutryn 500) Triticale only | 5 | 13-21 | L/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | - | 0.44* | $\begin{gathered} 0.44- \\ 0.6^{*} \end{gathered}$ | - | $\begin{aligned} & 0.33- \\ & 0.44^{*} \\ & \text { or } \\ & 0.55- \\ & 0.85 \wedge \end{aligned}$ | - | $\begin{gathered} 0.55- \\ 0.85 \end{gathered}$ | - | - | - | 0.44* |
| Kambå 750 (dicamba 750) | 4 | 15-30 | mL/ha | >50 | - | - | - | 185* | $\begin{gathered} 105^{*} \\ \text { or } \\ 185 \wedge \end{gathered}$ | 185 | - | - | - | - | - |
| Kamba ${ }^{\oplus}$ M (MCPA $340+$ dicamba 80) | 4 | 21-30 | L/ha | >50 | - | - | - | 1.7 | 1.0-1.7 | 1.7 | - | - | - | - | - |
| Legacy ${ }^{\oplus}$ MA (diflufenican 25 + MCPA 250) | $\begin{aligned} & 4+ \\ & 12 \end{aligned}$ | 13-30 | L/ha | >50 | - | - | - | - | 0.5-1.0 | - | 1.0 (S) | 1.0 (S) | 0.5-1.0 | 1.0 (S) | 0.5-1.0 |
| Lontrel ${ }^{\ominus}$ Advanced (clopyralid 600) Triticale only | 4 | 13-30 | mL/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | - | 50* | - | - | - | - | - | - 50 | 50-75* | - | - |
| MCPA amine 750 | 4 | 12-14 | L/ha | $\begin{aligned} & 30- \\ & 120 \end{aligned}$ | - | - | - | - | $\begin{gathered} 0.33- \\ 0.46 \end{gathered}$ | - | - | - | - | - | - |
|  |  | 15-37 |  |  | - | - | - | 1.35 | 0.66 | - | $\begin{gathered} 0.66- \\ 0.96 \end{gathered}$ | - | - 0 | $\begin{gathered} 0.46- \\ 0.96 \end{gathered}$ | - |
| MCPA LVE 570 | 4 | 13-37 | L/ha | $\begin{aligned} & 30- \\ & 120 \end{aligned}$ | - | - | - | - | $\begin{gathered} 0.49- \\ 0.88 \end{gathered}$ | - | 1.49 | - | - | - | - |
| Paradigm® (florasulam 200 <br> + halauxifen 200) <br> Triticale only | $2+4$ | 13-37 | g/ha | $\begin{aligned} & 80- \\ & 100 \end{aligned}$ | 25 | 25* | 25 | - | 25* | - | - | - | 25* | - | 25* |
|  |  | $\begin{gathered} 31-43^{*} \text { or } \\ 31-49 \end{gathered}$ |  |  | 25 | - | 25 | - | - | - | - | - | - | - | - |
| Pixxaro® (fluroxypyr 250 + halauxifen 16.25) <br> Triticale only | 4 | 13-39 | L/ha | >80 | 0.3 | 0.3 | 0.2-0.3 | - | - | - | - | - | 0.4 | - | - |
| Precept ${ }^{\ominus}$ (MCPA 125 + pyrasulfotole 25) | $\begin{aligned} & 4+ \\ & 27 \end{aligned}$ | 13-31 | L/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | - | $\begin{gathered} 2.0 \text { or } \\ 1.0^{*} \end{gathered}$ | - | - | 1.0-2.0 | - | 1.0-2.0 | - | 1.0-2.0 | - | - |
| Quadrant ${ }^{\circ}$ (MCPA ester $250+$ Bromoxyni 1240 + diflufenican 20 picolinafen 10) | $\begin{aligned} & 4+6 \\ & +12 \end{aligned}$ | 13-28 | L/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | 1.0 (S) | - | 0.8-1.0 | 0.8-1.0 | 0.6-1.2 | - | 0.8-1.2 | 1.2 | 0.6-1.2 | $\begin{aligned} & 0.8- \\ & 1.2 \end{aligned}$ | 0.6-1.2 |
| Starane ${ }^{\oplus}$ Advanced (fluroxypyr 333) Triticale only | 4 | 13-39 | L/ha | >50 | - | - | - | - | $\begin{aligned} & 0.3- \\ & 0.9^{*} \end{aligned}$ | - | - | - 0 | 0.3-0.6 | - | $\begin{aligned} & 0.3- \\ & 0.9^{*} \end{aligned}$ |
| $\begin{aligned} & \text { Trezac (aminopyralid } \\ & 25+\text { halauxifen } 30+ \\ & \text { cloquintocet-mexyl } 30 \text { ) } \\ & \text { Triticale only } \end{aligned}$ | 4 | 13-31 | mL/ha | >80 | 200* | 200 | 200 | - | - | - | - | - | 200* | - | - |
| Triasulfuron 750 <br> Triticale only | 2 | 13-22 | g/ha | $\begin{aligned} & 30- \\ & 100 \end{aligned}$ | - | 10 | 10-13 | - | 6.5-10 | - | - | - | - | - | 10 |
| Triathlon ${ }^{\ominus}$ (MCPA 250 + bromoxynil 150 + diflufenican 25) | $\begin{aligned} & 4+6 \\ & +12 \end{aligned}$ | 13-30 | L/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | 1.0 (S) | - | - | - | 0.5-1.0 | - | 1.0 (S) | 1.0 (S) | 0.5-1.0 | 1.0 (S) | 0.5-1.0 |
| Velocity ${ }^{\text {® }}$ (pyrasulfotole 37.5 + bromoxynil 210) | $\begin{aligned} & 27 \\ & +6 \end{aligned}$ | 12-31 | L/ha | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | - | $\begin{aligned} & 0.5(\mathrm{~S}) \\ & 0.67- \\ & 1.0 \end{aligned}$ | - | - | 0.5-1.0 | - | 0.5-1.0 | - 0 | 0.5-1.0 | - | 0.5-1.0 |

[^8]non-ionic surfactant.

|  | $\begin{aligned} & \overline{0} \\ & \text { ì } \end{aligned}$ | $\begin{aligned} & \circ \\ & \text { oin } \\ & \text { in } \\ & 0 \end{aligned}$ |  |  |  |  |  |  |  | $\begin{aligned} & \stackrel{5}{y} \\ & \stackrel{2}{0} \end{aligned}$ | $\frac{5}{n}$ <br> $\frac{5}{6}$ <br> $\frac{\pi}{0}$ <br> $\frac{0}{3}$ | $\begin{aligned} & \text { 을 } \\ & \frac{3}{3} \\ & \frac{0}{3} \end{aligned}$ |  | Comments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| - | - | - | - | $\begin{aligned} & 0.55- \\ & 0.85^{*} \end{aligned}$ | - | - | - | - | $\begin{gathered} 0.55- \\ 0.85 \end{gathered}$ | 0.6* | $\begin{gathered} 0.44- \\ 0.6^{*} \end{gathered}$ | $\begin{aligned} & 0.33- \\ & 0.44^{*} \\ & \text { or } \\ & 0.55- \\ & 0.85 \wedge \end{aligned}$ | - ${ }^{*}$ | *Add Triasulfuron 750. <br> ^Add MCPA or 2,4-D. |
| - | 1.0 | - | - | $\begin{gathered} 185 \text { or } \\ 105^{*} \end{gathered}$ | 185^ | - | - | - | - | $\begin{gathered} 185 \text { or } \\ 105^{*} \end{gathered}$ | 105* | $\begin{gathered} 185 \wedge \\ \text { or105* } \end{gathered}$ | $\begin{gathered} 185 \text { or } \\ 105^{*} \end{gathered}$ | *Add MCPA amine. <br> $\wedge$ Add MCPA or 2,4-D amine. |
| - | 1.0-1.7 | - | - | 1.0-1.7 | 1.7 | - | - | 1.7 | - | 1.0-1.7 | 1.0-1.7 | 1.0-1.7 | 1.0-1.7 |  |
| 1.0 (S) | - | - | 1.0 (S) | 1.0 (S) | 1.0 | - | - | 1.0 (S) | 1.0 | 1.0 (S) | 0.5-1.0 | 0.5-1.0 | $\begin{aligned} & 0.75 \\ & (\mathrm{~s}) \end{aligned}$ | Application rate increases with crop growth and weed size; refer label. Add MCPA for radish control. |
| 250* | - | - | 50* | - | 25* | 25* | 25* | 25* | - | 40-50* | - | - | - | Rates and timing are determined by weed size and mix partner. *There are many mix partners; refer label. |
| - | - | - | - | 0.33 | - | - | - | - | - | - | $\begin{gathered} 0.33- \\ 0.46 \end{gathered}$ | $\begin{aligned} & 0.33- \\ & 0.46 \end{aligned}$ | - U | Use the low rate and add Diuron ${ }^{\circledR}$ 900 for control of small weeds. |
| $\begin{gathered} 0.96- \\ 1.35 \end{gathered}$ | - | - | - | - | $\begin{aligned} & 0.66- \\ & 1.35 \end{aligned}$ | $\begin{aligned} & 0.66- \\ & 1.35 \end{aligned}$ | $\begin{gathered} 0.96- \\ 1.35 \end{gathered}$ | $\begin{array}{\|c\|} \hline 0.66- \\ 1.35 \\ \hline \end{array}$ | - | - | 0.66 | 0.66 | - | Application rate increases with crop growth and weed size; refer label. |
| $\begin{gathered} 0.965- \\ 1.4 \end{gathered}$ | - | - | - | - | $\begin{aligned} & 0.965- \\ & 1.7 \end{aligned}$ | 1.8 | - | $\begin{aligned} & 0.74- \\ & 0.96 \end{aligned}$ | - | - | $\begin{gathered} 0.965- \\ 1.4 \end{gathered}$ | $\begin{gathered} 0.615- \\ 0.965 \end{gathered}$ | - | Application rate increases with crop growth and weed size; refer label. |
| - | - | - | 25* | 25* | - | - | - | - | 25 (S) | 25* | 25* | 25* | - ${ }^{*}$ | *Add MCPA LVE. Rate of mix partner changes with crop growth stage; refer label. Adjuvant: refer label. |
| - | - | - | - | - | - | - | - | - | 25 (S) | - | $\begin{gathered} 25 \text { or } \\ 25^{*} \end{gathered}$ | - | - * | *Add 0.8-1.2 L/ha 2,4-D amine 720. <br> Adjuvant: refer label. |
| - | - | - | 0.4 | - | - | - | - | - | - | - | - | - | - | Adjuvant: MOS 0.5\%. |
| - | - | - | 1.0-2.0 | $\stackrel{1.5-2.0}{(S)}$ | - | - | - | - | - | 1.0* | 1.0-2.0 | 1.0-2.0 | 1.0-2.0 | *Add clopyralid for control. Adjuvant: AMS, MSO 0.5-1\%, MOS 0.5-0.75\%. |
| 1.0 (S) | 0.8-1.0 | - | 1.2 | 0.8-1.2 | 0.8-1.0 | 0.8-1.0 | - | 1.2 | 0.8-1.0 | 1.0 (S) | 0.6-1.2 | 0.6-1.2 | 0.8-1.2 | Rate is dictated by weed size; refer label. Transient yellowing might occur. Temperature $>20^{\circ} \mathrm{C}$ can increase effects. |
| - | - | - | 0.6 | $\begin{gathered} 0.9 \text { or } \\ 0.3^{*} \end{gathered}$ | - | - | - | - | - | - | $\begin{aligned} & 0.3- \\ & 0.9^{*} \end{aligned}$ | $\begin{aligned} & 0.3- \\ & 0.9^{*} \end{aligned}$ | 0.3* | Add partner; refer label. <br> Adjuvant: weed specific; refer label. |
| - | - | - | 200^ | 200^ | - | - | - | 200^ | - | 200 | - | - | - * | *Add fluroxypyr. <br> ^Add fluroxypyr + MCPA LVE. <br> Adjuvant: MOS 0.5\%. |
| - | - | - | - | - | - | - | - | - | - | - | 6.5-13 | 6.5 | - | Add terbutryn. |
| 1.0 (S) | - | - | 1.0 (S) | 1.0 (S) | 1.0 | - | - | 1.0 (S) | 1.0 | 1.0 (S) | 0.5-1 | 0.5-1 | $\begin{aligned} & 0.75 \\ & (\mathrm{~S}) \end{aligned}$ | Transient yellowing might occur. |
| - | - | - | 0.5-1.0 | 0.5-1.0 | 0.67-1.0 | - | - | - | - | $\begin{gathered} 0.5-1.0 \\ (S) \end{gathered}$ | 0.5-1.0 | 0.5-1.0 | $\begin{aligned} & 0.5(\mathrm{~S} \\ & 0.67- \\ & 0.67 \end{aligned}$ | Add LVE MCPA for control; refer label. |

NIS products might indicate a specific concentration (i.e. NIS 1000); refer to adjuvant chart for example products.

Table 23．Herbicides for weed control for cereal rye and triticale－late post－emergence－page 1 of 2.

| Note：example trade names shown．Others may be available at different concentrations．See labels for details． |  |  |  |  | $\begin{aligned} & \text { 弒 } \\ & \stackrel{\rightharpoonup}{n} \\ & \stackrel{y}{4} \end{aligned}$ |  |  |  | $\begin{aligned} & \text { ठ्ष } \\ & \sum_{0}^{0} \\ & \text { iٍ } \end{aligned}$ |  |  | $\begin{aligned} & \frac{\pi}{\omega} \\ & \stackrel{0}{0} \\ & \text { UU } \end{aligned}$ | $\overline{0}$ 0 0 0 0 0 등 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2，4－D amine $700 \mathrm{~g} / \mathrm{L}$ | 4 | 31－43 | L／ha | 50－250 | 0.98 | － | 0.98 | － | $\begin{gathered} 0.98- \\ 1.5 \end{gathered}$ | $\begin{aligned} & 0.5- \\ & 1.25 \end{aligned}$ | － | － | － |
| 2，4－D LV ester 680 | 4 | 31－37 | L／ha | 30－100 | － | － | － | － | $\begin{gathered} 0.53- \\ 0.8 \end{gathered}$ | 0.41 | － | － | 0.8 |
| Affinity ${ }^{8}$ Force （carfentrazone 240） | 14 | ＞13 | mL／ha | 50－150 | － | － | 85 | $\begin{aligned} & 85- \\ & 100 \end{aligned}$ | 85 | － | － | $\begin{aligned} & 85- \\ & 100^{*} \end{aligned}$ | $\begin{aligned} & 85- \\ & 100 \end{aligned}$ |
| Broadstrike ${ }^{\text {® }}$ （flumetsulam 800） | 2 | 61－83 | g／ha | 50－150 | 25 | 25 | － | 25 | 25＊ | 25 | － | － | － |
| Lontrel ${ }^{\ominus}$ Advanced （clopyralid 600） Triticale only | 4 | 13－45 | L／ha | 50－100 | － | － | － | － | － | － | － | － | － |
| MCPA amine 750 Triticale only | 4 | 15－37 | L／ha | 30－120 | － | － | $\begin{gathered} 0.97- \\ 1.35 \end{gathered}$ | $\begin{gathered} 0.66- \\ 0.96 \end{gathered}$ | 1.45 | 0.66 | － | － | － |
| MCPA LVE 570 | 4 | 15－39 | L／ha | 30－120 | － | － | － | 1.3 | 1.49 | $\begin{gathered} 0.44- \\ 1.4 \end{gathered}$ | － | － | － |
| $\begin{aligned} & \text { Paradigm © (florasulam } 200 \\ & \text { +halauxifen 200) } \\ & \text { Triticale only } \end{aligned}$ | $2+4$ | 13－37 | g／ha | 80－100 | － | 25＊ | － | 25＊ | 25＊${ }^{\text {（ })}$ | － | 25＊ | － | － |
|  |  | $\begin{gathered} 31-43^{*} \\ \text { or } \\ 31-49 \end{gathered}$ |  |  | － | － | － | － | － | － | $\begin{gathered} 25 \text { or } \\ 25^{*} \end{gathered}$ | － | － |
| Pixxaro ${ }^{\circ}$（fluroxypyr $250+$ <br> halauxifen 16．25） <br> Triticale only | 4 | 13－39 | L／ha | ＞80 | － | 0.4 | 0．4－0．6 | － | － | － | 0.4 | － | － |

Key：$I M I=$ imidazoline tolerant varieties， $\mathrm{NR}=$ not required，$(\mathrm{S})=$ suppression only
Adjuvant key：MO＝mineral oil，MOS＝mineral oil plus surfactant，MSO＝methylated seed oil，NIS＝non－ionic surfactant．
NIS products might indicate a specific concentration（i．e．NIS 1000）；refer to adjuvant chart for example products．

## Read the label before using a product．

|  | 蒿 |  |  |  | $\stackrel{2}{末}$ <br> $\frac{0}{\#}$ <br> $\frac{\pi}{4}$ |  |  |  |  | $\frac{\tilde{y}}{\overline{0}}$ |  | Comments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| － | $\begin{gathered} 0.98- \\ 1.25 \end{gathered}$ | 1.25 | － | － | 1.5 | 0．5－1．5 | － | $\begin{gathered} 0.715- \\ 1.5 \end{gathered}$ | － | － | 1.25 |  |
| 0.8 | － | 0.8 | － | － | － | 0.8 | － | $\begin{gathered} 0.41- \\ 0.8 \end{gathered}$ | － | － | 0.8 |  |
| － | － | $\begin{aligned} & 85- \\ & 100 \end{aligned}$ | 85＊ | 85＊ | － | 85 | 85＊ | 85＊ | $\begin{aligned} & 65- \\ & 100 \end{aligned}$ | － | － | Add minimum of $330 \mathrm{~mL} / \mathrm{ha}$ MCPA 750. <br> ＊Add dicamba． |
| 25 （S）＊ | － | － | － | － | － | － | － | 25 | 15／25＊ | － | － | ＊Apply with a partner herbicide；refer label．Adjuvant：MOS $0.5 \%$ or NIS $0.2 \%$ ， NIS 0．2\％． |
| － | － | － | － | － | － | － | － | － | － | － | － | Add MCPA LVE． |
| 1.45 | － | － | － | － | － | 0.93 | － | － | － | － | － | Application rate increases with crop growth and weed size；refer label． |
| $\begin{aligned} & 0.44- \\ & 0.66^{*} \end{aligned}$ | － | － | － | － | － | $\begin{gathered} 0.44- \\ 0.66^{*} \\ \text { or } \\ 0.965 \end{gathered}$ | － | － | － | － | － | ＊Add Frequency． <br> Application rate increases with crop growth and weed size；refer label． |
| 25 | － | － | 25＊ | 25＊ | 25＊ | 25 | 25＊ | 25＊ | 25 | 25＊ | 25 | ＊Add MCPA LVE．Rate of mix partner changes with crop growth stage；refer label．Adjuvant：refer label． |
| 25 | － | － | － | － | － | 25 | － | － | 25 | － | 25 | ＊Add 0．8－1．2 L／ha 2，4－D amine 720. Adjuvant：refer label． |
| 0．2－0．3 | － | － | － | － | 0.3 | 0.3 | － | － | 0.3 | 0.3 | 0．2－0．3 | Adjuvant：MOS 0．5\％． |

Table 23. Herbicides for weed control for cereal rye and triticale - late post-emergence - page 2 of 2.

| Note: example trade names shown. Others may be available at different concentrations. See labels for details. |  |  |  |  |  | $\begin{aligned} & \text { n n } \\ & \text { 亮 } \\ & \sum_{n}^{n} \end{aligned}$ |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2,4-D amine $700 \mathrm{~g} / \mathrm{L}$ | 4 | 31-43 | L/ha | 50-250 | 0.8-0.9 | $\begin{aligned} & 0.5- \\ & 1.25 \end{aligned}$ | $\begin{gathered} 0.98- \\ 1.5 \end{gathered}$ | - | - | - | 0.98 | $\begin{gathered} 0.98- \\ 1.5 \end{gathered}$ |
| 2,4-D LV ester 680 | 4 | 31-37 | L/ha | 30-100 | 0.8 | $\begin{gathered} 0.41- \\ 0.8 \end{gathered}$ | 0.8 | 0.8 | - | - | 0.8 | 0.8 |
| Affinity ${ }^{\bullet}$ Force (carfentrazone 240) | 14 | >13 | $\mathrm{mL} / \mathrm{ha}$ | 50-150 | - | 85-100 | - | 65-100 | - | 85 | 85 | 85 |
| Broadstrike ${ }^{\circ}$ (flumetsulam 800) | 2 | 61-83 | g/ha | 50-150 | - | 25 | - | $\begin{aligned} & 25(\mathrm{~S}) \\ & \text { or } 25^{*} \end{aligned}$ | $\begin{aligned} & 25(\mathrm{~S}) \\ & \text { or } 25^{*} \end{aligned}$ | - | - | 25 |
| Lontre ${ }^{\ominus}$ Advanced <br> (clopyralid 600) <br> Triticale only | 4 | 13-45 | L/ha | 50-100 | - | - | - | - | - | 75 | - | - |
| MCPA amine 750 Triticale only | 4 | 15-37 | L/ha | 30-120 | 1.35 | 0.66 | - | $\begin{gathered} 0.66- \\ 0.96 \end{gathered}$ | - | - | $\begin{aligned} & 0.46- \\ & 0.96 \end{aligned}$ | - |
| MCPA LVE 570 | 4 | 15-39 | L/ha | 30-120 | - | $\begin{gathered} 0.49- \\ 0.88 \end{gathered}$ | - | 1.49 | - | - | - | $\begin{aligned} & 0.44- \\ & 0.66^{*} \end{aligned}$ |
| Paradigm ${ }^{\ominus}$ (florasulam 200 <br> + halauxifen 200) <br> Triticale only | $2+4$ | 13-37 | g/ha | 80-100 | - | 25* | - | - | - | 25* | - | 25* |
|  |  | $\begin{gathered} 31-43^{*} \\ \text { or } \\ 31-49 \end{gathered}$ |  |  | - | - | - | - | - | - | - | - |
| Pixxaro ${ }^{\circ}$ (fluroxypyr 250 + <br> halauxifen 16.25) <br> Triticale only | 4 | 13-39 | L/ha | >80 | - | - | - | - | - | 0.4 | - | - |

Key: $I M I=$ imidazoline tolerant varieties, $\mathrm{NR}=$ not required, $(\mathrm{S})=$ suppression only
Adjuvant key: $\mathrm{MO}=$ mineral oil, $M O S=$ mineral oil plus surfactant, $\mathrm{MSO}=$ methylated seed oil, NIS $=$ non-ionic surfactant.
NIS products might indicate a specific concentration (i.e. NIS 1000); refer to adjuvant chart for example products.

|  | $\begin{aligned} & \bar{\omega} \\ & \text { ù } \end{aligned}$ |  | $\begin{aligned} & \stackrel{\text { ® }}{\oplus} \\ & \stackrel{y}{0} \\ & \stackrel{\rightharpoonup}{\widehat{n}} \\ & \text { in } \end{aligned}$ |  |  | Thistle - spear/black |  |  | $\stackrel{\substack{y \\ \cline { 1 - 1 }}}{ }$ | 咅 $\frac{0}{7}$ $\frac{0}{0}$ $\frac{0}{3}$ | $\begin{aligned} & \text { 을 } \\ & \frac{3}{1} \\ & \frac{0}{3} \\ & \hline \end{aligned}$ | $\begin{aligned} & \text { 밈 } \\ & \stackrel{y}{3} \\ & \stackrel{\rightharpoonup}{3} \end{aligned}$ | Comments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{gathered} 0.98- \\ \hline 1.5 \end{gathered}$ | $\begin{gathered} 1.25- \\ 1.5 \end{gathered}$ | $\begin{gathered} 1.25- \\ 1.5 \end{gathered}$ | 1.25 | 0.5-1.5 | $\stackrel{0.715-}{1.5}$ | $\begin{aligned} & 0.5- \\ & 1.45 \end{aligned}$ | 0.5-1.5 | - | $\begin{gathered} 0.98- \\ 1.25 \end{gathered}$ | $\begin{gathered} 0.715- \\ 1.5 \end{gathered}$ | $\begin{aligned} & 0.5- \\ & 1.25 \end{aligned}$ | 1.25 |  |
| 0.8 | - | - | - | $\begin{gathered} 0.41- \\ 0.8 \end{gathered}$ | 0.8 | 0.8 | 0.8 | - | - | $\begin{gathered} 0.41- \\ 0.8 \end{gathered}$ | $\begin{array}{\|c} 0.41- \\ 0.8 \end{array}$ | 0.8 |  |
| - | - | 85 | 85 | - | - | - | - | $\begin{aligned} & 85- \\ & 100 \end{aligned}$ | 85* | 100 | 85 | 85 | Add minimum of $330 \mathrm{~mL} / \mathrm{ha}$ MCPA 750 . <br> *Add dicamba. |
| - | - | - | 25* | - | - | - | - | - | - | $\begin{aligned} & 15^{*} \text { or } \\ & 25(\mathrm{~S}) \end{aligned}$ | 15-25 | - | *Apply with a partner herbicide; refer label. Adjuvant: MOS $0.5 \%$ or NIS $0.2 \%$, NIS $0.2 \%$. |
| - | - | - | - | 25 | 25 | 25 | 25 | - | 40 | - | - | - | Add MCPA LVE. |
| $\begin{gathered} 0.96- \\ 1.35 \end{gathered}$ | - | - | - | $\begin{aligned} & 0.66- \\ & 1.35 \end{aligned}$ | $\begin{gathered} 0.66- \\ 1.35 \end{gathered}$ | $\begin{aligned} & 0.96- \\ & 1.35 \end{aligned}$ | $\begin{gathered} 0.66- \\ 1.35 \end{gathered}$ | - | - | 0.66 | 0.66 | - | Application rate increases with crop growth and weed size; refer label. |
| $\begin{gathered} 0.965- \\ 1.4 \end{gathered}$ | - | $\begin{aligned} & 0.44- \\ & 0.66^{*} \end{aligned}$ | - | $\begin{gathered} 0.965- \\ 1.7 \end{gathered}$ | 1.8 | - | $\begin{gathered} 0.74- \\ 0.96 \end{gathered}$ | - | - | $\begin{gathered} 0.44- \\ 0.66^{*} \\ \text { or } \\ 0.965- \\ 1.4 \end{gathered}$ | $\begin{gathered} 0.44- \\ 0.66^{*} \\ \text { or } \\ 0.615- \\ 0.965 \end{gathered}$ | $\begin{aligned} & 0.44- \\ & 0.66^{*} \end{aligned}$ | *Add Frequency ${ }^{\text {e }}$. <br> Application rate increases with crop growth and weed size; refer label. |
| - | - | 25* | 25* | - | - | - | - | 25 (S) | 25* | 25* | 25* | - | *Add MCPA LVE. Rate of mix partner changes with crop growth stage; refer label. Adjuvant: refer label |
| - | - | - | - | - | - | - | - | 25 (S) | - | $\begin{gathered} 25 \text { or } \\ 25^{*} \end{gathered}$ | - | - | *Add 0.8-1.2 L/ha 2,4-D amine 720. Adjuvant: refer label. |
| - | - | 0.4 | - | - | - | - | - | - | - | - | - | - | Adjuvant: MOS 0.5\%. |


| Note: example trade names shown. Others may be available at different concentrations. See labels for details. |  |  |  |  |  |  |  |  |  | $\begin{aligned} & \stackrel{n}{0} \\ & \frac{0}{2} \\ & \frac{0}{3} \end{aligned}$ |  |  |  |  |  |  |  | \# \# ¢ ¢ ÓN |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Imidazoline tolerant (CL) canola varieties only |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Sentry ${ }^{\circ}$ (imazapic $525+$ imazapyr 175) | 2 | IBS | g/ha | 70 | $\begin{gathered} 40- \\ 50(\mathrm{~S}) \end{gathered}$ | $\begin{aligned} & 40- \\ & 50(S) \end{aligned}$ | $\begin{aligned} & 40- \\ & 50 \end{aligned}$ | $\begin{aligned} & 40- \\ & 50 \end{aligned}$ | - | $\begin{gathered} 40- \\ 50(\mathrm{~S}) \end{gathered}$ | - | - | $\begin{aligned} & 40- \\ & 50 \end{aligned}$ | $\begin{gathered} 40- \\ 50(S) \end{gathered}$ | - | - | - | - |
| Triazine-tolerant (TT) canola varieties only |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Atrazine 900 | 5 | $\begin{aligned} & \text { PSI, } \\ & \text { IBS, } \\ & \text { PSPE } \end{aligned}$ | kg/ha | 55 | - | $\begin{array}{\|c\|} \hline 1.1- \\ 2.2 \\ (S) \\ \hline \end{array}$ | $\begin{aligned} & 1.1-1- \\ & 2.2 \\ & (S) \end{aligned}$ | $\begin{aligned} & 1.1-1- \\ & 2.2 \\ & (S) \end{aligned}$ | $\begin{aligned} & 1.1-1- \\ & 2.2 \end{aligned}$ | $\begin{array}{\|l\|} \hline 1.1- \\ 2.2 \\ (5) \\ \hline \end{array}$ | - | - | - | $\begin{aligned} & 1.1- \\ & 2.2 \end{aligned}$ | $\begin{aligned} & 1.1- \\ & 2.2 \end{aligned}$ | - | $\begin{aligned} & 1.1- \\ & 2.2 \end{aligned}$ | - |
| Simazine 900 | 5 | PSI, <br> IBS, <br> PSPE | kg/ha | $\begin{aligned} & 50- \\ & 200 \end{aligned}$ | - | $\begin{aligned} & 1.1-1 \\ & 2.2 \\ & (s) \\ & \hline \end{aligned}$ | $\begin{aligned} & 1.1-1- \\ & 2.2 \\ & (S) \end{aligned}$ | $\begin{aligned} & 1.1-1- \\ & 2.2 \\ & (S) \end{aligned}$ | $\begin{gathered} 1.1- \\ 2.2 \end{gathered}$ | $\begin{aligned} & 1.1- \\ & 2.2 \\ & (5) \\ & \hline \end{aligned}$ | - | - | - | $\begin{gathered} 1.1- \\ 2.2 \end{gathered}$ | $\begin{gathered} 1.1- \\ 2.2 \end{gathered}$ | - | $\begin{aligned} & 1.1- \\ & 2.2 \end{aligned}$ | - |
| Terbyne ${ }^{\bullet}$ Xtreme ${ }^{\circ}$ (terbuthylazine 875) | 5 | IBS, PSPE | kg/ha | >50 | $\begin{gathered} 0.86- \\ 1.2 \\ (\mathrm{~S}) \end{gathered}$ | $\begin{gathered} 0.86- \\ 1.2 \\ (\mathrm{~S}) \\ \hline \end{gathered}$ | - | - | $\begin{array}{c\|} \hline 0.86- \\ 1.2 \\ \text { (S) } \\ \hline \end{array}$ | $\begin{gathered} 0.86- \\ 1.2 \\ (\mathrm{~S}) \\ \hline \end{gathered}$ | - | - | - | - | - | - | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ |
| All canola varieties |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Avadex ${ }^{\circ}$ Xtra (triallate 500) | 15 | $\begin{aligned} & \text { PSI, } \\ & \text { IBS } \end{aligned}$ | L/ha | 50 | $\begin{aligned} & 1.6- \\ & \text { 4.4* } \end{aligned}$ | $\begin{array}{\|c\|} \hline 3.2 \\ \text { or } \\ 1.6- \\ 2.4^{*} \\ \hline \end{array}$ | $\begin{aligned} & 1.6- \\ & 2.4^{*} \\ & (S) \end{aligned}$ | $\begin{aligned} & 1.6- \\ & 2.4^{*} \\ & (5) \end{aligned}$ | $\begin{aligned} & 1.6- \\ & \\ & \hline 14^{*} \end{aligned}$ | 1.6 | $\begin{aligned} & 1.6- \\ & 2.4^{*} \\ & (S) \end{aligned}$ | - | - | - | -- | - | $\begin{aligned} & 1.6- \\ & \text { 4.4* } \end{aligned}$ | $\begin{aligned} & 1.6- \\ & 2.4^{*} \\ & (S) \end{aligned}$ |
| Devrinol-C® (napropamide 500) | 0 | IBS | kg/ha | Not stated | - | $\begin{gathered} 1.75- \\ 2.25 \end{gathered}$ | - | - | - | - | - | - | - | - | - | - | - | - |
| Dual Gold ${ }^{\circledR}$ <br> (S-metolachlor 960) | 15 | $\begin{aligned} & \text { IBS } \\ & \text { PSE } \end{aligned}$ | L/ha | >60 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Overwatch ${ }^{\circledR}$ <br> (bixlozone 400) | 13 | IBS | L/ha | $\begin{aligned} & 60- \\ & 100 \end{aligned}$ | $\begin{aligned} & 1.25 \\ & (\mathrm{~s}) \end{aligned}$ | 1.25 | $\begin{aligned} & 1.25 \\ & (\mathrm{~S}) \end{aligned}$ | $\begin{aligned} & 1.25 \\ & (\mathrm{~S}) \end{aligned}$ | 1.25 | $\begin{aligned} & 1.25 \\ & (\mathrm{~s} \end{aligned}$ | - | $\begin{aligned} & 1.25 \\ & (\mathrm{~S}) \end{aligned}$ | - | $\begin{aligned} & 1.25 \\ & (S) \end{aligned}$ | - | $\begin{aligned} & 1.25 \\ & \text { (S) } \end{aligned}$ | - | - |
| Rifle ${ }^{\oplus} 440$ <br> (pendimethalin 440) | 3 | IBS | L/ha | $\begin{aligned} & 50- \\ & 200 \end{aligned}$ | - | $\begin{aligned} & 1.5- \\ & 2.25 \end{aligned}$ | - | - | $\begin{aligned} & 1.5- \\ & 2.25 \\ & (5) \\ & (5) \end{aligned}$ | $\begin{gathered} 1.5- \\ 2.25 \\ (\mathrm{~S}) \end{gathered}$ | - | - | - | - | - | - | - | - |
| Rustler ${ }^{\ominus}$ <br> (propyzamide 500) | 3 | IBS | L/ha | $\begin{array}{\|c} \text { Not } \\ \text { stated } \end{array}$ | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | - | - | - | - | - | - | - | - |
| Tenet ${ }^{\ominus}$ <br> (metazachlor 500) | 15 | IBS | L/ha | $\begin{aligned} & 80- \\ & 250 \end{aligned}$ | - | $\begin{gathered} 1.5- \\ 1.8 \end{gathered}$ | 1.8 | 1.8 | - | 1.8 | - | - | - | 1.8 | - | - | - | 1.8 |
| TriflurX® (trifluralin 480) | 3 | $\begin{aligned} & \text { PSI, } \\ & \text { IBS } \end{aligned}$ | L/ha | $\begin{aligned} & 70- \\ & 450 \end{aligned}$ | 1.7 | 1.7 | - | - | - | - | - | - | - | - | - | - | - | - |

Incorporation key: IBS = incorporated by sowing, PSI = pre-sowing incorporated, PSPE = post-sowing, pre-emergent.

## 

| $\left\lvert\, \begin{gathered} 40- \\ 50(S) \end{gathered}\right.$ | - | $\begin{gathered} 40- \\ 50(S) \end{gathered}$ | $\begin{array}{\|c} \hline 40 \text { or } \\ 55 \\ \text { (S) } \\ \hline \end{array}$ | - | $\begin{aligned} & 40- \\ & 50 \end{aligned}$ | $\begin{aligned} & 40- \\ & 50 \\ & 50 \\ & (5) \end{aligned}$ | - | - | - | - | - | - | 40-50 | - | $\begin{aligned} & 40- \\ & 50 \end{aligned}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| - | - | $\begin{aligned} & 1.1-1- \\ & 2.2 \end{aligned}$ | - | - | $\begin{aligned} & 1.1- \\ & 2.2 \end{aligned}$ | $\begin{aligned} & 1.1-1- \\ & 2.2 \end{aligned}$ | - | - | $\begin{aligned} & 1.1-1- \\ & 2.2 \end{aligned}$ | - | 1.1-2.2 | - | $\underset{(\mathrm{S})}{1.1-2.2}$ | $\begin{aligned} & 1.1-1- \\ & 2.2 \end{aligned}$ | - | Do not exceed a total of 3 kg of active ingredient per year. |
| - | - | $\begin{array}{\|c} 1.1- \\ 2.2 \\ \hline \end{array}$ | - | - | $\begin{gathered} 1.1- \\ 2.2 \end{gathered}$ | $\begin{gathered} 1.1- \\ 2.2 \end{gathered}$ | - | - | $\begin{aligned} & 1.1-1- \\ & 2.2 \end{aligned}$ | - | 1.1-2.2 | - | $\begin{gathered} 1.1-2.2 \\ (S) \end{gathered}$ | $\begin{aligned} & 1.1-1- \\ & 2.2 \end{aligned}$ | - | Do not exceed a total of 3 kg of active ingredient per year. |
| - | - | - | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | $\begin{array}{\|c\|} \hline 0.86- \\ 1.2 \end{array}$ | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | - | $\begin{array}{\|c\|} \hline 0.86- \\ 1.2 \end{array}$ | - | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | $\begin{array}{\|c\|} \hline 0.86- \\ 1.2 \end{array}$ | $\begin{aligned} & 0.86- \\ & 1.2(\mathrm{~S}) \end{aligned}$ | $\begin{array}{\|c} 0.86- \\ 1.2 \end{array}$ | $\begin{aligned} & 0.86- \\ & 1.2(\mathrm{~S}) \end{aligned}$ | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | Low rate on lighter soils. Do not exceed $1.2 \mathrm{~kg} /$ ha per crop. |


| - | - | $\begin{aligned} & 1.6- \\ & 2.4^{*} \end{aligned}$ | - | - | - | - | - | $\begin{aligned} & 1.6- \\ & 2.4^{*} \end{aligned}$ | - | - | $\begin{aligned} & 1.6- \\ & 2.4^{*} \\ & (\mathrm{~S}) \end{aligned}$ | - | - | - | $\begin{aligned} & 1.6- \\ & 2.4^{*} \end{aligned}$ | *Add trifluralin 1.5-2.0 L/ha. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| - | - | - | - | - | - | - | - | - | - | $\begin{gathered} 1.75- \\ 2.25 \end{gathered}$ | - | - | - | - | - | Must be incorporated within 4 hours. |
| - | - | - | - | - | - | - | - | - | - | - | - | $\begin{gathered} 0.15- \\ 0.25 \end{gathered}$ | - | - | - |  |
| - | - | - | - | - | - | - | $\begin{aligned} & 1.25 \\ & (\mathrm{~S}) \end{aligned}$ | - | - | 1.25 | - | - | $\begin{aligned} & 1.25 \\ & (\mathrm{~s}) \end{aligned}$ | - | 1.25 | Sow at 15 mm . |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | $\begin{aligned} & 1.5- \\ & 2.25 \\ & 2 . \end{aligned}$ |  |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1.8 | 1.8 | - | - | - | - | - | - | - | 1.8 | 1.8 | - | 1.8 | - | - | 1.8 | Refer to label for soil type and rate interaction. 1 L /ha can be used if mixed with a triazine partner (TT canola only). |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1.7 |  |

Table 25. Herbicides for weed control in canola - post-emergence - page 1 of 2.

| Note: example trade names shown. Others may be available at different concentrations. See labels for details. |  |  |  |  |  |  |  |  |  | $\begin{aligned} & \text { n} \\ & 0 \\ & \frac{0}{3} \end{aligned}$ |  | ? |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Imidazoline tolerant (CL) canola varieties only |  |  |  |  |  |  |  |  |  |  |  |  |
| Intercept ${ }^{\ominus}$ (imazamox $33+$ imazapyr 15) | 2 | 2-6-leaf | L/ha | >70 | - | ${ }_{0.75-}^{0.6-}$ | $\begin{aligned} & 0.6- \\ & 0.75 \end{aligned}$ | $\begin{aligned} & 0.6- \\ & 0.75 \end{aligned}$ | $\begin{gathered} 0.6- \\ 0.75(S) \end{gathered}$ | $\begin{aligned} & 0.6- \\ & 0.75 \end{aligned}$ | - | ${ }_{0.75-}^{0.6-}$ |
| Sentry ${ }^{\otimes}$ (imazapic 525 + imazapyr 175) | 2 | 2-6-leaf | g/ha | 70 | $\begin{gathered} 40 \text { or } \\ 55 \end{gathered}$ | $\begin{aligned} & 40 \text { or } \\ & 55 \text { (S) } \end{aligned}$ | $\begin{gathered} 40 \text { or } \\ 55 \end{gathered}$ | $\begin{gathered} 40 \text { or } \\ 55 \end{gathered}$ | $\begin{aligned} & 40 \text { or } \\ & 55(\mathrm{~s}) \end{aligned}$ | $\begin{gathered} 40 \text { or } \\ 55 \end{gathered}$ | $\begin{gathered} 40 \text { or } \\ 55 \end{gathered}$ | $\begin{gathered} 40 \text { or } \\ 55 \end{gathered}$ |
| Glufosinate-ammonium tolerant (Liberty Link) canola varieties only |  |  |  |  |  |  |  |  |  |  |  |  |
| Liberty ${ }^{\ominus}$ (glufosinateammonium 200) | 10 | 2-leaf to early stem elongation | L/ha | 80-100 | - | $\begin{gathered} 2 \mathrm{fb} 2 \\ \text { or } 3 \\ \mathrm{fb} 3 \end{gathered}$ | $\begin{gathered} 1.5 \mathrm{fb} \\ 1.5 \end{gathered}$ | $\begin{gathered} 1.5 \mathrm{fb} \\ 1.5 \end{gathered}$ | $\begin{gathered} 1.5 \mathrm{fb} \\ 1.5 \end{gathered}$ | $\begin{gathered} 1.5 \mathrm{fb} \\ 1.5 \end{gathered}$ | $\begin{gathered} 1.5 \mathrm{fb} \\ 1.5 \end{gathered}$ | - |
| Triazine-tolerant (TT) canola varieties only |  |  |  |  |  |  |  |  |  |  |  |  |
| Atrazine 900 | 5 | After 2-3leaf | kg/ha | 110 | $0.555-$ | - | - | - | - | - | - | - |
| Terbyne ${ }^{\ominus}$ Xtreme ${ }^{\ominus}$ (terbuthylazine 875) | 5 | Early postemergent | kg/ha | >50 | $\begin{aligned} & 0.66- \\ & 1.2(\mathrm{~S}) \end{aligned}$ | - | - | - | $\begin{aligned} & 0.66- \\ & 1.2(\mathrm{~S}) \end{aligned}$ | - | - | - |
| All canola varieties |  |  |  |  |  |  |  |  |  |  |  |  |
| Diclofop-methyl 375 | 1 | Not stated | L/ha | 80 | - | 1.0 | - | - | - | 1.5-2 |  |  |
| Elantra® ${ }^{\circ}$ Xtreme ${ }^{\ominus}$ (quizalofop-pethyl 200) | 1 | Not stated | mL/ha | >50 | - | $\begin{aligned} & 150- \\ & 190 \end{aligned}$ | 125 | $\begin{aligned} & 150- \\ & 190 \end{aligned}$ | - | $\begin{gathered} 65 \text { or } \\ 125 \end{gathered}$ |  |  |
| Factor® WG (butroxydim 250) | 1 | $\begin{gathered} \text { 4-leaf } \\ \text { to stem } \\ \text { elongation } \end{gathered}$ | g/ha | 50-100 | 80* | 80* | 80* | 80* | - | 80* |  |  |
| ForageMax ${ }^{\oplus}$ (halauxifen $100+$ aminopyralid 50) | 4 | 4-8-leaf | mL/ha | 80-200 | - | - | - | - | - | - | - | - |
| Fusilade ${ }^{\circledR}$ Forte (fluazifop-pethyl 128) | 1 | Not after 6-leaf | L/ha | 50-100 | 0.41 | 0.41 | 0.41 | - | - | 0.41 |  |  |
| Lontrel ${ }^{\ominus}$ Advanced (clopyralid 600) | 4 | 2-8-leaf | mL/ha | 50-100 | - | - | - | - | - | - | - | - |
| Shogun ${ }^{\text {( }}$ (propaquizafop 100) | 1 | Not stated | L/ha | 50-150 | - | 0.45 | 0.2* | 0.3* | - | 0.25* |  |  |
| Status ${ }^{\text {® }}$ (clethodim 240 ) | 1 | Before stem elongation | L/ha | 50-150 | $\begin{gathered} 0.15- \\ 0.5 \end{gathered}$ | $\begin{gathered} 0.15- \\ 0.5 \end{gathered}$ | $\begin{gathered} 0.175- \\ 0.5 \end{gathered}$ | ${\underset{0.5}{0.175-}}_{\substack{0}}$ | $\begin{gathered} 0.25- \\ 0.5 \end{gathered}$ | $\begin{gathered} 0.175- \\ 0.5 \end{gathered}$ |  |  |
| Verdict ${ }^{\circ}$ (haloxyfop 520) Do not use on canola destined for export | 1 | 2-6-leaf before stem elongation | mL/ha | 50-150 | 75-100 | 75-100 | 50-75 | 50-75 | - | $\begin{gathered} 37.5- \\ 100 \end{gathered}$ |  |  |



| - | - | $\begin{aligned} & 0.3- \\ & 0.5- \end{aligned}$ | - | - | - | - | - | $\begin{aligned} & 0.3- \\ & 0.5 \end{aligned}$ | - | - | ^Add clopyralid; refer label for rates. Adjuvant: MSO 0.5\%. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{gathered} 40 \text { or } \\ 55 \end{gathered}$ | 40 or 55 (not CL) | - | - | $\begin{gathered} 40 \text { or } \\ 55 \end{gathered}$ | $\begin{gathered} 40 \text { or } \\ 55 \end{gathered}$ | $\begin{aligned} & 40 \text { or } \\ & 55(\mathrm{~S}) \end{aligned}$ | - | - | $\begin{gathered} 40 \text { or } \\ 55 \end{gathered}$ | - | Can be mixed with clopyralid and clethodim; refer label. Adjuvant: MSO $0.5 \%$. |
| - | - | $\begin{gathered} 1.5 \mathrm{fb} \\ 1.5 \end{gathered}$ | $\begin{gathered} 1.5 \mathrm{fb} \\ 1.5 \end{gathered}$ | $\begin{gathered} 1.5 \mathrm{fb} \\ 1.5 \end{gathered}$ | - | - | - | $\begin{aligned} & 1.5 \mathrm{fb} \\ & 1.5 \end{aligned}$ | $\begin{gathered} 1.5 \mathrm{fb} \\ 1.5 \end{gathered}$ | $\begin{gathered} 1.5 \mathrm{fb} \\ 1.5 \end{gathered}$ | Two applications are required 7-14 days apart. Mild, humid conditions are best. Reduced control can occur at $<10^{\circ} \mathrm{C}$. |
| - | - | - | - | - | - | - | - | - | - | - | Do not exceed 3 kg active ingredient per year. Adjuvant: MSO or MOS 0.5-1\%. |
| - | - | - | - | - | $\stackrel{0.66-}{ }$ | - | - | - | - | - | Adjuvant:MSO 1\%. |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  | Do not spray if temperature is $>25^{\circ} \mathrm{C}$. Adjuvant: NIS $0.25 \%$. |
|  |  |  |  |  |  |  |  |  |  |  | Adjuvant: MSO $1 \%$ or NIS 0.2\%. |
|  |  |  |  |  |  |  |  |  |  |  | Must be combined with clethodim or a FOP herbicide; refer label. Adjuvant: MSO $0.5 \%$. |
| - | - | 100 | 100 | - | 75 | - | 100 | 100 | 75 | 100 | Adjuvant:MOS 1\%. |
|  |  |  |  |  |  |  |  |  |  |  |  |
| - | - | 150 | 125 | - | - | - | 125 | 75 | - | 125 |  |
|  |  |  |  |  |  |  |  |  |  |  | *Add NIS 0.2\% or MSO 0.5\%. |
|  |  |  |  |  |  |  |  |  |  |  | Adjuvant: MSO $1 \%$ or MOS 0.5-1\%. |
|  |  |  |  |  |  |  |  |  |  |  | Application rate determined by weed size, adjuvant type and mix partner; refer label. Adjuvant: MSO or MOS. |

Table 25. Herbicides for weed control in canola - post-emergence - page 2 of 2.

| Note: example trade names shown. Others may be available at different concentrations. See labels for details. |  |  | $\begin{aligned} & \stackrel{0}{3} \\ & \frac{0}{0} \\ & \stackrel{4}{5} \end{aligned}$ |  |  |  | $\frac{\tilde{y}}{\stackrel{y}{0}}$ |  | $\begin{aligned} & \text { n } \\ & \frac{0}{5} \\ & \frac{5}{5} \\ & \sum \end{aligned}$ |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Imidazoline tolerant (CL) canola varieties only |  |  |  |  |  |  |  |  |  |  |  |
| Intercept ${ }^{\ominus}$ (imazamox $33+$ imazapyr 15) | 2 | 2-6-leaf | L/ha | >70 | $\begin{gathered} 0.3- \\ 0.75 \wedge \end{gathered}$ | $\begin{aligned} & 0.6- \\ & 0.75 \\ & 0 \end{aligned}$ | - | - | $\begin{aligned} & 0.3- \\ & 0.75 \end{aligned}$ | - | - |
| Sentry ${ }^{\otimes}$ (imazapic 525 + imazapyr 175) | 2 | 2-6-leaf | g/ha | 70 | - | - | $40 \text { or } 55$ <br> (S) | - | $\begin{aligned} & 20,40 \\ & \text { or } 55 \end{aligned}$ | 40 or 55 | - |
| Glufosinate-ammonium tolerant (Liberty Link) canola varieties only |  |  |  |  |  |  |  |  |  |  |  |
| Liberty ${ }^{\oplus}$ (glufosinateammonium 200) | 10 | 2-leaf to early stem elongation | L/ha | 80-100 | $\begin{gathered} 1.5 \mathrm{fb} \\ 1.5 \end{gathered}$ | - | $\begin{gathered} 1.5 \mathrm{fb} \\ 1.5 \end{gathered}$ | - | - | - | $\begin{gathered} 1.5 \mathrm{fb} \\ 1.5 \end{gathered}$ |
| Triazine-tolerant (TT) canola varieties only |  |  |  |  |  |  |  |  |  |  |  |
| Atrazine 900 | 5 | After 2-3-leaf | kg/ha | 110 | - | - | - | - | $\begin{aligned} & 0.555- \\ & 1.1 \end{aligned}$ | - | - |
| Terbyne ${ }^{\oplus}$ Xtreme ${ }^{\oplus}$ (terbuthylazine 875) | 5 | Early postemergent | kg/ha | >50 | - | - | - | - | - | - | - |
| All canola varieties |  |  |  |  |  |  |  |  |  |  |  |
| Diclofop-methyl 375 | 1 | Up to harvest WHP | L/ha | 80 |  |  |  |  |  |  |  |
| Elantra ${ }^{\oplus}$ Xtreme ${ }^{\circledR}$ (quizalofop-pethyl 200) | 1 | Up to harvest WHP | mL/ha | >50 |  |  |  |  |  |  |  |
| Factor® WG (butroxydim 250) | 1 | 4-leaf to start of stem elongation | g/ha | 50-100 |  |  |  |  |  |  |  |
| ForageMax ${ }^{\otimes}$ (halauxifen $100+$ aminopyralid 50) | 4 | 4-8-leaf | mL/ha | 80-200 | 100 | 100 | 100 | 75 | - | - | 100 |
| Fusilade ${ }^{\circledR}$ Forte (fluazifop-pethyl 128) | 1 | Not after 6-leaf | L/ha | 50-100 |  |  |  |  |  |  |  |
| Lontrel ${ }^{\ominus}$ Advanced (clopyralid 600) | 4 | 2-8-leaf | mL/ha | 50-100 | 125 | - | 75 | - | - | - | - |
| Shogun ${ }^{\text {( }}$ (propaquizafop 100) | 1 | Up to harvest WHP | L/ha | 50-150 |  |  |  |  |  |  |  |
| Status ${ }^{\text {® }}$ (clethodim 240 ) | 1 | Before stem elongation | L/ha | 50-150 |  |  |  |  |  |  |  |
| Verdict $^{\oplus}$ (haloxyfop 520) Do not use on canola destined for export | 1 | 2-6-leaf before stem elongation | mL/ha | 50-150 |  |  |  |  |  |  |  |


|  |  |  |  |  |  |  | $\begin{aligned} & \stackrel{5}{5} \\ & > \end{aligned}$ |  | $\begin{aligned} & \text { O} \\ & \frac{2}{2} \\ & \frac{0}{3} \\ & \frac{0}{3} \end{aligned}$ |  | Comments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| - | - | - | $\begin{gathered} 0.6- \\ 0.75(S) \end{gathered}$ | - | - | - | - | $\begin{aligned} & 0.3- \\ & 0.75 \end{aligned}$ | $\begin{aligned} & 0.3- \\ & 0.75 \end{aligned}$ | - | $\wedge$ Add clopyralid; refer label for rates. Adjuvant: MSO 0.5\%. |
| $\begin{aligned} & 20,40 \\ & \text { or } 55 \end{aligned}$ | - | - | $\begin{gathered} 40 \text { or } \\ 55 \end{gathered}$ | - | - | $\begin{gathered} 40 \text { or } \\ 55 \end{gathered}$ | $\begin{aligned} & 40 \text { or } \\ & 55(\mathrm{~S}) \end{aligned}$ | $\begin{gathered} 20,40 \\ \text { or } 55 \end{gathered}$ | $\begin{gathered} 20,40 \\ \text { or } 55 \end{gathered}$ | $\begin{gathered} 40 \text { or } \\ 55 \end{gathered}$ | Can be mixed with clopyralid and clethodim; refer label. Adjuvant: MSO 0.5\%. |
| - | - | - | $\begin{gathered} 1.5 \mathrm{fb} \\ 1.5 \end{gathered}$ | - | - | $\begin{gathered} 1.5 \mathrm{fb} \\ 1.5 \end{gathered}$ | $\begin{gathered} 1.5 \mathrm{fb} \\ 1.5 \end{gathered}$ | $\begin{gathered} 3 \mathrm{fb} 3 \\ (\mathrm{~S}) \end{gathered}$ | - | $\begin{gathered} 1.5 \mathrm{fb} \\ 1.5 \end{gathered}$ | Two applications are required 7-14 days apart. Mild, humid conditions are best. Reduced control can occur at $<10^{\circ} \mathrm{C}$. |
| - | - | - | - | - | - | - | - | $\begin{gathered} .0555- \\ 1.1 \end{gathered}$ | $\begin{gathered} .0555- \\ 1.1 \end{gathered}$ | - | Do not exceed 3 kg active ingredient per year. Adjuvant: MSO or MOS 0.5-1\%. |
| - | - | - | $\begin{aligned} & 0.66- \\ & 1.2(S) \end{aligned}$ | - | - | - | - | $\begin{gathered} 0.66- \\ 1.2 \end{gathered}$ | - | - | Adjuvant:MSO 1\%. |
|  |  |  |  |  |  |  |  |  |  |  | Do not spray if temperature is $>25^{\circ} \mathrm{C}$. Adjuvant: NIS 0.25\%. |
|  |  |  |  |  |  |  |  |  |  |  | Adjuvant: MSO $1 \%$ or NIS 0.2\%. |
|  |  |  |  |  |  |  |  |  |  |  | Must be combined with clethodim or a FOP herbicide; refer label. Adjuvant: MSO 0.5\%. |
| 100 | - | 100 | - | - | 100 | - | 100 | - | - | - | Adjuvant: MOS 1\%. |
| - | 150 | - | - | 150 | 150 | - | 50 | - | - | - |  |
|  |  |  |  |  |  |  |  |  |  |  | *Add NIS 0.2\% or MSO 0.5\%. |
|  |  |  |  |  |  |  |  |  |  |  | Adjuvant: MSO $1 \%$ or MOS 0.5-1\%. |
|  |  |  |  |  |  |  |  |  |  |  | Application rate determined by weed size, adjuvant type and mix partner; refer label. Adjuvant: MSO or MOS. |


| Note: example trade names shown. Others may be available at different concentrations. See labels for details. |  |  | $\begin{aligned} & \stackrel{0}{3} \\ & \stackrel{y}{\circ} \\ & \stackrel{y}{5} \end{aligned}$ |  |  |  |  |  | $\begin{aligned} & \stackrel{n}{0} \\ & \frac{0}{3} \\ & \frac{0}{3} \end{aligned}$ |  |  |  |  |  | $\begin{aligned} & \text { n } \\ & \frac{0}{5} \\ & \stackrel{\rightharpoonup}{n} \\ & \stackrel{\rightharpoonup}{n} \end{aligned}$ |  |  |  |  | 采 $\frac{0}{0}$ $\frac{0}{3}$ | 2 $\frac{2}{3}$ $\frac{2}{3}$ $\frac{2}{3}$ | Comments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Roundup Ready ${ }^{\text {® }}$ canola varieties only |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| CRUCIAL ${ }^{\circ}$ <br> (glyphosate 600) |  |  |  | 80 |  |  |  |  |  |  |  |  | 1.0 |  |  |  |  |  |  |  |  | Maximum of 2 applications. Minimum of 14 |
| Roundup Ready ${ }^{\text {PL }}$ PL (glyphosate 540) |  |  |  | $\begin{gathered} 50- \\ 80 \end{gathered}$ |  |  |  |  |  |  |  |  | 1.15 |  |  |  |  |  |  |  |  | days between applications. |
| Roundup Ready ${ }^{\text {® }}$ with PLANTSHIELD® (glyphosate 690) | 9 | $\begin{aligned} & \stackrel{\rightharpoonup}{\bar{y}} \\ & \stackrel{0}{0} \\ & \stackrel{\rightharpoonup}{4} \end{aligned}$ | ha | $\begin{gathered} 50- \\ 80 \end{gathered}$ |  |  |  |  |  |  |  |  | 0.9 |  |  |  |  |  |  |  |  | the only method of weed control if glyphosate- |
| Weedmaster ${ }^{\text {D }}{ }^{\circ}{ }^{\circ}{ }^{\ominus}$ (glyphosate 470) |  |  |  | 80 |  |  |  |  |  |  |  |  | 1.3 |  |  |  |  |  |  |  |  | are suspected or present. |
| TruFlex ${ }^{\circ}$ canola varieties only |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| CRUCIAL ${ }^{\circ}$ <br> (glyphosate 600) | 9 |  |  | 80 |  | 1.0-1.5 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 2-3 applications. Minimum of 14 days between applications. Do not use as the only method of weed control if glyphosateresistant weeds are suspected or present. |  |
| Roundup Ready ${ }^{\text {© }}$ PL <br> (glyphosate 540) |  |  |  | $\begin{gathered} 50- \\ 80 \end{gathered}$ |  | 1.15-1.67 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Roundup Ready ${ }^{\circ}$ with PLANTSHIELD® (glyphosate 690) |  |  |  | $\begin{gathered} 50- \\ 80 \end{gathered}$ |  | 0.9-1.3 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Weedmaster ${ }^{\bullet}$ DST ${ }^{\ominus}$ (glyphosate 470) |  |  |  | 80 |  | 1.3-1.9 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |



Table 28. Herbicides for weed control for linseed

| Note: example trade names shown. Others may be available at different concentrations. See labels for details. |  |  |  |  | $\begin{aligned} & \text { n } \\ & \frac{n}{2} \\ & \frac{0}{6} \\ & \frac{0}{0} \\ & \frac{0}{0} \\ & \frac{c}{c} \end{aligned}$ |  |  |  | $\begin{aligned} & \stackrel{n}{0} \\ & \frac{0}{3} \\ & \frac{0}{3} \end{aligned}$ | $\begin{aligned} & \text { 淢 } \\ & \stackrel{\rightharpoonup}{n} \\ & \stackrel{y}{4} \end{aligned}$ |  |  |  |  | $\begin{aligned} & \text { 는 } \\ & \text { 믇 } \\ & \text { 든 } \end{aligned}$ |  | $\overline{0}$ 3 en 0 0 0 0 | 交 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Pre-emergent weed control |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Avadex ${ }^{\oplus}$ Xtra (triallate 500 ) | 15 | PSI, IBS | L/ha | 50 | - | - | - | - | 1.6 | - | - | - | - | - | - | - | - | - |
| TriflurX ${ }^{\circ}$ (trifluralin 480) | 3 | PSI, IBS | L/ha | $\begin{aligned} & 70- \\ & 450 \end{aligned}$ | $\begin{gathered} 1.2- \\ 1.7 \end{gathered}$ | $\begin{gathered} 1.2- \\ 1.7 \end{gathered}$ | - | - | - | - | - | - | - | - | - | - | - | $\begin{gathered} 1.2- \\ 1.7 \end{gathered}$ |

Post-emergent weed control - grass weeds. High levels of herbicide resistance to Groups 1 and 2 selective herbicides are common in most grass weeds. Do not rely on these products as your only management tool.

| Diclofopmethyl 375 | 1 | Not stated | L/ha | 80 | - | 1.0 | - | - | 1.5-2 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Factor ${ }^{\ominus}$ WG (butroxydim 250) | 1 | Up to flowering | g/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | $\begin{aligned} & 80- \\ & 180^{*} \end{aligned}$ | $\begin{aligned} & 80- \\ & 180 \end{aligned}$ | $\begin{aligned} & 80- \\ & 180 \end{aligned}$ | $\left\lvert\, \begin{aligned} & 80- \\ & 180^{*} \end{aligned}\right.$ | $\begin{aligned} & 80- \\ & 180 \end{aligned}$ |
| Fusilade ${ }^{\ominus}$ Forte (fluazifop-pethyl 128) | 1 | Not stated | L/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | 0.41 | 0.41 | 0.41 | - | 0.41 |
| Shogun ${ }^{\circ}$ <br> (propaquizafop 100) | 1 | Not stated | L/ha | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | - | 0.45 | 0.2* | 0.3* | 0.25* |
| Verdict ${ }^{\circ}$ <br> (haloxyfop 520) | 1 | From 2-leaf to bud development | $\begin{gathered} \mathrm{mL} / \\ \mathrm{ha} \end{gathered}$ | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | $\begin{aligned} & 75- \\ & 100 \end{aligned}$ | $\begin{aligned} & 75- \\ & 10 \end{aligned}$ | $\begin{aligned} & 50- \\ & 75 \end{aligned}$ | $\begin{gathered} 50- \\ 75 \end{gathered}$ | $\begin{gathered} 37.5- \\ 100 \end{gathered}$ |

Post-emergent weed control - broadleaf weeds


Incorporation key: IBS = incorporated by sowing, PSI = pre-sowing incorporated, $\mathrm{PSPE}=$ post-sowing, pre-emergent.
Adjuvant key: MO = mineral oil, MOS = mineral oil plus surfactant, MSO = methylated seed oil, NIS = non-ionic surfactan.
NIS products might indicate a specific concentration (i.e. NIS 1000); refer to adjuvant chart for example products.


Ensure you have an IWM plan in place. It is recommended to get your weeds tested for resistance - consult your advisor for localised information

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Do not spray if temperature is $>25^{\circ} \mathrm{C}$. Adjuvant: NIS $0.25 \%$. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | *Must be combined with clethodim or a FOP herbicide; refer label. Adjuvant: MSO 0.5\%. |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | *Add NIS 0.2\% or MSO 0.5\%. |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Application rate determined by weed size, adjuvant type and mix partner; refer label. Adjuvant: MSO or MOS. |
| 2.1 | - | 2.1 | - | 2.1 | 1.4 | - | $\begin{gathered} 1.4- \\ 2.1 \end{gathered}$ | - | 2.1 | 2.1 | 2.1 | $\begin{aligned} & 1.4- \\ & 2.1 \end{aligned}$ | - | $\begin{array}{\|c} 1.4- \\ 2.1 \\ \hline \end{array}$ | 2.1 | 2.1 | 2.1 | Do not spray if temperature is $>20^{\circ} \mathrm{C}$. |
| $\begin{aligned} & 1.0- \\ & 1.43 \\ & \hline \end{aligned}$ | $\begin{aligned} & 1.0- \\ & 1.4 \end{aligned}$ | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | - | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | - | - | $\begin{gathered} 1.0- \\ 1.5 \end{gathered}$ | $\begin{array}{\|l\|l} 1.0- \\ 1.43 \end{array}$ | $\begin{array}{\|l\|l} 1.0- \\ 1.43 \end{array}$ | $\begin{array}{\|l\|} 1.0- \\ 1.43 \end{array}$ | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | $\begin{aligned} & 1.0- \\ & 1.43 \end{aligned}$ | $\begin{aligned} & 1.0- \\ & 1.43 \\ & \hline \end{aligned}$ | Application rate increases with crop growth and weed size; refer label. Do not spray if temperature is $>20^{\circ} \mathrm{C}$. |
| - | - | $\begin{gathered} 0.67- \\ 0.84 \end{gathered}$ | $\begin{aligned} & 0.67- \\ & 0.84 \\ & (\mathrm{~S}) \end{aligned}$ | - | - | - | - | $\begin{gathered} 0.67- \\ 0.84 \end{gathered}$ | - | - | $\begin{gathered} 0.67- \\ 0.84 \end{gathered}$ | $\begin{gathered} 0.67- \\ 0.84 \end{gathered}$ | - | $\begin{gathered} 0.67- \\ 0.84 \end{gathered}$ | $\begin{gathered} 0.67- \\ 0.84 \end{gathered}$ | $\begin{gathered} 0.67- \\ 0.84 \end{gathered}$ | $\begin{aligned} & 0.67- \\ & 0.84 \\ & (S) \end{aligned}$ | Application rate increases with crop growth and weed size; refer label. |
| - | - | 0.66 | - | $\begin{gathered} 0.66- \\ 0.73 \end{gathered}$ | - | $\begin{gathered} 0.46- \\ 0.73 \end{gathered}$ | - | - | - | - | - | $\begin{gathered} 0.66- \\ 0.73 \end{gathered}$ | $\begin{gathered} 0.66- \\ 0.74 \end{gathered}$ | $\begin{aligned} & 0.66- \\ & 0.73 \\ & \hline \end{aligned}$ | 0.66 | 0.66 | - | Application rate increases with crop growth and weed size; refer label. |


| Note: example trade names shown. Others may be available at different concentrations. See labels for details. |  |  | $\begin{aligned} & \stackrel{0}{3} \\ & \stackrel{y}{0} \\ & \stackrel{0}{5} \end{aligned}$ |  |  |  |  |  |  | $\begin{aligned} & \stackrel{n}{0} \\ & \stackrel{0}{2} \\ & \frac{0}{3} \end{aligned}$ | Comments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{aligned} & \text { Avadex }{ }^{\circledR} \text { Xtra (tri- } \\ & \text { allate } 500 \text { ) } \end{aligned}$ | 15 | PSI | L/ha | $\begin{aligned} & 30- \\ & 100 \end{aligned}$ | - | - | - | - | - | 1.6 |  |
| Balance ${ }^{\oplus} 750$ WG (isoxaflutole 750) | 27 | PSPE | g/ha | >50 | - | - | - | - | 100* | - | *Add simazine. <br> Do not use on light or gravelly soils. |
| Bladex ${ }^{\circ}$ (cyanazine 900) | 5 | $\begin{aligned} & \text { PSI, } \\ & \text { IBS, } \\ & \text { PSPE } \end{aligned}$ | kg/ha | $\begin{aligned} & 80- \\ & 200 \end{aligned}$ | - | $\begin{array}{\|c} 1.7 \text { or } \\ 2.2 \end{array}$ | $\begin{aligned} & 1.7 \text { or } \\ & 2.2 \\ & \text { (S) } \end{aligned}$ | $\begin{aligned} & 1.7 \text { or } \\ & 2.2 \\ & (S) \\ & \hline \end{aligned}$ | - | - | Add trifluralin for improved ryegrass control. Low rate for lighter soils. |
| Boxer Gold ${ }^{\circ}$ (prosulfocarb $800+$ S-metolachlor 120) | 15 | IBS | L/ha | >50 | - | 2.5 | - | - | 2.5 | - |  |
| Outlook ${ }^{\circ}$ <br> (dimethenamid-p 720) | 15 | IBS | L/ha | $\begin{aligned} & 70- \\ & 120 \end{aligned}$ | - | 1.0 | - | - | - | - | Will only provide suppression in high populations. |
| Palmero ${ }^{\circ}$ TX (terbuthylazine 750 + isoxaflutole 75) | $\begin{aligned} & 5+ \\ & 27 \end{aligned}$ | IBS | kg/ha | >50 | 1.0 (S) | 1.0 (S) | - | - | - | 1.0 (S) | Sow 50 mm deep. |
|  |  | PSPE |  |  | 1.0 (S) | 1.0 (S) | - | - | - | 1.0 (S) |  |
| Prometryn 900 | 5 | PSPE | kg/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | $\begin{aligned} & 0.83 \\ & \text { (S) } \end{aligned}$ | - | - | - | - | - | Add $0.83 \mathrm{~kg} / \mathrm{ha}$ simazine. |
| $\begin{aligned} & \text { Rifle } 440 \\ & \text { (pendimethalin 440) } \end{aligned}$ | 3 | IBS | L/ha | $\begin{aligned} & 50- \\ & 200 \end{aligned}$ | - | $\begin{aligned} & 1.5- \\ & 2.25 \end{aligned}$ | - | - | $\begin{aligned} & 1.5- \\ & 2.25 \\ & (\mathrm{~S}) \end{aligned}$ | $\begin{aligned} & 1.5- \\ & 2.25 \\ & (\mathrm{~S}) \end{aligned}$ |  |
| Rustler ${ }^{\ominus}$ (propyzamide 500) | 3 | IBS | L/ha | Not stated | 1-2 | 1-2 | 1-2 | 1-2 | 1-2 | 1-2 |  |
| Sakura ${ }^{\oplus}$ (pyroxasulfone 850) | 15 | IBS | g/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | 118 | 118 | 118 | $\begin{aligned} & 118 \\ & (\mathrm{~S}) \end{aligned}$ | 118 | $\begin{aligned} & 118 \\ & (\mathrm{~S}) \end{aligned}$ |  |
| Sencor ${ }^{\circ}$ (metribuzin 480) | 5 | PSPE | L/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | - | $\begin{aligned} & 0.28- \\ & 0.58 \\ & \text { (S) } \end{aligned}$ | - | - | - | - | Rate influenced by soil type. Do not apply to sandy soils. Plant 50 mm deep. |
| Simazine 900 | 5 | $\begin{aligned} & \text { PSI, } \\ & \text { IBS, } \\ & \text { PSPE } \end{aligned}$ | kg/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | $\begin{gathered} 0.8-1.1 \\ \wedge(\mathrm{~S}) \end{gathered}$ | $\begin{aligned} & 0.8- \\ & 1.1^{*} \end{aligned}$ | $\begin{aligned} & 0.8- \\ & 1.1^{*} \end{aligned}$ | $\begin{aligned} & 0.8- \\ & 1.1^{*} \\ & (5) \end{aligned}$ | - | $\begin{aligned} & 0.8- \\ & 1.1^{*} \\ & (S) \end{aligned}$ | *Add $0.8 \mathrm{~L} / \mathrm{ha}$ trifluralin. <br> $\wedge$ Add $0.83 \mathrm{~kg} /$ ha prometryn. |
| Terbyne ${ }^{\ominus}$ Xtreme ${ }^{\ominus}$ (terbuthylazine 875) | 5 | IBS | kg/ha | >50 | $\begin{aligned} & 0.86- \\ & 1.2(\mathrm{~S}) \end{aligned}$ | $\begin{aligned} & 0.86- \\ & 1.2 \text { (S) } \end{aligned}$ | - | - | $\begin{gathered} 0.86- \\ 1.2 \\ \text { (S) } \end{gathered}$ | $\begin{aligned} & 0.86- \\ & 1.2(S) \end{aligned}$ | Low rate for lighter soils. Sow 30 mm , preferably 50 mm , deep. Do not use $>0.86 \mathrm{~kg} / \mathrm{ha}$ if soil $\mathrm{pH}>8$. |
|  |  | PSPE |  |  | $\begin{aligned} & 0.6- \\ & 0.86 \\ & (S) \end{aligned}$ | $\begin{aligned} & 0.6- \\ & 0.86 \\ & (S) \end{aligned}$ | - | - | $\begin{gathered} 0.6- \\ 0.86 \\ (\mathrm{~S}) \end{gathered}$ | $\begin{aligned} & 0.6- \\ & 0.86 \\ & \text { (S) } \end{aligned}$ |  |
| TriflurX ${ }^{\text {( } \text { (rifluralin 480) }}$ | 3 | PSI, IBS | L/ha | $\begin{aligned} & 70- \\ & 450 \end{aligned}$ | 1.2-1.7 | 1.2-1.7 | - | - | - | - | Rate influenced by soil type; refer label. |
| Ultro® (carbentamide 900) | 23 | $\begin{aligned} & \text { IBS, } \\ & \text { PSPE } \end{aligned}$ | kg/ha | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | - | $\begin{gathered} 1.1 .0 \\ (5) \end{gathered}$ | $\begin{gathered} 1.1 .0 \\ (5) \end{gathered}$ | $\begin{gathered} 1.1 .0 \\ (\text { 1) } \end{gathered}$ | - | - | Apply in a tank mix to improve control. Sow $30-50 \mathrm{~mm}$ deep. |

Incorporation key: IBS = incorporated by sowing, PSI = pre-sowing incorporated, PSPE = post-sowing, pre-emergen NIS products might indicate a specific concentration (i.e. NIS 1000); refer to adjuvant chart for example products.



## RESIDUAL AND BURNDOWN CONTROL WITH FLEXIBILITY

- IBS application prior to Wheat*, Chickpeas, Faba beans, Lentils and Field peas as well as post-emergence in Lucerne and prior to summer crops.
- Pre-emergence activity against difficult to control grass and broadleaf weeds.
- Flexibility in crop rotations with short re-cropping intervals.
- Group 14 PPO mode of action with no known resistance.
- Enhanced burndown on emerged weeds.
- Long term residual control on fence-lines and channel banks
* Excluding Durum varieties.

$$
\begin{aligned}
& \text { CONVENIENT } \\
& \text { NEW SC LIQUID } \\
& \text { FORMULATION OF } \\
& \text { VALOR }
\end{aligned}
$$

| Note：example trade names shown．Others may be available at different concentrations． See labels for details． |  |  | $\begin{aligned} & \stackrel{0}{3} \\ & \stackrel{y}{0} \\ & \stackrel{0}{5} \\ & 5 \end{aligned}$ |  | $\begin{aligned} & \text { 淢 } \\ & \stackrel{\rightharpoonup}{n} \\ & \stackrel{y}{4} \end{aligned}$ |  |  |  |  | $\begin{aligned} & \text { 흔 } \\ & \text { b } \\ & \text { 든 } \end{aligned}$ |  |  | 蒿 |  |  |  |  | $\stackrel{\text { U }}{\substack{\text { ® }}}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Balance ${ }^{\oplus} 750$ WG （isoxaflutole 750） | 27 | PSPE | g／ha | ＞50 | － | － | － | － | 100 | － | － | 100＊ | － | － | － | － | － | 100 |
| Bladex ${ }^{\ominus}$ <br> （cyanazine 900） | 5 | PSI，IBS， PSPE | kg／ha | $\begin{aligned} & 80- \\ & 200 \end{aligned}$ | － | － | － | － | $\begin{gathered} 1.7 \text { or } \\ 2.2 \\ \hline \end{gathered}$ | － | － | $\begin{gathered} 1.7 \text { or } \\ 2.2 \end{gathered}$ | － | － | － | $\begin{array}{c\|} \hline 1.7 \text { or } \\ 2.2 \\ \text { (S) } \end{array}$ | － | － |
| Boxer Gold ${ }^{\text {® }}$ （prosulfocarb 800 ＋S－metolachlor 120） | 15 | IBS | L／ha | ＞50 | － | － | － | － | － | － | － | － | － | － | － | － | － | － |
| Diuron 900 | 5 | IBS | kg／ha | 40－70 | － | － | － | － | $\begin{gathered} 0.83- \\ 1.1 \end{gathered}$ | － | － | － | － | $\begin{array}{\|c\|} \hline 0.83- \\ 1.1 \\ \hline \end{array}$ | － | － | － | － |
|  |  | PSPE |  |  | － | － | － | － | $\begin{gathered} 0.55- \\ 0.83 \end{gathered}$ | － | － | － | － | $\begin{gathered} 0.55- \\ 0.83 \end{gathered}$ | － | － | － | － |
| Palmero ${ }^{\circ}$ TX <br> （terbuthylazine <br> $750+$ <br> isoxaflutole 75） | $\begin{aligned} & 5+ \\ & 27 \end{aligned}$ | IBS | kg／ha | ＞50 | － | － | － | － | 1.0 | － | 1.0 | － | － | － | 1.0 | 1.0 （S） | － | － |
|  |  | PSPE |  |  | － | － | － | － | 1.0 | － | $\begin{aligned} & 0.7- \\ & 1.0 \end{aligned}$ | $\begin{gathered} 0.7- \\ 1.0 \end{gathered}$ | － | － | 1.0 | 1.0 | 1.0 | 1.0 |
| Prometryn 900 | 5 | PSPE | kg／ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | － | － | $\begin{gathered} 0.83 \\ (5) \end{gathered}$ | － | － | － | － | 0.83 | － | － | － | － | － | － |
| Reflex®（fomesafen 240） | 14 | IBS | L／ha | ＞50 | － | － | － | － | $\begin{gathered} 0.75- \\ 1.5 \\ \text { (S) } \end{gathered}$ | － | － | － | － | － | $\begin{gathered} 0.75- \\ 1.5 \\ \text { (S) } \end{gathered}$ | $\begin{aligned} & 0.75- \\ & 1.5 \\ & (5) \end{aligned}$ | － | － |
|  |  | PSPE |  |  | － | － | － | － | $\begin{gathered} 0.9- \\ 1.25 \\ (S) \end{gathered}$ | － | － | $\begin{aligned} & 0.9- \\ & 1.25 \end{aligned}$ | － | － | $\begin{aligned} & 0.5- \\ & 1.25 \\ & \text { (S) } \end{aligned}$ | $\begin{gathered} 0.5- \\ 0.9(S) \\ -1.25 \end{gathered}$ | － | － |
| $\begin{aligned} & \begin{array}{l} \text { Rifle }^{\ominus} \\ \text { (pendimethalin } \\ \text { 440) } \end{array} \\ & \hline \end{aligned}$ | 3 | IBS | L／ha | $\begin{aligned} & 50- \\ & 200 \end{aligned}$ | － | － | － | － | － | － | － | － | － | － | （s） | ． | － | － |
| Sakura ${ }^{\circ}$ （pyroxasulfone 850） | 15 | IBS | g／ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | － | － | － | － | － | － | － | － | － | － | － | － | － | － |
| Sencor ${ }^{\circ}$ （metribuzin 480） | 5 | PSPE | L／ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | $\begin{gathered} 0.28- \\ 0.58 \end{gathered}$ | － | － | － | $\begin{array}{c\|} 0.28- \\ 0.58 \end{array}$ | $\begin{gathered} 0.28- \\ 0.58 \end{gathered}$ | $\begin{gathered} 0.28- \\ 0.58 \end{gathered}$ | $\begin{gathered} 0.28- \\ 0.58 \end{gathered}$ | $\begin{gathered} 0.28- \\ 0.58 \end{gathered}$ | $\begin{gathered} 0.28- \\ 0.58 \end{gathered}$ | － | $\begin{gathered} 0.28- \\ 0.58 \end{gathered}$ | － | － |
| Simazine 900 | 5 | PSI，IBS， | kg／ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | － | － | $\begin{aligned} & 0.8- \\ & 1.1 \wedge \\ & (S) \\ & (S) \end{aligned}$ | $\begin{aligned} & 0.8- \\ & 1.1^{*} \\ & \text { (not } \\ & \Pi \text { () } \end{aligned}$ | $\begin{aligned} & 0.8- \\ & 1.1^{*} \end{aligned}$ | － | $\begin{aligned} & 0.8- \\ & 1.1^{*} \end{aligned}$ | $\begin{aligned} & 0.8- \\ & 1.1 \wedge \end{aligned}$ | － | － | － | $\begin{aligned} & 0.8- \\ & 1.1^{*} \end{aligned}$ | － | － |
| Terbyne ${ }^{\oplus}$ Xtreme ${ }^{\ominus}$ （terbuthylazine 875） | 5 | IBS | kg／ha | ＞50 | － | － | － | － | － | － | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | $\begin{array}{\|c} \hline 0.86- \\ 1.2 \end{array}$ | － | － | － | － | － | $\begin{array}{\|c} \hline 0.86- \\ 1.2 \end{array}$ |
|  |  | PSPE |  |  | － | － | － | － | － | － | $\begin{aligned} & 0.6- \\ & 0.86 \\ & 0.86 \end{aligned}$ | $\begin{aligned} & 0.6- \\ & 0.86 \end{aligned}$ | － | － | － | － | － | $\begin{aligned} & 0.6- \\ & 0.86 \end{aligned}$ |
| TriflurX® ${ }^{\circ}$ （trifluralin 480） | 3 | PSI，IBS | L／ha | $\begin{aligned} & 70- \\ & 450 \end{aligned}$ | － | － | － | － | － | － | － | － | － | － | － | $\begin{array}{\|l\|} \hline 1.2- \\ 1.7 \\ (S) \\ \hline \end{array}$ | － | － |
| Valor ${ }^{\ominus} / T e r r a n^{\bullet}$ （flumioxazin 500） | 14 | IBS | g／ha | ＞80 | － | $\begin{aligned} & 180 \\ & \text { (S) } \end{aligned}$ | $\begin{aligned} & 180 \\ & \text { (S) } \end{aligned}$ | $\begin{aligned} & 180 \\ & (5) \end{aligned}$ | $\begin{aligned} & 180 \\ & \text { (S) } \end{aligned}$ | － | － | － | － | － | $\begin{aligned} & 180 \\ & (\mathrm{~S}) \end{aligned}$ | $\begin{aligned} & 180 \\ & \text { (S) } \end{aligned}$ | － | － |

Incorporation key：IBS＝incorporated by sowing，PSI＝pre－sowing incorporated，PSPE＝post－sowing，pre－emergent．
NIS products might indicate a specific concentration（i．e．NIS 1000）；refer to adjuvant chart for example products．

|  |  |  |  |  |  | $\begin{aligned} & \bar{\omega} \\ & \text { ì } \end{aligned}$ |  |  |  | Thistle－spear／black |  | $\begin{aligned} & \frac{\sqrt[5]{n}}{6} \\ & \frac{\underline{⿺ 𠃊}}{2} \\ & \frac{\pi}{3} \end{aligned}$ | $\begin{aligned} & \text { 을 } \\ & \frac{3}{3} \\ & \frac{0}{3} \end{aligned}$ |  | Comments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| － | 100 | － | 100 | － | － | － | 100 | 100＊（S） | 100＊（S） | 100＊ | － | 100 | 100 | 100＊（S） | ＊Add simazine． <br> Do not use on light or gravelly soils． |
| － | $\begin{gathered} 1.7 \text { or } \\ 2.2 \end{gathered}$ | － | $\begin{gathered} 1.7 \text { or } \\ 2.2 \end{gathered}$ | $\begin{gathered} 1.7 \text { or } \\ 2.2 \end{gathered}$ | － | － | $\begin{gathered} 1.7 \text { or } \\ 2.2 \end{gathered}$ | $\begin{gathered} 1.7 \text { or } \\ 2.2 \end{gathered}$ | － | － | － | $\begin{aligned} & 1.7 \text { or } \\ & 2.2 \\ & \text { (S) } \end{aligned}$ | $\begin{array}{\|c} 1.7 \text { or } \\ 2.2 \end{array}$ | $\begin{aligned} & 1.7 \text { or } \\ & 2.2(S) \end{aligned}$ | Add trifluralin for improved ryegrass control．Low rate for lighter soils． |
| － | － | － | － | － | － | － | － | － | － | － | 2.5 | － | － | － |  |
| － | － | － | － | － | － | － | － | $\begin{array}{\|c\|} \hline 0.83- \\ 1.1 \end{array}$ | － | － | $\begin{gathered} 0.83- \\ 1.1 \end{gathered}$ | $\begin{array}{\|c} 0.83- \\ 1.1 \end{array}$ | $\begin{array}{\|c} \hline 0.83- \\ 1.1 \end{array}$ | － | Lower rate for lighter soils． |
| － | － | － | － | － | － | － | － | $\begin{aligned} & 0.55- \\ & 0.83 \end{aligned}$ | － | － | $\begin{gathered} 0.55- \\ 0.83 \end{gathered}$ | $\begin{gathered} 0.55- \\ 0.83 \end{gathered}$ | － | － |  |
| － | － | － | － | － | － | － | － | 1.0 （S） | － | － | － | － | $\begin{gathered} 0.55- \\ 0.84 \end{gathered}$ | － | Sow 50 mm deep． |
| $\begin{gathered} 0.7- \\ 1.0 \end{gathered}$ | $\begin{aligned} & 0.7- \\ & 1.0 \end{aligned}$ | － | $\begin{gathered} 0.7- \\ 1.0 \end{gathered}$ | － | $\begin{aligned} & 0.7- \\ & 1.0 \end{aligned}$ | － | $\begin{aligned} & 0.7- \\ & 1.0 \end{aligned}$ | 1.0 （S） | － | － | $\begin{aligned} & 0.7- \\ & 1.0 \end{aligned}$ | 1.0 | $\begin{aligned} & 0.7- \\ & 1.0 \end{aligned}$ | 0．7－1．0 |  |
| － | 0.83 | － | 0.83 | － | 0.83 | － | 0.83 | － | － | － | － | － | 0.83 | 0.83 | Add $0.83 \mathrm{~kg} / \mathrm{ha}$ simazine． |
| － | $\begin{aligned} & 0.5- \\ & 0.75 \\ & (S)- \\ & 1.5 \end{aligned}$ | － | $\begin{aligned} & 0.5- \\ & 0.75 \\ & (S)- \\ & 1.5 \end{aligned}$ | － | － | － | $\begin{aligned} & 0.5- \\ & 0.55 \\ & (S)- \\ & 1.5 \end{aligned}$ | $\begin{array}{\|l\|} 0.75- \\ 1.5(S) \end{array}$ | － | － | $\begin{gathered} 0.75- \\ 1.5 \\ (S) \end{gathered}$ | $\begin{aligned} & 0.5- \\ & 0.75 \\ & (S)- \\ & 1.5 \end{aligned}$ | $\begin{aligned} & 0.5- \\ & 0.75 \\ & (\mathrm{~S})- \\ & 1.5 \end{aligned}$ | － | Low rates generally provide suppression and shorter residual． |
| － | $\begin{aligned} & 0.5- \\ & 0.9(5) \\ & -1.25 \end{aligned}$ | － | $\begin{array}{\|l\|} 0.5- \\ 1.25 \end{array}$ | － | － | － | $\begin{aligned} & 0.5- \\ & 1.25 \\ & 1 \end{aligned}$ | $\begin{aligned} & 0.9- \\ & 1.25 \\ & \text { (s) } \end{aligned}$ | － | － | $\begin{aligned} & 0.9- \\ & 1.25 \\ & (5) \end{aligned}$ | $\begin{gathered} 0.5- \\ 0.9(5) \\ -1.25 \end{gathered}$ | $\begin{gathered} 0.5- \\ 0.9(\mathrm{~S}) \\ -1.25 \end{gathered}$ | $\begin{gathered} 0.5-0.9 \\ (S)- \\ 1.25 \\ 1.25 \end{gathered}$ |  |
| － | － | － | － | － | － | － | － | － | － | － | － | － | － | $\begin{aligned} & 1.5- \\ & 2.25 \end{aligned}$ |  |
| － | － | － | － | － | － | － | － | － | － | － | 118 | － | － | － |  |
| － | $\begin{gathered} 0.28- \\ 0.58 \end{gathered}$ | － | － | $\begin{gathered} 0.28- \\ 0.58 \end{gathered}$ | $\begin{gathered} 0.28- \\ 0.58 \end{gathered}$ | $\begin{gathered} 0.28- \\ 0.58 \end{gathered}$ | $\begin{gathered} 0.28- \\ 0.58 \end{gathered}$ | $\begin{aligned} & 0.28- \\ & 0.58 \end{aligned}$ | － | － | $\begin{gathered} 0.28- \\ 0.58 \end{gathered}$ | $\begin{gathered} 0.28- \\ 0.58 \end{gathered}$ | $\begin{gathered} 0.28- \\ 0.58 \end{gathered}$ | $\begin{gathered} 0.28- \\ 0.58 \end{gathered}$ | Rate influenced by soil type．Do not apply to sandy soils．Plant 50 mm deep． |
| － | $\begin{aligned} & 0.1^{*} \\ & \end{aligned}$ | － | $\begin{aligned} & 0.8- \\ & 1.1 \\ & \text { or } \wedge \end{aligned}$ | $\begin{aligned} & 0.8- \\ & 1.1^{*} \end{aligned}$ | $\begin{aligned} & 0.8- \\ & 1 . \wedge^{\wedge} \end{aligned}$ | － | $\begin{aligned} & 0.8- \\ & 1.1 \\ & \text { or } \wedge \end{aligned}$ | － | － | － | － | － | $\begin{aligned} & 0.8- \\ & 1.1^{*} \\ & \text { or } \wedge \end{aligned}$ | $\begin{aligned} & 0.8- \\ & 1.1^{*} \\ & \text { or^ } \end{aligned}$ | ＊Add $0.8 \mathrm{~L} / \mathrm{ha}$ trifluralin． <br> $\wedge A d d ~ 0.83 \mathrm{~kg} /$ ha prometryn． |
| $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | － | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | － | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | － | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | $\begin{array}{\|l\|} 0.86- \\ 1.2(S) \end{array}$ | － | － | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | $\begin{gathered} 0.86- \\ 1.2 \\ (\mathrm{~S}) \end{gathered}$ | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | Low rate for lighter soils．Sow 30 mm ， preferably 50 mm ，deep．Do not use $>0.86 \mathrm{~kg} / \mathrm{ha}$ if soil $\mathrm{pH}>8$ ． |
| $\begin{aligned} & 0.6- \\ & 0.86 \\ & 0.6 \end{aligned}$ | $\begin{aligned} & 0.6- \\ & 0.86 \end{aligned}$ | － | $\begin{array}{\|l\|} 0.6- \\ 0.86 \end{array}$ | － | $\begin{array}{\|l\|} 0.6- \\ 0.86 \end{array}$ | － | $\begin{array}{\|l\|l\|} 0.6- \\ 0.86 \end{array}$ | $\begin{aligned} & 0.6- \\ & 0.86 \\ & (S) \end{aligned}$ | － | － | $\begin{aligned} & 0.6- \\ & 0.86 \end{aligned}$ | $\begin{aligned} & 0.6- \\ & 0.86 \\ & (5) \end{aligned}$ | $\begin{aligned} & 0.6- \\ & 0.86 \end{aligned}$ | $\begin{aligned} & 0.6- \\ & 0.86 \end{aligned}$ |  |
| － | － | － | － | － | － | － | － | － | － | － | － | － | － | 1．2－1．7 | Rate influenced by soil type；refer label． |
| － | － | $\begin{aligned} & 180 \\ & (5) \end{aligned}$ | $\begin{aligned} & 180 \\ & (5) \end{aligned}$ | $\begin{aligned} & 180 \\ & \text { (S) } \end{aligned}$ | － | － | $\begin{aligned} & 180 \\ & \text { (s) } \end{aligned}$ | － | － | － | $\begin{aligned} & 180 \\ & (\mathrm{~S}) \end{aligned}$ | $\begin{aligned} & 180 \\ & \text { (S) } \end{aligned}$ | － | 180 （S） | Avoid light soil types as crop damage might occur． |

Table 31. Herbicides for grass and broadleaf weed control for chickpea - post-emergence. Read the label before using a product.

| Note: example trade names shown. <br> Others may be available at different concentrations. See labels for details. |  | Incorporation/growth stage |  |  |  |  |  |  |  | $\begin{aligned} & \frac{n}{0} \\ & \frac{0}{3} \\ & \frac{0}{3} \end{aligned}$ | $\begin{aligned} & \stackrel{\pi}{\stackrel{\rightharpoonup}{4}} \\ & \stackrel{\rightharpoonup}{n} \\ & \stackrel{y}{4} \end{aligned}$ |  |  |  |  |  | $\frac{5}{\frac{5}{0}}$ $\frac{0}{0}$ $\frac{0}{3}$ |  | Comments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Broadstrike ${ }^{\ominus}$ (flumetsulam 800) | 2 |  | g/ha | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | - | - | - | - | - | - |  |  |  | 25 |  |  | $\begin{aligned} & 25 \\ & (5) \end{aligned}$ | 25 | Crop <br> discolouration, stunting and/or delayed flowering can occur. Do not tank mix or add adjuvants. |
| Elantra ${ }^{\circ}$ Xtreme ${ }^{\bullet}$ (quizalofop-pethyl 200) | 1 | $\begin{aligned} & \stackrel{\rightharpoonup}{4} \\ & \stackrel{\rightharpoonup}{0} \\ & \stackrel{0}{4} \\ & \stackrel{1}{2} \end{aligned}$ | $\begin{gathered} \mathrm{mL} / \\ \mathrm{ha} \end{gathered}$ | >50 | - | $\begin{gathered} 150- \\ 190 \end{gathered}$ | 125 | $\begin{aligned} & 150- \\ & 190 \end{aligned}$ | - | $\begin{gathered} 65 \text { or } \\ 125 \end{gathered}$ |  |  |  |  |  |  |  |  | Adjuvant: MSO 1\% or NIS 0.2\%. |
| Factor ${ }^{\ominus}$ WG (butroxydim 250) | 1 | $\begin{aligned} & \stackrel{\rightharpoonup}{4} \\ & \text { N} \\ & \text { N} \\ & \stackrel{\rightharpoonup}{0} \end{aligned}$ | g/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | $\begin{aligned} & 80- \\ & 180^{*} \end{aligned}$ | $\begin{aligned} & 80- \\ & 180 \end{aligned}$ | $\begin{aligned} & 80- \\ & 180 \end{aligned}$ | $\begin{aligned} & 80- \\ & 180^{*} \end{aligned}$ | - | $\begin{aligned} & 80- \\ & 180 \end{aligned}$ |  |  |  |  |  |  |  |  | *Must be combined with clethodim or a FOP herbicide; refer label. Adjuvant: MSO 0.5\%. |
| Fusilade ${ }^{\oplus}$ Forte (fluazifop-pethyl 128) | 1 | $\begin{aligned} & \text { ٓ } \\ & \stackrel{\rightharpoonup}{0} \\ & \stackrel{4}{5} \\ & \stackrel{0}{2} \end{aligned}$ | L/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | - | - | - | 0.5 | - | - |  |  |  |  |  |  |  |  |  |
| Shogun ${ }^{\bullet}$ <br> (propaquizafop <br> 100) | 1 |  | L/ha | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | - | 0.45 | 0.2* | 0.3* | - | 0.25* |  |  |  |  |  |  |  |  | *Add NIS 0.2\% or MSO 0.5\%. |
| Status ${ }^{\circledR}$ <br> (clethodim 240) | 1 |  | L/ha | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | $\begin{gathered} 0.15- \\ 0.5 \end{gathered}$ | $\begin{gathered} 0.15- \\ 0.5 \end{gathered}$ | $\begin{gathered} 0.175- \\ 0.5 \end{gathered}$ | $\begin{gathered} 0.175- \\ 0.5 \end{gathered}$ | $\begin{gathered} 0.25- \\ 0.5 \end{gathered}$ | $\begin{gathered} 0.175- \\ 0.5 \end{gathered}$ |  |  |  |  |  |  |  |  | Adjuvant: MSO 1\% or MOS 0.5-1\%. |
| Verdict ${ }^{*}$ (haloxyfop 520) | 1 |  | $\begin{aligned} & \mathrm{mL} / \\ & \mathrm{ha} \end{aligned}$ | $\left\{\begin{array}{l} 50- \\ 150 \end{array}\right.$ | $\begin{aligned} & 75- \\ & 100 \end{aligned}$ | $\begin{aligned} & 75- \\ & 100 \end{aligned}$ | 50-75 | 50-75 | - | $\begin{gathered} 37.5- \\ 100 \end{gathered}$ |  |  |  |  |  |  |  |  | Application rate determined by weed size, adjuvant type and mix partner; refer label. Adjuvant: MSO or MOS. |

NIS products might indicate a specific concentration (i.e. NIS 1000); refer to adjuvant chart for example products. Adjuvant key: $M \mathrm{MO}=$ mineral oil, $\mathrm{MOS}=$ mineral oil plus surfactant, $\mathrm{MSO}=$ methylated seed oil, $\mathrm{NIS}=$ non-ionic surfactant


Farming is uncertain enough without adding propyzamide to your list of doubts. Rustler ${ }^{\otimes}$ Selective Herbicide is formulated to an exceptionally high quality standard for unquestionable consistency. That's why it stands out as the propyzamide herbicide trusted by more farmers to perform better during mixing and application. Which makes Rustler® the reliable choice because if you're banking on a cleaner, healthier harvest, a tank full of trouble during planting is the last thing you need. For more information visit www.rustlerherbicide.com.au

| Note: example trade names shown. Others may be available at different concentrations. See labels for details. |  |  |  |  |  |  |  |  |  | $\begin{aligned} & \stackrel{n}{5} \\ & \frac{0}{3} \\ & \frac{0}{3} \end{aligned}$ |  |  |  |  |  | $\begin{aligned} & \text { 늘 } \\ & \text { 믇 } \\ & \text { 든 } \end{aligned}$ |  |  |  | 吕 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\text { Avadex }{ }^{\ominus} \text { Xtra (tri- }$ allate 500) | 15 | PSI | L/ha | $\begin{aligned} & 30- \\ & 100 \end{aligned}$ | - | - | - | - | - | 1.6 | - | - | - | - | - | - | - | - | - | - |
| Bladex ${ }^{\bullet}$ <br> (cyanazine 900) | 5 | $\begin{aligned} & \text { PSI, } \\ & \text { IBS } \end{aligned}$ | $\begin{aligned} & \mathrm{kg} / \\ & \mathrm{ha} \end{aligned}$ | $\begin{aligned} & 80- \\ & 200 \end{aligned}$ | - | $\begin{gathered} 1.7 \text { or } \\ 2.2 \end{gathered}$ | $\begin{aligned} & 1.7 \text { or } \\ & 2.2 \\ & (S) \end{aligned}$ | $\begin{aligned} & \hline 1.7 \text { or } \\ & 2.2 \\ & \text { (S) } \\ & \hline \end{aligned}$ | - | - | - | - | - | - | $\begin{gathered} 1.7 \text { or } \\ 2.2 \end{gathered}$ | - | - | - | $\begin{gathered} 1.7 \text { or } \\ 2.2 \end{gathered}$ | - |
|  |  | PSPE |  |  | - | $\begin{gathered} 1.1 \text { or } \\ 1.7 \end{gathered}$ | $\begin{aligned} & 1.1 \text { or } \\ & 1.7 \\ & (S) \end{aligned}$ | $\begin{gathered} 1.1 \text { or } \\ 1.7 \\ \text { (S) } \end{gathered}$ | - | - | - | - | - | - | $\begin{gathered} 1.1 \text { or } \\ 1.7 \end{gathered}$ | - | - | - | $\begin{gathered} 1.1 \text { or } \\ 1.7 \end{gathered}$ | - |
| Boxer Gold ${ }^{\circledR}$ (prosulfocarb 800 + S-metolachlor 120) | 15 | IBS | L/ha | >50 | - | 2.5 | - | - | 2.5 | - | - | - | - | - | - | - | - | - | - | - |
| Diuron ${ }^{\text {® }} 900$ | 5 | IBS | $\begin{aligned} & \mathrm{kg} / \\ & \mathrm{ha} \end{aligned}$ | $\begin{aligned} & 40- \\ & 70 \end{aligned}$ | - | - | - | - | - | - | - | - | - | - | $\begin{gathered} 0.83- \\ 1.1 \end{gathered}$ | - | - | - | - | - |
|  |  | PSPE |  |  | - | - | - | - | - | - | - | - | - | - | $\begin{gathered} 0.55- \\ 0.83 \end{gathered}$ | - | - | - | - | - |
| Overwatch ${ }^{\circ}$ <br> (bixlozone 400) | 13 | IBS | L/ha | $\begin{aligned} & 60- \\ & 100 \end{aligned}$ | $\begin{aligned} & 1.25 \\ & (\mathrm{~S}) \end{aligned}$ | 1.25 | $\begin{aligned} & 1.25 \\ & (\mathrm{~s}) \end{aligned}$ | $\begin{aligned} & 1.25 \\ & \text { (S) } \end{aligned}$ | 1.25 | $\begin{aligned} & 1.25 \\ & (\mathrm{~S}) \end{aligned}$ | - | $\begin{aligned} & 1.25 \\ & (\mathrm{~S}) \end{aligned}$ | - | - | $\begin{aligned} & 1.25 \\ & \text { (S) } \end{aligned}$ | - | $\begin{aligned} & 1.25 \\ & (S) \end{aligned}$ | - | - | - |
| Reflex ${ }^{\ominus}$ (fomesafen 240) | 14 | IBS | L/ha | >50 | - | - | - | - | - | - | - | - | - | - | $\begin{gathered} 0.75- \\ 1.5 \\ \text { (S) } \end{gathered}$ | - | - | - | - | - |
|  |  | PSPE |  |  | - | - | - | - | - | - | - | - | - | - | $\begin{aligned} & 0.9- \\ & 1.25 \\ & (\mathrm{~s}) \end{aligned}$ | - | - | - | $\begin{aligned} & 0.9- \\ & 1.25 \end{aligned}$ | - |
| $\begin{aligned} & \text { Sakura } \\ & \text { (pyroxasulfone } \\ & 850 \text { ) } \end{aligned}$ | 15 | IBS | g/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | 118 | 118 | 118 | $\begin{aligned} & 118 \\ & \text { (S) } \end{aligned}$ | 118 | $\begin{aligned} & 118 \\ & (5) \end{aligned}$ | - | - | - | - | - | - | - | - | - | - |
| Sencor ${ }^{\ominus}$ (metribuzin 480) | 5 | $\begin{gathered} \text { PSPE- } \\ 3 \\ \text { node } \end{gathered}$ | L/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | - | $\begin{gathered} 0.28- \\ 0.73 \\ (\mathrm{~S}) \end{gathered}$ | - | - | - | - | $\begin{gathered} 0.28- \\ 0.73 \end{gathered}$ | - | - | - | $\begin{gathered} 0.28- \\ 0.73 \end{gathered}$ | $\begin{gathered} 0.28- \\ 0.73 \end{gathered}$ | - | $\begin{gathered} 0.28- \\ 0.73 \end{gathered}$ | $\begin{gathered} 0.28- \\ 0.73 \end{gathered}$ | $\begin{gathered} 0.28- \\ 0.73 \end{gathered}$ |
| Spinnaker ${ }^{\ominus}$ (imazethapyr 700) | 2 | PSPE | g/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | - | 70 | 70 | - | - | 70 | $\begin{aligned} & 70- \\ & 100 \end{aligned}$ | - | - | - | $\begin{aligned} & 70- \\ & 100 \end{aligned}$ | - | - | - | 70 | - |
| Terbyne ${ }^{\circ}$ Xtreme ${ }^{\circ}$ (terbuthylazine 875) | 5 | IBS | $\begin{aligned} & \mathrm{kg} / \\ & \mathrm{ha} \end{aligned}$ | >50 | $\begin{gathered} 0.86- \\ 1.2 \\ (\mathrm{~S}) \end{gathered}$ | $\begin{aligned} & 0.86- \\ & 1.2 \\ & (5) \end{aligned}$ | - | - | $\begin{gathered} 0.86- \\ 1.2 \\ (S) \end{gathered}$ | $\begin{gathered} 0.86- \\ 1.2 \\ (5) \end{gathered}$ | - | - | - | - | - | - | - | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | - |
|  |  | PSPE |  |  | $\begin{aligned} & 0.6- \\ & 0.86 \\ & (S) \end{aligned}$ | $\begin{gathered} 0.6- \\ 0.86 \\ (\mathrm{~S}) \end{gathered}$ | - | - | $\begin{gathered} 0.6- \\ 0.86 \\ (S) \end{gathered}$ | $\begin{array}{c\|} \hline 0.6- \\ 0.86 \\ (\mathrm{~S}) \end{array}$ | - | - | - | - | - | - | - | $\begin{aligned} & 0.6- \\ & 0.86 \end{aligned}$ | $\begin{array}{\|l\|} \hline 0.6- \\ 0.86 \end{array}$ | - |
| TriflurX ${ }^{\ominus}$ <br> (trifluralin 480) | 3 | $\begin{aligned} & \text { PSI, } \\ & \text { IBS } \end{aligned}$ | L/ha | $\begin{aligned} & 70- \\ & 450 \end{aligned}$ | $\begin{aligned} & 1.2- \\ & 1.7 \end{aligned}$ | $\begin{aligned} & 1.2- \\ & 1.7 \end{aligned}$ | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ultro ${ }^{\circ}$ (carbentamide 900) | 23 | IBS | $\begin{aligned} & \mathrm{kg} / \\ & \mathrm{ha} \end{aligned}$ | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | - | $\begin{gathered} 1.1- \\ 1.7 \end{gathered}$ | $\begin{aligned} & 1.1- \\ & 1.7 \end{aligned}$ | $\begin{aligned} & 1.1- \\ & 1.7 \end{aligned}$ | - | - | - | - | - | - | - | - | - | - | - | - |
| Valor ${ }^{\circledR}$ Terrain ${ }^{\circledR}$ (flumioxazin 500) | 14 | IBS | g/ha | >80 | - | - | - | - | - | - | - | $\begin{aligned} & 180 \\ & \text { (5) } \end{aligned}$ | $\begin{aligned} & 180 \\ & (S) \end{aligned}$ | $\begin{aligned} & 180 \\ & \text { (S) } \end{aligned}$ | $\begin{aligned} & 180 \\ & \text { (S) } \end{aligned}$ | - | - | - | - | - |

Incorporation key: IBS = incorporated by sowing, PSI = pre-sowing incorporated, PSPE = post-sowing, pre-emergent.
NIS products might indicate a specific concentration (i.e. NIS 1000); refer to adjuvant chart for example products.


| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| - | - | $\begin{aligned} & 1.7 \text { or } \\ & 2.2 \\ & (S) \\ & \hline \end{aligned}$ | - | - | $\begin{gathered} 1.7 \text { or } \\ 2.2 \end{gathered}$ | - | - | $\begin{gathered} 1.7 \mathrm{or} \\ 2.2 \end{gathered}$ | $\begin{gathered} 1.7 \text { or } \\ 2.2 \end{gathered}$ | - | - | $\begin{gathered} 1.7 \mathrm{or} \\ 2.2 \end{gathered}$ | $\begin{gathered} 1.7 \text { or } \\ 2.2 \end{gathered}$ | - | $\begin{aligned} & 1.7 \text { or } \\ & 2.2 \\ & (S) \\ & \hline \end{aligned}$ | $\begin{aligned} \\ \begin{array}{l} 1.7 \text { or } \\ 2.2 \end{array} \end{aligned}$ | $\begin{aligned} & 1.7 \text { or } \\ & 2.2 \\ & (S) \end{aligned}$ | Add trifluralin for improved ryegrass control. Low rate for lighter soils. |
| - | - | $\begin{gathered} 1.1 \text { or } \\ 1.7 \\ \text { (S) } \end{gathered}$ | - | - | $\begin{gathered} 1.1 \text { or } \\ 1.7 \end{gathered}$ | - | - | $\begin{gathered} 1.1 \text { or } \\ 1.7 \end{gathered}$ | $\begin{gathered} 1.1 \text { or } \\ 1.7 \end{gathered}$ | - | - | $\begin{gathered} 1.1 \text { or } \\ 1.7 \end{gathered}$ | $\begin{aligned} 1.1 \\ 1.7 \end{aligned}$ | - | $\begin{gathered} 1.1 \text { or } \\ 1.7 \\ (S) \end{gathered}$ | $\begin{aligned} 1.1 \text { or } \\ 1.7 \end{aligned}$ | $\begin{aligned} & 1.1 \text { or } \\ & 1.7 \\ & (S) \end{aligned}$ | Low rate for lighter soils. |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | 2.5 | - | - | - |  |
| $\begin{gathered} 0.83- \\ 1.1 \end{gathered}$ | - | - | - | - | - | - | - | - | - | - | - | - | $\begin{gathered} 0.83- \\ 1.1 \end{gathered}$ | $: \begin{gathered} 0.83- \\ 1.1 \end{gathered}$ | $\begin{gathered} 0.83- \\ 1.1 \end{gathered}$ | $-\begin{gathered} 0.83- \\ 1.1 \end{gathered}$ | - | Lower rate for lighter soils. |
| $\begin{gathered} 0.55- \\ 0.83 \end{gathered}$ | - | - | - | - | - | - | - | - | - | - | - | - | $\begin{gathered} 0.55- \\ 0.83 \end{gathered}$ | $\begin{gathered} 0.55- \\ 0.83 \end{gathered}$ | $\begin{gathered} 0.55- \\ 0.83 \end{gathered}$ | $\begin{gathered} 0.55- \\ 0.83 \end{gathered}$ | - |  |
| - | - | - | - | - | - | - | - | $\begin{aligned} & 1.25 \\ & (\mathrm{~s}) \end{aligned}$ | - | - | - | 1.25 | - | - | $\begin{aligned} & 1.25 \\ & (\mathrm{~S}) \end{aligned}$ | - | 1.25 | Sow at 30 mm . |
| - | $\begin{gathered} 0.75- \\ 1.5 \\ (S) \end{gathered}$ | $\begin{gathered} 0.75- \\ 1.5 \\ (\mathrm{~S}) \end{gathered}$ | - | - | $\begin{aligned} & 0.5- \\ & 0.75 \\ & (S)- \\ & 1.5 \end{aligned}$ | - | - | $\begin{aligned} & 0.5- \\ & 0.75 \\ & (S)- \\ & 1.5 \end{aligned}$ | - | - | - | $\begin{gathered} 0.5- \\ 0.75 \\ (S)- \\ 1.5 \end{gathered}$ | $\begin{gathered} 0.75- \\ 1.5 \\ (S) \end{gathered}$ | $\begin{gathered} 0.75- \\ 1.5 \\ (S) \end{gathered}$ | $\begin{gathered} 0.5- \\ 0.75 \\ \text { (S)- } \\ 1.5 \end{gathered}$ | $\begin{gathered} 0.5- \\ 0.75 \\ \text { (S)- } \\ 1.5 \end{gathered}$ | - | Low rates generally provide suppression and shorter residual. |
| - | $\begin{aligned} & 0.5- \\ & 1.25 \\ & \text { (S) } \end{aligned}$ | $\begin{aligned} & 0.5- \\ & 0.9 \\ & (5)- \\ & 1.25 \end{aligned}$ | - | - | $\begin{aligned} & 1.5- \\ & 0.5- \\ & 0.9 \\ & (S)- \\ & 1.25 \end{aligned}$ | - | - | $\begin{aligned} & 0.5- \\ & 1.25 \end{aligned}$ | - | - | - | $\begin{aligned} & 0.5- \\ & 1.25 \end{aligned}$ | $\begin{aligned} & 0.9- \\ & 1.25 \\ & (5) \end{aligned}$ | $\begin{aligned} & 0.9- \\ & 1.25 \\ & (\mathrm{~S}) \end{aligned}$ | $\begin{aligned} & 0.5- \\ & 0.9 \\ & (\mathrm{~s})- \\ & 1.25 \end{aligned}$ | $\begin{aligned} & 0.5- \\ & 0.9 \\ & (\mathrm{~S})- \\ & 1.25 \end{aligned}$ | $\begin{aligned} & 0.5- \\ & 0.9 \\ & (\mathrm{~s})- \\ & 1.25 \end{aligned}$ |  |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | 118 | - | - | - |  |
| $\begin{gathered} 0.28- \\ 0.73 \end{gathered}$ | - | $\begin{gathered} 0.28- \\ 0.73 \end{gathered}$ | - | - | $\begin{gathered} 0.28- \\ 0.73 \end{gathered}$ | - | - | - | $\begin{gathered} 0.28- \\ 0.73 \end{gathered}$ | $\begin{gathered} 0.28- \\ 0.73 \end{gathered}$ | $\begin{gathered} 0.28- \\ 0.73 \end{gathered}$ | $\begin{gathered} 0.28- \\ 0.73 \end{gathered}$ | $-\begin{gathered} 0.28- \\ 0.73 \end{gathered}$ | $\begin{gathered} 0.28- \\ 0.73 \end{gathered}$ | $-\begin{gathered} 0.28- \\ 0.73 \end{gathered}$ | $\begin{gathered} 0.28- \\ 0.73 \end{gathered}$ | $\begin{gathered} 0.28- \\ 0.73 \end{gathered}$ | Rate influenced by soil type. There are extensive crop safety considerations, including variety; refer label. |
| - | - | - | - | - | 70 | - | 70 | $\begin{aligned} & 70- \\ & 100 \end{aligned}$ | - | 70 | - | - | 70 | 70 | 70 | 70 | 70 | Some weeds might not be completely controlled, but growth will be suppressed. |
| - | - | - | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | - | - | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ |  | $\stackrel{0.86-}{1.2}$ | - | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | $\begin{gathered} 0.86- \\ 1.2 \\ (\mathrm{~S}) \end{gathered}$ | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | $\begin{gathered} 0.86- \\ 1.2 \\ (\mathrm{~S}) \end{gathered}$ | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | Low rate for lighter soils. Sow 30 mm , preferably 50 mm , deep. Do not use $>0.86 \mathrm{~kg} / \mathrm{ha}$ if soil $\mathrm{pH}>8$. |
| - | - | - | $\begin{aligned} & 0.6- \\ & 0.86 \\ & 0.8 \end{aligned}$ | $\begin{aligned} & 0.6- \\ & 0.86 \end{aligned}$ | $\begin{aligned} & 0.6- \\ & 0.86 \end{aligned}$ | - | - | $\begin{aligned} & 0.6- \\ & 0.86 \end{aligned}$ |  | $\begin{aligned} & 0.6- \\ & 0.86 \end{aligned}$ | - | $\begin{aligned} & 0.6- \\ & 0.86 \end{aligned}$ | $\begin{aligned} & 0.6- \\ & 0.86 \\ & \text { (s) } \end{aligned}$ | $\begin{aligned} & 0.6- \\ & 0.86 \end{aligned}$ | $\begin{aligned} & 0.6- \\ & 0.86 \\ & (\mathrm{~S}) \end{aligned}$ | $\begin{aligned} & 0.6- \\ & 0.86 \end{aligned}$ | $\begin{aligned} & 0.6- \\ & 0.86 \end{aligned}$ |  |
| - | - | $\begin{aligned} & 1.2- \\ & 1.7 \\ & (S) \end{aligned}$ | - | - | - | - | - | - | - | - | - | - | - | - | - | - | $\begin{aligned} & 1.2- \\ & 1.7 \end{aligned}$ | Rate influenced by soil type; refer label. |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | Apply in a tank mix to improve control. |
| - | $\begin{aligned} & 180 \\ & (\mathrm{~S}) \end{aligned}$ | $\begin{aligned} & 180 \\ & \text { (S) } \end{aligned}$ | - | - | - | $\begin{aligned} & 180 \\ & \text { (s) } \end{aligned}$ | - | $\begin{aligned} & 180 \\ & (\mathrm{~S}) \end{aligned}$ | $\begin{aligned} & 180 \\ & (\mathrm{~s}) \end{aligned}$ | - | - | $\begin{aligned} & 180 \\ & \text { (S) } \end{aligned}$ | - | $\begin{aligned} & 180 \\ & \text { (S) } \end{aligned}$ | $\begin{aligned} & 180 \\ & \text { (S) } \end{aligned}$ | - | $\begin{aligned} & 180 \\ & \text { (S) } \end{aligned}$ | Avoid light soil types as crop damage might occur. |


| Note: example trade names shown. Others may be available at different concentrations. See labels for details. |  |  |  |  |  |  |  |  |  | $\begin{aligned} & \stackrel{n}{0} \\ & \frac{0}{3} \\ & \frac{0}{3} \end{aligned}$ |  |  |  | $\begin{aligned} & \text { Ј } \\ & \stackrel{0}{u} \\ & \text { U0 } \\ & \text { 응 } \end{aligned}$ |  | $\overline{0}$ 0 en 0 0 0 0 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Bladex ${ }^{\ominus}$ <br> (cyanazine 900) | 5 | 2nd node <br> - first <br> flower | kg/ha | $\begin{aligned} & 80- \\ & 200 \\ & \hline \end{aligned}$ | - | $\begin{gathered} 0.85 \\ \text { or } 1.1 \end{gathered}$ | $\begin{aligned} & 0.85- \\ & 1.1 .0 \\ & (1.0 \end{aligned}$ | $\begin{aligned} & 0.85- \\ & 1.1 .0 \\ & (S) \end{aligned}$ | - | - | - | - | - | $\begin{array}{\|c\|} \hline 0.85 \\ \text { or } 1.1 \end{array}$ | - | - | $\begin{array}{\|c\|c} 0.85 \\ \text { or } 1.1 \end{array}$ |
| Broadstrike ${ }^{\circ}$ (flumetsulam 800) | 2 | 2-6 node | g/ha | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | - | - | - | - | - | - | 25 | 25 | 25 | - | 25 | - | - |
| Brodal ${ }^{\circledR}$ Options (diflufenican 500) | 12 | 3rd node flowering | $\begin{gathered} \mathrm{mL} / \\ \mathrm{ha} \end{gathered}$ | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | - | - | - | - | - | - | $\begin{aligned} & 200 \\ & (\mathrm{~S}) \end{aligned}$ | - | - | $\begin{aligned} & 200 \\ & (5) \end{aligned}$ | $\begin{aligned} & 125- \\ & 150^{*} \\ & \text { or } 200 \end{aligned}$ | $\begin{aligned} & 200 \\ & (5) \end{aligned}$ | 200 |
| Diclofop-methyl 375 | 1 | Not stated | L/ha | 80 | - | 1.0 | - | - | - | 1.5-2 |  |  |  |  |  |  |  |
| Elantra ${ }^{\circ}$ Xtreme ${ }^{\text {e }}$ (quizalofop-pethyl 200) | 1 | Not stated | $\begin{gathered} \mathrm{mL/} / \\ \mathrm{ha} \end{gathered}$ | >50 | - | $\begin{gathered} 150- \\ 190 \end{gathered}$ | 125 | $\begin{gathered} 150- \\ 190 \end{gathered}$ | - | $\begin{array}{\|c} 65 \text { or } \\ 125 \end{array}$ |  |  |  |  |  |  |  |
| Factor ${ }^{\circledR}$ WG (butroxydim 250) | 1 | Up to flowering | g/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | $\begin{aligned} & 80- \\ & 180^{*} \end{aligned}$ | $\begin{aligned} & 80- \\ & 180 \end{aligned}$ | ${ }_{180}^{80}$ | $\begin{aligned} & 80- \\ & 180^{*} \end{aligned}$ | - | $\begin{aligned} & 80- \\ & 180 \end{aligned}$ |  |  |  |  |  |  |  |
| Fusilade ${ }^{\ominus}$ Forte (fluazifop-p-ethyl 128) | 1 | Not stated | L/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | - | - | - | 0.5 | - | - |  |  |  |  |  |  |  |
| Intercept ${ }^{\ominus}$ (imazamox 33 + imazapyr 15) IMI tolerant varieties only | 2 | 3-6 node | L/ha | >70 | - | $\begin{aligned} & 0.6- \\ & 0.75 \\ & (5) \end{aligned}$ | $\begin{gathered} 0.375- \\ 0.75 \end{gathered}$ | $\begin{gathered} 0.375- \\ 0.75 \end{gathered}$ | $\begin{aligned} & 0.6- \\ & 0.75 \\ & (S) \end{aligned}$ | $\begin{gathered} 0.375- \\ 0.75 \end{gathered}$ | - | $\begin{aligned} & 0.6- \\ & 0.75 \\ & (5) \end{aligned}$ | - | - | $\begin{aligned} & 0.6- \\ & 0.75 \end{aligned}$ | - | - |
| MCPA amine 750 | 4 | 3rd node flowering | L/ha | $\begin{aligned} & 30- \\ & 120 \end{aligned}$ | - | - | - | - | - | - | - | - | - | - | $\begin{gathered} 80 \text { or } \\ 100 \end{gathered}$ | - | - |
| Raptor ${ }^{\ominus}$ <br> (imazamox 700) | 2 | Not after 4th node | g/ha | >50 | - | - | 45 | 45 | - | 45 | - | 45 (S) | - | - | - | - | 45 |
| Sencor ${ }^{\ominus}$ <br> (metribuzin 480) | 5 | PSPE - 3 node | L/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | - | $\begin{gathered} 0.28- \\ 0.73 \\ \text { (S) } \end{gathered}$ | - | - | - | - | $\begin{gathered} 0.28- \\ 0.73 \end{gathered}$ | - | - | $\begin{gathered} 0.28- \\ 0.73 \end{gathered}$ | $\begin{gathered} 0.28- \\ 0.73 \end{gathered}$ | $\begin{gathered} 0.28- \\ 0.73 \end{gathered}$ | $\begin{gathered} 0.28- \\ 0.73 \end{gathered}$ |
| Shogun ${ }^{\circ}$ <br> (propaquizafop 100) | 1 | Not stated | L/ha | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | - | 0.45 | 0.2* | 0.3* | - | 0.25* |  |  |  |  |  |  |  |
| Spinnaker ${ }^{\ominus}$ (imazethapyr 700) | 2 | $\begin{array}{\|c\|} \text { Post } \\ \text { emergence } \end{array}$ | g/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | - | - | - | - | - | - | - | - | - | - | - | - | 70 |
| Status ${ }^{\circ}$ <br> (clethodim 240) | 1 | Up to 7 early branching | L/ha | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | $\begin{gathered} 0.15- \\ 0.5 \end{gathered}$ | $\left[\begin{array}{c} 0.15- \\ 0.5 \end{array}\right.$ | $\begin{gathered} 0.175- \\ 0.5 \end{gathered}$ | $\begin{gathered} 0.175- \\ 0.5 \end{gathered}$ | $\begin{gathered} 0.25- \\ 0.5 \end{gathered}$ | $\begin{gathered} 0.175- \\ 0.5 \end{gathered}$ |  |  |  |  |  |  |  |
| Verdict ${ }^{\oplus}$ <br> (haloxyfop 520) | 1 | 2-leaf before flowering | $\begin{gathered} \mathrm{mL} / \\ \mathrm{ha} \end{gathered}$ | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | $\begin{gathered} 75- \\ 100 \end{gathered}$ | $\begin{aligned} & 75- \\ & 100 \end{aligned}$ | 50-75 | 50-75 | - | $\begin{gathered} 37.5- \\ 100 \end{gathered}$ |  |  |  |  |  |  |  |

Adjuvant key: $\mathrm{MO}=$ mineral oil, , MOS $=$ mineral oil plus surfactant, $M S O=$ methylated seed oil, NIS $=$ non-ionic surfactant.
NIS products might indicate a specific concentration (i.e. NIS 1000); refer to adjuvant chart for example products.

| 尤 |  |  |  |  | $\begin{aligned} & \text { n } \\ & \frac{0}{5} \\ & \stackrel{H}{0} \\ & \stackrel{H}{n} \end{aligned}$ |  |  |  |  |  | $\bar{\circ}$ ì |  |  |  |  |  |  | Comments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| - | - | $\begin{gathered} 0.85- \\ 1.1 .0 \\ (S) \end{gathered}$ | - | - | $\begin{gathered} 0.85 \text { or } \\ 1.1 \end{gathered}$ | - | $\begin{gathered} 0.85 \\ \text { or } 1.1 \end{gathered}$ | $\begin{gathered} 0.85 \\ \text { or } 1.1 \end{gathered}$ | - | - | - | $\begin{gathered} 0.85 \\ \text { or } 1.1 \end{gathered}$ | $\begin{gathered} 0.85 \\ \text { or } 1.1 \end{gathered}$ | - | $\begin{gathered} 0.85- \\ 1.1 .0 \\ (S) \end{gathered}$ | $\begin{gathered} 0.85 \\ \text { or } 1.1 \end{gathered}$ | $\begin{gathered} 0.85- \\ 1.1 .0 \\ \text { (S) } \end{gathered}$ | Do not apply to Wirrega variety. High rate for high weed pressure. |
| - | - | - | 25 | 25 | 25 | - | - | - | 25 | - | - | - | - | - | 25 (S) | 25 |  | Crop discolouration, stunting and/or delayed flowering can occur. Do not tank mix or add adjuvants. |
| - | - | - | - | $\begin{aligned} & 200 \\ & (S) \end{aligned}$ | $\begin{aligned} & 150- \\ & 200 \end{aligned}$ | $\begin{aligned} & 200 \\ & (\mathrm{~S}) \end{aligned}$ | $\begin{gathered} 125- \\ 150^{*} \\ \text { or } \\ 200 \end{gathered}$ | $\begin{aligned} & 200 \\ & (S) \end{aligned}$ | $\begin{aligned} & 200 \\ & (5) \end{aligned}$ | $\begin{aligned} & 200 \\ & (\mathrm{~S}) \end{aligned}$ | $\begin{aligned} & 200 \\ & (\mathrm{~S}) \end{aligned}$ | - | - | $\begin{aligned} & 200 \\ & (5) \end{aligned}$ | 200 | $\left[\begin{array}{l} 150- \\ 200 \end{array}\right.$ | $\begin{aligned} & 200 \\ & (\mathrm{~s}) \end{aligned}$ | *Can add MCPA amine to assist control; refer label. Also has residual activity. |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Do not spray if temperature is $>25^{\circ} \mathrm{C}$. Adjuvant: NIS 0.25\%. |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Adjuvant: MSO 1\% or NIS 0.2\%. |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | *Must be combined with clethodim or a FOP herbicide; refer label. Adjuvant: MSO $0.5 \%$. |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| - | - | $\begin{array}{\|l\|} 0.6- \\ 0.75 \end{array}$ | - | $\begin{aligned} & 0.6- \\ & 0.75 \end{aligned}$ | $\begin{gathered} 0.375- \\ 0.75 \end{gathered}$ | - | - | - | - | - | - | - | $\begin{aligned} & 0.6- \\ & 0.75 \\ & (5) \end{aligned}$ | - | $\begin{aligned} & 0.3- \\ & 0.75 \end{aligned}$ | $\begin{aligned} & 0.3- \\ & 0.75 \end{aligned}$ | - | Adjuvant: MSO 0.5\%. |
| - | - | - | - | - | - | - | $\begin{gathered} 80 \text { or } \\ 100 \end{gathered}$ | - | - | - | - | - | - | - | - | - | - | Add diflufenican; refer label. Application rate increases with weed size. |
| - | 45 | - | 45 | - | 45 | - | - | - | 45 (S) | - | - | - | 45 (S) | - | 45 (S) | 45 | 45 (S) | Adjuvant: NIS 1000 0.2\%. There are extensive crop safety considerations; refer label |
| $\begin{aligned} & 0.28- \\ & 0.73 \end{aligned}$ | $\begin{gathered} 0.28- \\ 0.73 \end{gathered}$ | $\begin{gathered} 0.28- \\ 0.73 \end{gathered}$ | - | - | $\begin{gathered} 0.28- \\ 0.73 \end{gathered}$ | - | - | $\begin{gathered} 0.28- \\ 0.73 \end{gathered}$ | $\begin{gathered} 0.28- \\ 0.73 \end{gathered}$ | - | $\begin{gathered} 0.28- \\ 0.73 \end{gathered}$ | $\begin{gathered} 0.28- \\ 0.73 \end{gathered}$ | $\begin{gathered} 0.28- \\ 0.73 \end{gathered}$ | $\begin{aligned} & 0.28- \\ & 0.73 \end{aligned}$ | $\begin{gathered} 0.28- \\ 0.73 \end{gathered}$ | $\begin{gathered} 0.28- \\ 0.73 \end{gathered}$ | $\begin{gathered} 0.28- \\ 0.73 \end{gathered}$ | Rate influenced by soil type. There are extensive crop safety considerations, including variety; refer label. |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | *Add NIS 0.2\% or MSO 0.5\%. |
| - | - | - | - | - | 70 | - | - | - | - | - | - | - | - | 70 | - | - | 70 | Add NIS 0.2\%. |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Adjuvant: MSO 1\% or MOS 0.5-1\%. |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Application rate determined by weed size, adjuvant type and mix partner; refer label. Adjuvant: MSO or MOS. |


| Note: example trade names shown. Others may be available at different concentrations. See labels for details. |  |  | $\begin{aligned} & \stackrel{0}{3} \\ & \stackrel{y}{0} \\ & \stackrel{0}{5} \end{aligned}$ |  |  |  |  |  |  | $\begin{aligned} & \tilde{n} \\ & 0 \\ & \frac{0}{3} \end{aligned}$ |  | $\overline{0}$ 0 0 0 0 0 0 0 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Avadex ${ }^{\text {® }}$ Xtra (tri-allate 500) | 15 | PSI | L/ha | 30-100 | - | - | - | - | - | 1.6 | - | - | - |
| Boxer Gold ${ }^{\bullet}$ (prosulfocarb 800 + S-metolachlor 120) | 15 | IBS | L/ha | >50 | - | 2.5 | - | - | 2.5 | - | - | - | - |
| Outlook ${ }{ }^{\circ}$ <br> (dimethenamid-p 720) | 15 | IBS | L/ha | 70-120 | - | 1.0 | - | - | - | - | - | - | - |
| Reflex ${ }^{\text {© }}$ (fomesafen 240) Narrow-leaf lupin only | 14 | IBS | L/ha | >50 | - | - | - | - | - | - | $\begin{aligned} & 0.75- \\ & 1.5 \text { (S) } \end{aligned}$ | - | - |
|  |  | PSPE |  |  | - | - | - | - | - | - | $\begin{gathered} 0.9- \\ 1.25(S) \end{gathered}$ | - | $\begin{aligned} & 0.9- \\ & 1.25 \end{aligned}$ |
| Rifle ${ }^{\oplus} 440$ <br> (pendimethalin 440) | 3 | IBS | L/ha | 50-200 | - | $\begin{aligned} & 1.5- \\ & 2.25 \end{aligned}$ | - | - | $\begin{gathered} 1.5- \\ 2.25(\mathrm{~S}) \end{gathered}$ | $\begin{gathered} 1.5- \\ 2.25(\mathrm{~S}) \end{gathered}$ | - | - | - |
| Rustler® (propyzamide 500) | 3 | IBS | L/ha | $\begin{aligned} & \text { Not } \\ & \text { stated } \end{aligned}$ | 1.0-2.0 | 1.0-2.0 | 1.0-2.0 | 1.0-2.0 | 1.0-2.0 | 1.0-2.0 | - | - | - |
| Sakura ${ }^{\text {( }}$ (pyroxasulfone 850) | 15 | IBS | g/ha | 50-100 | 118 | 118 | 118 | 118 (S) | 118 | 118 (S) | - | - | - |
| Simazine 900 | 5 | PSPE | kg/ha | 50-100 | - | $\begin{aligned} & 0.8^{*}- \\ & \end{aligned}$ | $\begin{aligned} & 0.8^{-} \\ & \end{aligned}$ | $\begin{gathered} 0.8-2.2 \\ (S)^{*} \end{gathered}$ | - | $\begin{gathered} 0.8-2.2 \\ (5)^{*} \end{gathered}$ | $\begin{aligned} & 0.8- \\ & \\ & \hline \end{aligned}$ | $\begin{aligned} & 0.8^{-} \\ & \end{aligned}$ | - |
| Terbyne ${ }^{\bullet}$ Xtreme ${ }^{\ominus}$ (terbuthylazine 875) | 5 | IBS | kg/ha | >50 | $\begin{aligned} & 0.86- \\ & 1.2(\mathrm{~S}) \end{aligned}$ | $\begin{aligned} & 0.86- \\ & 1.2(\mathrm{~S}) \end{aligned}$ | - | - | $\begin{aligned} & 0.86- \\ & 1.2(\mathrm{~S}) \end{aligned}$ | $\begin{aligned} & 0.86- \\ & 1.2 \text { (S) } \end{aligned}$ | - | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ |
|  |  | PSPE |  |  | $\begin{gathered} 0.6- \\ 0.86(\mathrm{~S}) \end{gathered}$ | $\begin{gathered} 0.6- \\ 0.86 \text { (S) } \end{gathered}$ | - | - | $\begin{gathered} 0.6- \\ 0.86 \text { (S) } \end{gathered}$ | $\begin{gathered} 0.6- \\ 0.86(\mathrm{~S}) \end{gathered}$ | - | $\begin{aligned} & 0.6- \\ & 0.86 \\ & 0 . \end{aligned}$ | $\begin{aligned} & 0.6- \\ & 0.86 \end{aligned}$ |
| TriflurX ${ }^{\circ}$ (trifluralin 480) | 3 | PSI, IBS | L/ha | 70-450 | 1.2-1.7 | 1.2-1.7 | - | - | - | - | - | - | - |
| Ultro ${ }^{\circ}$ (carbentamide 900) | 23 | IBS | kg/ha | 50-150 | - | 1.1-2.3 | 1.1-2.3 | 1.1-2.3 | - | - | - | - | - |

Incorporation key: IBS = incorporated by sowing, PSI = pre-sowing incorporated, PSPE = post-sowing, pre-emergent.
Adjuvant key: $\mathrm{MO}=$ mineral oil, $\mathrm{MOS}=$ mineral oil plus surfactant, $\mathrm{MSO}=$ methylated seed oil, NIS $=$ non-ionic surfactant
NIS products might indicate a specific concentration (i.e. NIS 1000); refer to adjuvant chart for example products.

|  |  | $\frac{\tilde{y}}{\stackrel{y}{0}}$ |  |  |  |  |  |  |  |  | $\begin{aligned} & \text { O2 } \\ & \frac{1}{3} \\ & \frac{0}{3} \\ & \hline \end{aligned}$ |  | Comments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| - | - | - | - | - | - | - | - | - | 2.5 | - | - | - |  |
| - | - | - | - | - | - | - | - | - | - | - | - | - | Will only provide suppression in high populations. |
| $\begin{aligned} & 0.75- \\ & 1.5 \text { (S) } \end{aligned}$ | $\begin{aligned} & 0.75- \\ & 1.5 \text { (S) } \end{aligned}$ | - | - | $\begin{gathered} 0.5- \\ 0.75(5) \\ -1.5 \end{gathered}$ | $\begin{gathered} 0.5- \\ 0.75(5) \\ -1.5 \end{gathered}$ | - | $\begin{gathered} 0.5- \\ 0.75(5) \\ -1.5 \end{gathered}$ | $\begin{aligned} & 0.75- \\ & 1.5 \text { (S) } \end{aligned}$ | $\begin{aligned} & 0.75- \\ & 1.5 \text { (S) } \end{aligned}$ | $\begin{gathered} 0.5- \\ 0.75(5) \\ -1.5 \end{gathered}$ | $\begin{gathered} 0.5- \\ 0.75(S) \\ -1.5 \end{gathered}$ | - | Low rates generally provide suppression and shorter residual. |
| $\begin{gathered} 0.5- \\ 1.25(\mathrm{~S}) \end{gathered}$ | $\begin{aligned} & 0.5-0.9 \\ & (S)- \\ & 1.25 \\ & \hline 1 \end{aligned}$ | - | - | $\begin{aligned} & 0.5-0.9 \\ & \text { (S)- } \\ & 1.25 \end{aligned}$ | $\begin{aligned} & 0.5- \\ & 1.25 \end{aligned}$ | - | $\begin{aligned} & 0.5- \\ & 1.25 \end{aligned}$ | $\begin{gathered} 0.9- \\ 1.25(S) \end{gathered}$ | $\begin{gathered} 0.9- \\ 1.25(\mathrm{~S}) \end{gathered}$ | $\begin{aligned} & 0.5-0.9 \\ & (S)- \\ & 1.25 \end{aligned}$ | $\begin{aligned} & 0.5-0.9 \\ & (S)- \\ & 1.25 \end{aligned}$ | $\begin{aligned} & 0.5-0.9 \\ & (S)- \\ & 1.25 \end{aligned}$ |  |
| - | - | - | - | - | - | - | - | - | - | - | - | $\begin{aligned} & 1.5- \\ & 2.25 \end{aligned}$ |  |
| - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| - | - | - | - | - | - | - | - | - | 118 | - | - | - |  |
| - | $\begin{aligned} & 0.8^{-} \\ & \end{aligned}$ | - | - | $\begin{aligned} & 0.8^{-} \\ & 2^{*} \end{aligned}$ | - | - | - | - | - | - | $\begin{aligned} & 0.8- \\ & e^{*} \end{aligned}$ | $\begin{aligned} & 0.8- \\ & \end{aligned}$ | * $0.8-1.1 \mathrm{~kg} / \mathrm{ha}$ on light soil, $1.3-2.2 \mathrm{~kg} / \mathrm{ha}$ on heavy soils; refer label. |
| - | - | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | $\stackrel{0.86-}{1.2}$ | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | $\begin{aligned} & 0.86- \\ & 1.2(\mathrm{~S}) \end{aligned}$ | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | $\begin{aligned} & 0.86- \\ & 1.2(\mathrm{~S}) \end{aligned}$ | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | Low rate for lighter soils. Sow 30 mm , preferably 50 mm , deep. Do not use $>0.86 \mathrm{~kg} / \mathrm{ha}$ if soil $\mathrm{pH}>8$. |
| - | - | $\begin{aligned} & 0.6- \\ & 0.86 \end{aligned}$ | $\begin{aligned} & 0.6- \\ & 0.86 \end{aligned}$ | $\begin{aligned} & 0.6- \\ & 0.86 \end{aligned}$ | $\begin{aligned} & 0.6- \\ & 0.86 \end{aligned}$ | $\begin{aligned} & 0.6- \\ & 0.86 \end{aligned}$ | $\begin{gathered} 0.6- \\ 0.86 \end{gathered}$ | $\begin{gathered} 0.6- \\ 0.86(\mathrm{~S}) \end{gathered}$ | $\begin{aligned} & 0.6- \\ & 0.86 \end{aligned}$ | $\begin{gathered} 0.6- \\ 0.86(\mathrm{~S}) \end{gathered}$ | $\begin{aligned} & 0.6- \\ & 0.86 \end{aligned}$ | $\begin{aligned} & 0.6- \\ & 0.86 \end{aligned}$ |  |
| - | $\underset{(S)}{1.2-1.7}$ | - | - | - | - | - | - | - | - | - | - | 1.2-1.7 | Rate influenced by soil type; refer label. |
| - | - | - | - | - | - | - | - | - | - | - | - | - | Apply in a tank mix to improve control. |

Table 35. Herbicides for weed control for lupin - post-emergence.

| Note: example trade names shown. Others may be available at different concentrations. See labels for details. |  |  |  |  |  |  |  |  |  | $\begin{aligned} & \text { n } \\ & 0 \\ & \frac{0}{3} \\ & \hline \end{aligned}$ |  | $\begin{aligned} & \text { Ј } \\ & \stackrel{0}{0} \\ & \text { U0 } \\ & \text { 응 } \end{aligned}$ | $\begin{aligned} & \text { 는 } \\ & \text { 흧 } \\ & \text { 든 } \end{aligned}$ | $\overline{0}$ 0 en 0 0 0 0 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Brodal ${ }^{\bullet}$ Options (diflufenican 500) | 12 | 2-leafprimary budding | mL/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | - | - | - | - | - | - | 200 (S) | 200 (S) | 200 | 200 (S) |
| Diclofop-methyl 375 | 1 | Not stated | L/ha | 80 | - | 1.0 | - | - | - | 1.5-2.0 |  |  |  |  |
| Elantra ${ }^{\circ}$ Xtreme ${ }^{\oplus}$ (quizalofop-p-ethyl 200) | 1 | Not stated | mL/ha | >50 | - | $\begin{aligned} & 150- \\ & 190 \end{aligned}$ | 125 | $\begin{gathered} 150- \\ 190 \end{gathered}$ | - | $\begin{gathered} 65 \text { or } \\ 125 \end{gathered}$ |  |  |  |  |
| Factor ${ }^{\ominus}$ WG (butroxydim 250) | 1 | Not stated | g/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | $\begin{aligned} & 80- \\ & 180^{*} \end{aligned}$ | $\begin{aligned} & 80- \\ & 180 \end{aligned}$ | $\begin{aligned} & 80- \\ & 180 \end{aligned}$ | $\begin{aligned} & 80- \\ & 180^{*} \end{aligned}$ | - | $\begin{aligned} & 80- \\ & 180 \end{aligned}$ |  |  |  |  |
| Fusilade ${ }^{\oplus}$ Forte (fluazifop-p-ethyl 128) | 1 | Not stated | L/ha | >50 | $\begin{gathered} 0.4 \text { or } \\ 0.82 \end{gathered}$ | $\begin{gathered} 0.4 \text { or } \\ 0.82 \end{gathered}$ | $\begin{array}{\|c\|} \hline 0.4 \text { or } \\ 0.82 \\ \hline \end{array}$ | $\begin{gathered} 0.4 \text { or } \\ 0.82 \end{gathered}$ | - | $\begin{aligned} & 0.4 \text { or } \\ & 0.82 \end{aligned}$ |  |  |  |  |
| Shogun ${ }^{\ominus}$ (propaquizafop 100) | 1 | Not stated | L/ha | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | - | 0.45 | 0.2* | 0.3* | - | 0.25* |  |  |  |  |
| Status ${ }^{\circ}$ (clethodim 240) | 1 | Up to 80\% flower | L/ha | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | $\begin{gathered} 0.15- \\ 0.5 \end{gathered}$ | $\begin{gathered} 0.15- \\ 0.5 \end{gathered}$ | $\begin{gathered} 0.175- \\ 0.5 \end{gathered}$ | $\begin{gathered} 0.175- \\ 0.5 \end{gathered}$ | $\begin{gathered} 0.25- \\ 0.5 \end{gathered}$ | $\begin{gathered} 0.175- \\ 0.5 \end{gathered}$ |  |  |  |  |
| Verdict® ${ }^{(h a l o x y f o p ~ 520) ~}$ | 1 | 2-leaf - <br> before flowering | mL/ha | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | $\begin{aligned} & 75- \\ & 100 \end{aligned}$ | $\begin{aligned} & 75- \\ & 100 \end{aligned}$ | 50-75 | 50-75 | - | $\begin{gathered} 37.5- \\ 100 \end{gathered}$ |  |  |  |  |

Adjuvant key: MO = mineral oil, MOS = mineral oil plus surfactant, MSO = methylated seed oil, NIS = non-ionic surfactant.
NIS products might indicate a specific concentration (i.e. NIS 1000); refer to adjuvant chart for example products.

|  |  |  |  |  |  |  |  | $\begin{aligned} & \overline{0} \\ & \text { ì } \end{aligned}$ |  | $\begin{aligned} & \frac{\sqrt{n}}{0} \\ & \frac{\underline{0}}{0} \\ & \frac{0}{3} \end{aligned}$ | $\begin{aligned} & \text { 을 } \\ & \frac{3}{3} \\ & \frac{0}{3} \end{aligned}$ |  | Comments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 200 | 200 (S) | $\begin{aligned} & 150- \\ & 200 \end{aligned}$ | 200 (S) | 200 | 200 (S) | 200 (S) | 200 (S) | 200 (S) | 200 (S) | 200 | $\begin{aligned} & \begin{array}{l} 150- \\ 200 \end{array} \end{aligned}$ | 200 (S) | Also has residual activity. |
|  |  |  |  |  |  |  |  |  |  |  |  |  | Do not spray if temperature is $>25^{\circ} \mathrm{C}$. Adjuvant: NIS $0.25 \%$. |
|  |  |  |  |  |  |  |  |  |  |  |  |  | Adjuvant: MSO $1 \%$ or NIS $0.2 \%$. |
|  |  |  |  |  |  |  |  |  |  |  |  |  | *Must be combined with clethodim or a FOP herbicide; refer label. Adjuvant: MSO 0.5\%. |
|  |  |  |  |  |  |  |  |  |  |  |  |  | Low rate for 2-5-leaf weeds, high rate for 5 -leaf to early tillering weeds. |
|  |  |  |  |  |  |  |  |  |  |  |  |  | *Add NIS 0.2\% or MSO 0.5\%. |
|  |  |  |  |  |  |  |  |  |  |  |  |  | Adjuvant: MSO $1 \%$ or MOS 0.5-1\%. |
|  |  |  |  |  |  |  |  |  |  |  |  |  | Application rate determined by weed size, adjuvant type and mix partner; refer label. Adjuvant: MSO or MOS. |

Table 36. Herbicides for weed control for faba bean and lentil - pre-emergence - page 1 of 2 .

| Note: example trade names shown. Others may be available at different concentrations. See labels for details. |  |  |  |  |  |  |  |  |  | $\begin{aligned} & \tilde{n} \\ & \frac{0}{0} \\ & \frac{0}{3} \end{aligned}$ |  |  |  |  | $\begin{aligned} & \text { ず } \\ & \sum_{0}^{0} \\ & \text { ï } \end{aligned}$ | $\begin{aligned} & \text { 는 } \\ & \text { 믇 } \\ & \text { 든 } \end{aligned}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Avadex ${ }^{\circ}$ Xtra (tri- <br> allate 500) Faba bean only | 15 | PSI | L/ha | $\begin{aligned} & 30- \\ & 100 \end{aligned}$ | - | - | - | - | - | 1.6 | - | - | - | - | - | - | - |
| Bladex ${ }^{\circ}$ (cyanazine 900) | 5 | $\begin{aligned} & \text { PSI, IBS, } \\ & \text { PSPPE } \end{aligned}$ | $\begin{aligned} & \mathrm{kg} / \\ & \mathrm{ha} \end{aligned}$ | $\begin{aligned} & 80- \\ & 200 \end{aligned}$ |  | $\begin{gathered} 1.7 \text { or } \\ 2.2 \end{gathered}$ | $\begin{gathered} 1.7 \text { or } \\ 2.2 \\ \text { (S) } \end{gathered}$ | $\begin{gathered} 1.7 \text { or } \\ 2.2 \\ (S) \end{gathered}$ | - | - | - | - |  | - | $\begin{gathered} 1.7 \text { or } \\ 2.2 \end{gathered}$ | - | - |
| Boxer Gold ${ }^{\circ}$ (prosulfocarb 800 + S-metolachlor 120) | 15 | IBS | L/ha | >50 | - | 2.5 | - | - | 2.5 | - | - | - | - | - | - | - | - |
| Diuron ${ }^{900}$ | 5 | IBS | $\begin{aligned} & \mathrm{kg} / \\ & \text { ha } \end{aligned}$ | 40-70 | - | - | - | - | - | - | - | - | - | - | $\begin{array}{\|c} 0.83- \\ 1.1 \end{array}$ | - | - |
|  |  | PSPE |  |  | - | - | - | - | - | - | - | - | - | - | $\begin{gathered} 0.55- \\ 0.83 \end{gathered}$ | - | - |
| Overwatch ${ }^{\circledR}$ <br> (bixlozone 400) <br> Faba bean only | 13 | IBS | L/ha | $\begin{aligned} & 60- \\ & 100 \end{aligned}$ | $\begin{aligned} & 1.25 \\ & (\mathrm{~S}) \end{aligned}$ | 1.25 | $\begin{aligned} & 1.25 \\ & (\mathrm{~S}) \end{aligned}$ | $\begin{aligned} & 1.25 \\ & (\mathrm{~S}) \end{aligned}$ | 1.25 | $\begin{aligned} & 1.25 \\ & (S) \end{aligned}$ | - | $\begin{aligned} & 1.25 \\ & (S) \\ & \text { ( } \end{aligned}$ | - | - | $\begin{aligned} & 1.25 \\ & (\mathrm{~S}) \end{aligned}$ |  | $\begin{aligned} & 1.25 \\ & (S) \end{aligned}$ |
| Reflex ${ }^{\circledR}$ (fomesafen 240) <br> Faba bean only | 14 | IBS | L/ha | >50 | - | - | - | - | - | - | - | - | - | - | $\begin{gathered} 0.75- \\ 1.5 \\ (S) \end{gathered}$ | - | - |
|  |  | PSPE |  |  | - | - | - | - | - | - | - | - | - | - | $\begin{aligned} & 0.9- \\ & 1.25 \\ & \text { (S) } \end{aligned}$ | - | - |
| Reflex ${ }^{\oplus}$ (fomesafen 240) Lentil only | 14 | IBS | L/ha | >50 | - | - | - | - | - | - | - | - | - | - | $\begin{gathered} 0.75- \\ 1.0 \\ \text { (S) } \end{gathered}$ | - | - |
| Rifle ${ }^{\oplus} 440$ (pendimethalin 440) | 3 | IBS | L/ha | $\begin{aligned} & 50- \\ & 200 \end{aligned}$ | - | $\begin{aligned} & 1.5- \\ & 2.25 \end{aligned}$ | - | - | $\begin{gathered} 1.5- \\ 2.25 \\ (\mathrm{~S}) \end{gathered}$ | $\begin{array}{\|c\|} \hline 1.5- \\ 2.25 \\ (\mathrm{~S}) \\ \hline \end{array}$ | - | - | - | - | - | - | - |
| Rustler ${ }^{\ominus}$ <br> (propyzamide 500) | 3 | IBS | L/ha | $\begin{gathered} \text { Not } \\ \text { stated } \end{gathered}$ | $\begin{aligned} & 1.0- \\ & 2.0 \end{aligned}$ | $\begin{gathered} 1.0- \\ 2.0 \end{gathered}$ | $\begin{aligned} & 1.0- \\ & 2.0 \end{aligned}$ | $\begin{aligned} & 1.0- \\ & 2.0 \end{aligned}$ | $\begin{aligned} & 1.0- \\ & 2.0 \end{aligned}$ | $\begin{aligned} & 1.0- \\ & 2.0 \end{aligned}$ | - | - | - | - | - | - | - |
| Sakura ${ }^{\circ}$ (pyroxasulfone 850) Lentil only | 15 | IBS | g/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | 118 | 118 | 118 | $\begin{aligned} & 118 \\ & (\mathrm{~S}) \end{aligned}$ | 118 | $\begin{aligned} & 118 \\ & (S) \end{aligned}$ | - | - | - | - | - | - | - |
| Sencor ${ }^{\ominus}$ (metribuzin 480) Faba bean only | 5 | PSPE | L/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | - | $\begin{gathered} 0.28- \\ 0.58 \\ (\mathrm{~S}) \end{gathered}$ | - | - | - | - | $\begin{gathered} 0.28- \\ 0.58 \end{gathered}$ | - | - | - | $\begin{gathered} 0.28- \\ 0.58 \end{gathered}$ | $\begin{gathered} 0.28- \\ 0.58 \end{gathered}$ | - |
| Simazine 900 | 5 | IBS, PSPE | $\begin{aligned} & \mathrm{kg} / \\ & \mathrm{ha} \end{aligned}$ | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | $\begin{gathered} 0.5 \text { or } \\ 0.8^{*} \end{gathered}$ | $\begin{gathered} 1.0 \text { or } \\ 1.4 \end{gathered}$ | $\begin{gathered} 1.0 \text { or } \\ 1.4 \end{gathered}$ | $\begin{gathered} 1.0 \text { or } \\ 1.4 \end{gathered}$ | - | $\begin{aligned} & 0.8- \\ & 2.2 \\ & (\mathrm{~S})^{*} \end{aligned}$ | - | - | - | $\begin{gathered} 0.5 \text { or } \\ 0.8^{*} \end{gathered}$ | $\begin{gathered} 1.0 \text { or } \\ 1.4 \end{gathered}$ | - | - |
| Spinnaker® (imazethapyr 700) Faba bean only | 2 | PSPE | g/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | - | 70 | 70 | - | - | 70 | $\begin{aligned} & 70- \\ & 100 \end{aligned}$ | - | - | - | $\begin{aligned} & 70- \\ & 100 \end{aligned}$ | - | - |
| Terbyne ${ }^{\bullet}$ Xtreme ${ }^{\ominus}$ (terbuthylazine 875) | 5 | IBS | $\begin{aligned} & \mathrm{kg} / \\ & \mathrm{ha} \end{aligned}$ | >50 | $\begin{gathered} 0.86- \\ 1.2 \\ (S) \\ \hline \end{gathered}$ | $\begin{gathered} 0.86- \\ 1.2 \\ (\mathrm{~S}) \end{gathered}$ | - | - | $\begin{gathered} 0.86- \\ 1.2 \\ (S) \end{gathered}$ | $\begin{gathered} 0.86- \\ 1.2 \\ \text { (S) } \\ \hline \end{gathered}$ | - | - | - | - | - | - | - |
|  |  | PSPE Faba bean only |  |  | $\begin{aligned} & 0.6- \\ & 0.86 \\ & (5) \end{aligned}$ | $\begin{gathered} 0.6- \\ 0.86 \\ (\mathrm{~S}) \end{gathered}$ | - | - | $\begin{aligned} & 0.6- \\ & 0.86 \\ & \text { (S) } \end{aligned}$ | $\begin{array}{\|l\|} \hline 151 \\ \hline 0.6- \\ 0.86 \\ \text { (S) } \\ \hline \end{array}$ | - | - | - | - | - | - | - |
| TriflurX® (trifluralin 480) Lentil only | 3 | PSI | L/ha | $\begin{aligned} & 70- \\ & 450 \end{aligned}$ | $\begin{gathered} 0.8- \\ 1.2 \end{gathered}$ | $\begin{aligned} & 0.8- \\ & 1.2 \end{aligned}$ | - | - | - | $\begin{gathered} 0.8- \\ 1.2 \end{gathered}$ | - | - | - | - | - | - | - |
| Ultro (carbentamide 900) | 23 | IBS | $\begin{aligned} & \text { kg/ } \\ & \text { ha } \end{aligned}$ | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | - | $\begin{gathered} 1.1- \\ 1.7 \end{gathered}$ | $\begin{gathered} 1.1- \\ 1.7 \end{gathered}$ | $\begin{gathered} 1.1- \\ 1.7 \end{gathered}$ | - | - | - | - | - | - | - | - | - |
| Valor ${ }^{\circledR}$ /Terrain ${ }^{\circledR}$ (flumioxazin 500) | 14 | $\begin{aligned} & \text { IBS Faba } \\ & \text { bean } \end{aligned}$ | g/ha | >80 | - | - | - | - | - | - | - | $\begin{aligned} & 180 \\ & \text { (S) } \end{aligned}$ | $\begin{aligned} & 180 \\ & \text { (S) } \end{aligned}$ | $\begin{aligned} & 180 \\ & (5) \end{aligned}$ | $\begin{aligned} & 188 \\ & \text { (S) } \end{aligned}$ | - | - |
|  |  | IBS Lentil |  |  | - | - | - | - | - | - | - | $\begin{aligned} & 120 \\ & (\mathrm{~S}) \end{aligned}$ | $\begin{aligned} & 120 \\ & (\mathrm{~S}) \end{aligned}$ | $\begin{aligned} & 120 \\ & (\mathrm{~S}) \end{aligned}$ | $\begin{aligned} & 120 \\ & (\mathrm{~S}) \end{aligned}$ | - | - |

## 

| - | $\begin{gathered} 1.7 \text { or } \\ 2.2 \end{gathered}$ | - | - | - | $\begin{aligned} & 1.7 \text { or } \\ & 2.2 \text { (S) } \end{aligned}$ | - | - | $\begin{gathered} 1.7 \text { or } \\ 2.2 \end{gathered}$ | - | - | $\begin{gathered} 1.7 \text { or } \\ 2.2 \end{gathered}$ | $\begin{gathered} 1.7 \text { or } \\ 2.2 \end{gathered}$ | - | - | - | Add trifluralin for improved ryegrass control. Low rate for lighter soils. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| - | - | - | $\begin{array}{\|c\|} \hline 0.83- \\ 1.1 \end{array}$ | - | - | - | - | - | - | - | - | - | - | - | - | Lower rate for lighter soils. |
| - | - | - | $\begin{gathered} 0.55- \\ 0.83 \end{gathered}$ | - | - | - | - | - | - | - | - | - | - | - | - |  |
| - | - | - | - | - | - | - | - | - | - | - | $\begin{gathered} 1.25 \\ (\mathrm{~S}) \end{gathered}$ | - | - | - | - | Sow at 30 mm . |
| - | - | - | - | $\begin{gathered} 0.75- \\ 1.5 \\ (S) \end{gathered}$ | $\begin{aligned} & 0.75- \\ & 1.5 \text { (S) } \end{aligned}$ | - | - | $\begin{aligned} & 0.5- \\ & 0.75 \\ & \text { (S)- } \\ & 1.5 \end{aligned}$ | - | - | $\begin{aligned} & 0.5- \\ & 0.75 \\ & (5)- \\ & 1.5 \end{aligned}$ | - | - | - | - | Low rates generally provide suppression and shorter residual. |
| - | $\begin{array}{\|l\|} \hline 0.9- \\ 1.25 \end{array}$ | - | - | $\begin{gathered} 0.5- \\ 1.25 \\ (S) \\ \hline \end{gathered}$ | $\begin{gathered} 0.5- \\ 0.9(S) \\ -1.25 \end{gathered}$ | - | - | $\begin{gathered} 1.5- \\ 0.9- \\ 0.9(5) \\ -1.25 \end{gathered}$ | - | - | $\begin{aligned} & 0.5- \\ & 1.25 \end{aligned}$ | - | - | - | - |  |
| - | $\begin{gathered} 0.75- \\ 1.0 \\ (\mathrm{~S}) \end{gathered}$ | - | - | $\begin{gathered} 0.75- \\ 1.0 \\ (S) \\ \hline \end{gathered}$ | $\begin{aligned} & 0.75- \\ & 1.0 \text { (S) } \end{aligned}$ | - | - | $\begin{aligned} & 0.5- \\ & 0.75 \\ & (5)- \\ & 1.0 \end{aligned}$ | - | - | $\begin{gathered} 0.5- \\ 0.55 \\ (S)- \\ 1.0 \end{gathered}$ | - | - | - | - | Low rates generally provide suppression and shorter residual. Can cause transient phytotoxicity. |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| $\begin{gathered} 0.28- \\ 0.58 \end{gathered}$ | $\begin{gathered} 0.28- \\ 0.58 \end{gathered}$ | $\begin{gathered} 0.28- \\ 0.58 \end{gathered}$ | $\begin{gathered} 0.28- \\ 0.58 \end{gathered}$ | - | $\begin{gathered} 0.28- \\ 0.58 \end{gathered}$ | - | - | $\begin{gathered} 0.28- \\ 0.58 \end{gathered}$ | - | - | - | $\begin{gathered} 0.28- \\ 0.58 \end{gathered}$ | $\begin{gathered} 0.28- \\ 0.58 \end{gathered}$ | $\begin{gathered} 0.28- \\ 0.58 \end{gathered}$ | - | Rate influenced by soil type. Do not apply to sandy soils. Plant 50 mm deep. |
| $\begin{aligned} & 1.0 \text { or } \\ & 1.4 \end{aligned}$ | $\begin{gathered} 1.0 \text { or } \\ 1.4 \end{gathered}$ | - | - | - | $\begin{gathered} 1.0 \text { or } \\ 1.4 \end{gathered}$ | $\begin{array}{\|c} 1.0 \text { or } \\ 1.4 \end{array}$ | - | $\begin{array}{\|c\|} \hline 0.5 \text { or } \\ 0.8^{*} \end{array}$ | - | - | - | - | - | - | $\begin{gathered} 0.5 \text { or } \\ 0.8^{*} \end{gathered}$ | *Add $0.83 \mathrm{~L} /$ ha trifluralin 480. Low rate on lighter soils; refer label. |
| - | 70 | - | - | - | - | - | - | 70 | - | 70 | $\begin{aligned} & 70- \\ & 100 \end{aligned}$ | - | 70 | - | - | Some weeds might not be completely controlled, but growth will be suppressed. |
| $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | - | - | - | - | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | - | - | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | - | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | - | - | Low rate for lighter soils. Sow 30 mm , preferably 50 mm , deep. Do not use $>0.86 \mathrm{~kg} /$ ha if soil $\mathrm{pH}>8$. |
| $\begin{gathered} 0.6- \\ 0.86 \end{gathered}$ | $\begin{aligned} & 0.6- \\ & 0.86 \end{aligned}$ | - | - | - | - | $\begin{gathered} 0.6- \\ 0.86 \end{gathered}$ | $\begin{aligned} & 0.6- \\ & 0.86 \\ & 0.8 \end{aligned}$ | $\begin{aligned} & 0.6- \\ & 0.86 \end{aligned}$ | - | - | $\begin{gathered} 0.6- \\ 0.86 \end{gathered}$ | - | $\begin{aligned} & 0.6- \\ & 0.86 \end{aligned}$ | - | - |  |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | Rate influenced by soil type; refer label. Apply 1-4 weeks before sowing and incorporate by cultivation. |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | Apply in a tank mix to improve control. |
| - | - | - | - | $\begin{aligned} & 180 \\ & (\mathrm{~s} \end{aligned}$ | $\begin{aligned} & 180 \\ & (5) \end{aligned}$ | - | - | - | $\begin{aligned} & 180 \\ & \text { (S) } \end{aligned}$ | - | $\begin{aligned} & 180 \\ & (\mathrm{~S}) \end{aligned}$ | $\begin{aligned} & 180 \\ & \text { (s) } \end{aligned}$ | - | - | - | Avoid light soil types as crop damage might occur. |
| - | - | - | - | $\begin{aligned} & 120 \\ & (\mathrm{~S}) \end{aligned}$ | $\begin{aligned} & 120 \\ & (\mathrm{~S}) \end{aligned}$ | - | - | - | $\begin{aligned} & 120 \\ & (\mathrm{~s}) \end{aligned}$ | - | $\begin{aligned} & 120 \\ & (\mathrm{~S}) \end{aligned}$ | $\begin{aligned} & 120 \\ & (\mathrm{~S}) \end{aligned}$ | - | - | - | Lentil: avoid rolling. |


| Note: example trade names shown. Others may be available at different concentrations. See labels for details. |  |  | $\begin{aligned} & \stackrel{0}{0} \\ & \stackrel{0}{0} \\ & \stackrel{4}{5} \end{aligned}$ |  |  |  |  |  | $\begin{aligned} & \frac{\sqrt{n}}{6} \\ & \frac{\underline{i n}}{0} \\ & \frac{1}{3} \end{aligned}$ |  |  | Comments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Avadex ${ }^{\circledR}$ Xtra (triallate 500) Faba bean only | 15 | PSI | L/ha | $\begin{aligned} & 30- \\ & 100 \end{aligned}$ | - | - | - | - | - | - | - |  |
| Bladex ${ }^{\bullet}$ <br> (cyanazine 900) | 5 | $\begin{aligned} & \text { PSI, } \\ & \text { IBS, } \\ & \text { PSPE } \end{aligned}$ | $\begin{aligned} & \mathrm{kg} / \\ & \mathrm{ha} \end{aligned}$ | $\begin{aligned} & 80- \\ & 200 \end{aligned}$ | $\begin{gathered} 1.7 \text { or } \\ 2.2 \end{gathered}$ | $\begin{gathered} 1.7 \text { or } \\ 2.2 \end{gathered}$ | - | - | $\begin{aligned} & 1.7 \text { or } \\ & 2.2 \text { (S) } \end{aligned}$ | $\begin{gathered} 1.7 \text { or } \\ 2.2 \end{gathered}$ | $\begin{aligned} & 1.7 \text { or } \\ & 2.2(\mathrm{~S}) \end{aligned}$ | Add trifluralin for improved ryegrass control. Low rate for lighter soils. |
| Boxer Gold ${ }^{\ominus}$ (prosulfocarb 800 + S-metolachlor 120) | 15 | IBS | L/ha | >50 | - | - | - | 2.5 | - | - | - |  |
| Diuron ${ }^{9} 900$ | 5 | IBS | kg/ | 40-70 | - | $\begin{gathered} 0.83- \\ 1.1 \end{gathered}$ | - | $\begin{gathered} 0.83- \\ 1.1 \end{gathered}$ | $\begin{gathered} 0.83- \\ 1.1 \end{gathered}$ | $\begin{gathered} 0.83- \\ 1.1 \end{gathered}$ | - | Lower rate for lighter soils. |
|  |  | PSPE |  |  | - | $\begin{gathered} 0.55- \\ 0.83 \end{gathered}$ | - | $\begin{aligned} & 0.55- \\ & 0.83 \end{aligned}$ | $\begin{aligned} & 0.55- \\ & 0.83 \end{aligned}$ | $\begin{gathered} 0.55- \\ 0.83 \\ \hline \end{gathered}$ | - |  |
| Overwatch ${ }^{\ominus}$ (bixlozone 400) Faba bean only | 13 | IBS | L/ha | $\begin{aligned} & 60- \\ & 100 \end{aligned}$ | 1.25 | - | - | - | 1.25 (S) | - | 1.25 | Sow at 30 mm . |
| Reflex ${ }^{\circledast}$ (fomesafen 240) Faba bean only | 14 | IBS | L/ha | >50 | $\begin{gathered} 0.5- \\ 0.75(S) \\ -1.5 \end{gathered}$ | $\begin{aligned} & 0.75- \\ & 1.5 \text { (S) } \end{aligned}$ | - | $\begin{aligned} & 0.75- \\ & 1.5(\mathrm{~S}) \end{aligned}$ | $\begin{gathered} 0.5- \\ 0.75(\mathrm{~S}) \\ -1.5 \end{gathered}$ | $\begin{gathered} 0.5- \\ 0.75(\mathrm{~S}) \\ -1.5 \end{gathered}$ | - | Low rates generally provide suppression and shorter residual. |
|  |  | PSPE |  |  | $\begin{aligned} & 0.5- \\ & 1.25 \end{aligned}$ | $\begin{gathered} 0.9- \\ 1.25 \text { (S) } \end{gathered}$ | - | $\begin{aligned} & 0.9- \\ & 1.25(\mathrm{~S}) \end{aligned}$ | $\begin{aligned} & 0.5-0.9 \\ & (\mathrm{~S})- \\ & 1.25 \end{aligned}$ | $\begin{aligned} & 0.5-0.9 \\ & \text { (S) }-1 \\ & 1.25 \end{aligned}$ | $\begin{aligned} & 0.5-0.9 \\ & \text { (S) - } \\ & 1.25 \end{aligned}$ |  |
| Reflex ${ }^{\circledR}$ (fomesafen 240) Lentil only | 14 | IBS | L/ha | >50 | $\begin{gathered} 0.5- \\ 0.75(S) \\ -1.0 \end{gathered}$ | $\begin{aligned} & 0.75- \\ & 1.0(5) \end{aligned}$ | - | $\begin{aligned} & 0.75- \\ & 1.0(S) \end{aligned}$ | $\begin{gathered} 0.5- \\ 0.75(\mathrm{~S}) \\ -1.0 \end{gathered}$ | $\begin{gathered} 0.5- \\ 0.75(5) \\ -1.0 \end{gathered}$ | $\begin{gathered} 0.5- \\ 0.75(\mathrm{~S}) \\ -1.0 \end{gathered}$ | Low rates generally provide suppression and shorter residual. Can cause transient phytotoxicity. |
| $\begin{array}{\|l} \mathrm{Rifle}^{\oplus} 440 \\ \text { (pendimethalin 440) } \end{array}$ | 3 | IBS | L/ha | $\begin{aligned} & 50- \\ & 200 \end{aligned}$ | - | - | - | - | - | - | $\begin{aligned} & 1.5- \\ & 2.25 \end{aligned}$ |  |
| Rustler ${ }^{\text {® }}$ (propyzamide 500) | 3 | IBS | L/ha | $\begin{gathered} \text { Not } \\ \text { stated } \end{gathered}$ | - | - | - | - | - | - | - |  |
| Sakura® <br> (pyroxasulfone 850) Lentil only | 15 | IBS | g/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | - | - | - | 118 | - | - | - |  |
| Sencor ${ }^{\ominus}$ <br> (metribuzin 480) <br> Faba bean only | 5 | PSPE | L/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | $\begin{gathered} 0.28- \\ 0.58 \end{gathered}$ | $\begin{aligned} & 0.28- \\ & 0.58 \end{aligned}$ | - | $\begin{gathered} 0.28- \\ 0.58 \end{gathered}$ | $\begin{aligned} & 0.28- \\ & 0.58 \end{aligned}$ | $\begin{gathered} 0.28- \\ 0.58 \end{gathered}$ | $\begin{gathered} 0.28- \\ 0.58 \end{gathered}$ | Rate influenced by soil type. Do not apply to sandy soils. Plant 50 mm deep. |
| Simazine 900 | 5 | $\begin{aligned} & \text { IBS, } \\ & \text { PSPE } \end{aligned}$ | $\begin{aligned} & \mathrm{kg} / \\ & \mathrm{ha} \end{aligned}$ | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | - | - | $\begin{gathered} 0.5 \text { or } \\ 0.8^{*} \end{gathered}$ | - | - | - | $\begin{gathered} 0.5 \text { or } \\ 0.8^{*} \end{gathered}$ | *Add $0.83 \mathrm{~L} /$ ha trifluralin 480. <br> Low rate for lighter soils; refer label. |
| Spinnaker ${ }^{\ominus}$ (imazethapyr 700) Faba bean only | 2 | PSPE | g/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | - | 70 | - | 70 | 70 | 70 | 70 | Some weeds might not be completely controlled, but growth will be suppressed. |
| Terbyne ${ }^{\bullet}$ Xtreme ${ }^{\odot}$ (terbuthylazine 875) | 5 | IBS | kg/ha | >50 | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | $\begin{aligned} & 0.86- \\ & 1.2 \text { (S) } \end{aligned}$ | - | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | $\begin{aligned} & 0.86- \\ & 1.2 \text { (S) } \end{aligned}$ | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | $\begin{gathered} 0.86- \\ 1.2 \end{gathered}$ | Low rate for lighter soils. Sow 30 mm , preferably 50 mm , deep. Do not use $>0.86 \mathrm{~kg} /$ ha if soil $\mathrm{pH}>8$. |
|  |  | PSPE <br> Faba <br> bean <br> only |  |  | $\begin{aligned} & 0.6- \\ & 0.86 \end{aligned}$ | $\begin{gathered} 0.6- \\ 0.86(\mathrm{~S}) \end{gathered}$ | - | $\begin{aligned} & 0.6- \\ & 0.86 \end{aligned}$ | $\begin{gathered} 0.6- \\ 0.86(S) \end{gathered}$ | $\begin{aligned} & 0.6- \\ & 0.86 \\ & 0 . \end{aligned}$ | $\begin{aligned} & 0.6- \\ & 0.86 \end{aligned}$ |  |
| Triflur ${ }^{\circ}$ (trifluralin 480) Lentil only | 3 | PSI | L/ha | $\begin{aligned} & 70- \\ & 450 \end{aligned}$ | - | - | - | - | - | - | 0.8-1.2 | Rate influenced by soil type; refer label. Apply 1-4 weeks before sowing and incorporate by cultivation. |
| Ultro ${ }^{\circ}$ (carbentamide 900) | 23 | IBS | $\begin{aligned} & \mathrm{kg} / \\ & \mathrm{ha} \end{aligned}$ | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | - | - | - | - | - | - | - | Apply in a tank mix to improve control. |
| Valor ${ }^{\bullet} / T e r r a i{ }^{\ominus}{ }^{\circledR}$ (flumioxazin 500) Faba bean only | 14 | $\begin{aligned} & \text { IBS } \\ & \text { Faba } \\ & \text { bean } \end{aligned}$ | g/ha | >80 | 180 (S) | - | - | 180 (S) | 180 (S) | - | 180 (S) | Avoid light soil types as crop damage might occur. Lentil: avoid rolling. |
|  |  | $\begin{gathered} \text { IBS } \\ \text { Lentil } \end{gathered}$ |  |  | 120 (S) | - | - | 120 (S) | 120 (S) | - | 120 (S) |  |

## WeedSmart Week

## 1-3 August 2023

Learn about the latest innovations to control crop weeds and fight herbicide resistance. Local growers and agronomists will share practical solutions to maximise crop yields whilst reducing the weed seed bank.
Forum day : Machinery Expo - Farm visits


Science-backed online courses to help you win the battle against herbicide resistance.

Choose a topic: Herbicide Resistance 101, Pre-Emergent Herbicides 101, Harvest Weed Seed Control 101 and Crop Competition 101.

Incorporation key: IBS = incorporated by sowing, PSI = pre-sowing incorporated, PSPE = post-sowing, pre-emergen
NIS products might indicate a specific concentration (i.e. NIS 1000); refer to adjuvant chart for example products.

| Note: example trade names shown. Others may be available at different concentrations. See labels for details. |  |  | $\begin{aligned} & 0 \\ & \stackrel{0}{4} \\ & \frac{0}{0} \\ & \stackrel{y}{5} \end{aligned}$ |  |  |  |  |  |  | $\begin{aligned} & \stackrel{n}{0} \\ & \frac{0}{2} \\ & \frac{0}{3} \end{aligned}$ |  |  |  |  | $\begin{aligned} & \text { 늘 } \\ & \text { 믇 } \\ & \text { 든 } \end{aligned}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Broadstrike ${ }^{\ominus}$ (flumetsulam 800) | 2 | 4-8-leaf | g/ha | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | - | - | - | - | - | - | 25 | 25 | 25 | - | 25 | - |
| Brodal ${ }^{1}$ Options (diflufenican 500) | 12 | 2-leaf primary budding | mL/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | - | - | - | - | - | - | $\begin{aligned} & 200 \\ & (S) \end{aligned}$ | - | - | $\begin{gathered} 200 \\ (S) \end{gathered}$ | 200 | $\begin{gathered} 200 \\ (\mathrm{~S}) \end{gathered}$ |
| Elantra ${ }^{\circ}$ Xtreme ${ }^{\ominus}$ (quizalofop-pethyl 200) | 1 | Not stated | mL/ha | >50 | - | $\begin{array}{\|l\|l\|l\|} \hline 150- \\ 190 \end{array}$ | 125 | $\begin{aligned} & 150- \\ & 190 \end{aligned}$ | - | $\begin{gathered} 65 \text { or } \\ 125 \end{gathered}$ |  |  |  |  |  |  |
| Factor ${ }^{\ominus}$ WG (butroxydim 250) | 1 | Up to flowering | g/ha | $\begin{aligned} & 50- \\ & 100 \end{aligned}$ | $\begin{aligned} & 80- \\ & 180^{*} \end{aligned}$ | $\begin{aligned} & 80- \\ & 180 \end{aligned}$ | $\begin{aligned} & 80- \\ & 180 \end{aligned}$ | $\begin{aligned} & 80- \\ & 180^{*} \end{aligned}$ | - | $\begin{aligned} & 80- \\ & 180 \end{aligned}$ |  |  |  |  |  |  |
| Fusilade ${ }^{\oplus}$ Forte <br> (fluazifop-p-ethyl 128) <br> Faba bean only | 1 | Not stated | L/ha | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | 0.41 | 0.41 | 0.41 | - | - | 0.41 |  |  |  |  |  |  |
| Intercept ${ }^{\ominus}$ (imazamox 33 + imazapyr 15) IMI tolerant varieties only | 2 | $\begin{gathered} \text { Fb: } \text { BBCH } \\ 13-18 \\ \text { Le: } 3-6 \\ \text { node } \end{gathered}$ | L/ha | >70 | - | $\begin{aligned} & 0.6- \\ & 0.75 \\ & (S) \\ & \text { (S) } \end{aligned}$ | $\begin{gathered} 0.375- \\ 0.75 \end{gathered}$ | $\begin{gathered} 0.375- \\ 0.75 \end{gathered}$ | $\begin{aligned} & 0.6- \\ & 0.75 \\ & \text { (S) } \end{aligned}$ | $\begin{gathered} 0.375- \\ 0.75 \end{gathered}$ | - | $\begin{aligned} & 0.6- \\ & 0.75 \\ & (\mathrm{~S}) \end{aligned}$ | - | - | $\begin{aligned} & 0.6- \\ & 0.75 \end{aligned}$ | - |
| Shogun ${ }^{\circledR}$ (propaquizafop 100) | 1 | Not stated | L/ha | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | - | 0.45 | 0.2* | 0.3* | - | 0.25* |  |  |  |  |  |  |
| Status® (clethodim 240) | 1 | Fb: to full flower Le: up to 7 node/ early branching | L/ha | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | $\begin{gathered} 0.15- \\ 0.5 \end{gathered}$ | $\begin{gathered} 0.15- \\ 0.5 \end{gathered}$ | $\begin{gathered} 0.175-1 \\ 0.5 \end{gathered}$ | $\begin{gathered} 0.175- \\ 0.5 \end{gathered}$ | $\begin{gathered} 0.25- \\ 0.5 \end{gathered}$ | $\begin{gathered} 0.175- \\ 0.5 \end{gathered}$ |  |  |  |  |  |  |
| Verdict ${ }^{\bullet}$ (haloxyfop 520) | 1 | 2-leaf before flowering | mL/ha | $\begin{aligned} & 50- \\ & 150 \end{aligned}$ | $\begin{aligned} & 75- \\ & 100 \end{aligned}$ | $\begin{aligned} & 75- \\ & 100 \end{aligned}$ | 50-75 | 50-75 | - | $\begin{gathered} 37.5- \\ 100 \end{gathered}$ |  |  |  |  |  |  |

## $\mathrm{Fb}=$ faba been, $\mathrm{Le}=$ lentil. <br> Adjuvant key: $\mathrm{MO}=$ mineral oil, MOS = mineral oil plus surfactant, $\mathrm{MSO}=$ methylated seed oil, NIS = non-ionic surfactant

NIS products might indicate a specific concentration (i.e. NIS 1000); refer to adjuvant chart for example products.

|  |  |  |  |  |  |  |  |  |  |  | $\begin{aligned} & \stackrel{\times}{\ominus} \\ & \stackrel{E}{0} \\ & \stackrel{\rightharpoonup}{\hat{0}} \\ & \text { in } \end{aligned}$ |  |  | $\begin{aligned} & \frac{0}{2} \\ & \frac{5}{3} \\ & \frac{0}{3} \end{aligned}$ |  | Comments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| - | - | 25 | 25 | 25 | - | - | - | 25 | - | - | - | - | 25 (S) | 25 | - | Crop discolouration, stunting and/or delayed flowering can occur. Adjuvant: MOS $0.5 \%$ or NIS 0.2\%. |
| 200 | - | - | $\begin{aligned} & 200 \\ & (S) \end{aligned}$ | $\begin{aligned} & 150- \\ & 200 \end{aligned}$ | $\begin{aligned} & 200 \\ & (S) \end{aligned}$ | 200 | $\begin{aligned} & 200 \\ & (S) \end{aligned}$ | $\begin{aligned} & 200 \\ & (\mathrm{~S}) \end{aligned}$ | $\begin{aligned} & 200 \\ & (\mathrm{~s}) \end{aligned}$ | $\begin{aligned} & 200 \\ & (\mathrm{~S}) \end{aligned}$ | - | $\begin{aligned} & 200 \\ & (\mathrm{~S}) \end{aligned}$ | 200 | $\begin{aligned} & 150- \\ & 200 \end{aligned}$ | $\begin{aligned} & 200 \\ & (S) \end{aligned}$ | Also has residual activity. |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Adjuvant: MSO $1 \%$ or NIS 0.2\%. |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | *Must be combined with clethodim or a FOP herbicide; refer label. Adjuvant: MSO 0.5\%, |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| - | $\begin{aligned} & 0.6- \\ & 0.75 \end{aligned}$ | - | $\begin{aligned} & 0.6- \\ & 0.75 \end{aligned}$ | $\begin{gathered} 0.375- \\ 0.75 \end{gathered}$ | - | - | - | - | - | - | $\begin{aligned} & 0.6- \\ & 0.75 \\ & (5) \end{aligned}$ | - | $\begin{gathered} 0.375- \\ 0.75 \end{gathered}$ | $\begin{aligned} & 0.3- \\ & 0.75 \end{aligned}$ | - | Adjuvant:MSO 0.5\%. |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | *Add NIS 0.2\% or MSO 0.5\%. |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Adjuvant: MSO 1\% or MOS $0.5-1 \%$. |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Application rate determined by weed size, adjuvant type and mix partner; refer label. Adjuvant: MSO or MOS |

## Pre-harvest desiccation or salvage spraying of winter crops

Pre-harvest desiccation or salvage spraying is required in some years to dry down weeds and assist with the timely harvesting of winter crops. Situations do arise due to late establishing weeds combined with wet and prolonged springs or harvest periods, where salvage spraying might be necessary
weeds such as bindweed, fat hen, melons, New Zealand spinach, prickly lettuce, skeleton weed and sowt can interfere while weed seeds and arican popy thistle can contaminate grain.

| Note: example trade names shown. Others may be available at different concentrations. See labels for details. | Use | Rate | Barley | Canola | Chickpea | Faba bean | Field pea |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2,4-D amine 700 | Harvest aid/salvage spray | L/ha | 1.1-1.5 | - | - | - | - |
| 2,4-D LV ester 680 | Harvest aid/salvage spray | L/ha | 1.7 | - | - | - | - |
| Dropzone ${ }^{\ominus}$ (2,4-D amine 500) | Harvest aid/salvage spray | L/ha | 1.5-2.1 | - | - | - | - |
| Gramoxone ${ }^{\bullet} 360$ Pro (paraquat 360) | In-crop spray-topping | mL/ha | - | - | 280 or 560 | 280 or 560 | 280 or 560 |
| Reglone ${ }^{\circ}$ (diquat 200) | Pre-harvest crop desiccation | L/ha | - | 1.5-3.0 | 2.0-3.0 | 2.0-3.0 | 2.0-3.0 |
|  | Pre-harvest weed control | L/ha | 1.0-3.0 | - | - | - | - |
| Sharpen® (saflufenacil 700) | Harvest aid/weed control | g/ha | 34 | - | 34* | 34* | $34^{*}$ |
| Sledge ${ }^{\circledR}$ (pyraflufen-ethyl 25 ) | Harvest aid/prevent weed seed set | mL/ha | 200 | - | 200 | 200 | 200 |

Not all glyphosate products are registered for this use; refer to the label of the specific product you intend to use.

| CRUCIAL® (glyphosate 600) | Harvest aid/weed control <br> and regrowth | L/ha | 1.54 | $1.1-3.2$ | $0.6-1.6$ or <br> $0.45-0.95^{*}$ | $0.6-1.6$ | $0.6-1.6$ |
| :--- | :--- | :--- | :---: | :---: | :---: | :---: | :---: |
| Roundup UltraMAX <br> (glyphosate 570) | Harvest aid/weed control <br> and regrowth | L/ha | 1.65 | $1.2-3.4$ | $0.645-1.7$ | $0.3-1.7$ | $0.3-1.7$ |
| Weedmaster DST® (glyphosate 470) | Harvest aid/weed control <br> and regrowth | L/ha | 1.9 | $1.4-4.1$ | $0.77-2.1$ or <br> $0.58-2.1^{*}$ | $0.77-2.1$ | $0.77-2.1$ |

[^9]NIS products might indicate a specific concentration (i.e. NIS 1000); refer to adjuvant chart for example products.

Warning: when spraying, use extreme caution and consider the possibility
of spray drift onto susceptible plants e.g. cotton, canola, lucerne, grapevines, horticultural crops, and kurrajong trees.
Application timing often depends on crop type and situation. These can also vary between one product and another. Refer to the product label for specific guidance.

Read the label before using a product.

| Lentil | Linseed | Lupin | Oats | Wheat | Harvest WHP | Application | Comments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| - | - | - | 1.1-1.5 | 1.1-1.5 | NR | Ground/aerial | Significant buffer zone considerations; refer label. Beware of sensitive crops nearby. |
| - | - | - | 1.7 | 1.7 | NR | Ground/aerial | Significant buffer zone considerations; refer label. Beware of sensitive crops nearby. |
| - | - | - | 1.5-2.1 | 1.5-2.1 | NR | Ground/aerial | Reduced buffer zones; refer label. |
| 280 or 560 | - | 280 or 560 | - | - | 7 d | Ground | Must add an adjuvant. |
| 2.0-3.0 | 2.0-3.0 | 2.0-3.0 | - | - | Chickpea, faba bean, lentil 2 d. Canola 4 d. Other NR. | Ground/aerial | Use higher rate for dense or weedy crops. Requires an adjuvant; add NIS 600 at $200 \mathrm{~mL} / 100$ L or NIS 1000 at $160 \mathrm{~mL} / 100 \mathrm{~L}$ unless otherwise stated. |
| - | - | - | 1.0-3.0 | 2 or 3 | NR | Ground/aerial |  |
| 34* | - | 34* | - | 34 | Pulses 7 d . Cereals NR. | Refer label | *Add glyphosate or paraquat. Must add MSO $1 \%$ for all uses. Requires good coverage. Might affect lentil and triticale germination. Do not use on lentil or triticale seed crops. |
| 200 | - | 200 | - | 200 | - | - | Can be added to glyphosate or paraquat for pulses. |
| 0.6-1.6 | - | 0.6-1.6 | $\begin{gathered} \text { 1.1-3.3. } \\ \text { (hay/ } \\ \text { silage) } \end{gathered}$ | 1.1-3.2 | Refer to label. | Ground/aerial | *Add $5 \mathrm{~g} /$ ha metsulfuron-methyl 600 for chickpea. <br> Do not use on crops intended for seed or sprouting. <br> Do not use on malting barley. |
| 0.645-1.7 | - | - | - | 0.85-3.4 | Wheat 5 d. Barley, legumes 7 d. Other NR. | Ground/aerial | Do not use on crops intended for seed or sprouting. Do not use on malting barley. |
| 0.77-2.1 | - | 0.77-2.1 | $\begin{aligned} & \text { 1.4-4.1 } \\ & \text { (hay/ } \\ & \text { silage) } \end{aligned}$ | 1.4-4.1 | Refer to label | Ground/aerial | *Add $5 \mathrm{~g} /$ ha metsulfuron-methyl 600 for chickpea. <br> Do not use on crops intended for seed or sprouting. <br> Do not use on malting barley. |

Foliar fungicides for winter crops

| Note: example trade names shown. Others may be available at different concentrations. See labels for details. | 은 | $\begin{aligned} & \text { WHP (weeks) } \\ & \begin{array}{l} \mathrm{W} \end{array}=\text { wheat } \\ & \mathrm{B}=\text { barley } \end{aligned}$ |  | $\stackrel{\rightharpoonup}{\hat{u}}$ |  |  |  | $\begin{aligned} & \stackrel{5}{ \pm} \\ & \text { 흥 } \\ & \stackrel{\rightharpoonup}{2} \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | $\begin{aligned} & \text { NㅡN } \\ & \text { Nㅜㄴ } \end{aligned}$ | $\begin{aligned} & \stackrel{\rightharpoonup}{0} \\ & \stackrel{y}{2} \\ & \stackrel{\rightharpoonup}{5} \end{aligned}$ |  |  |  |  |  |
| Accolade ${ }^{\oplus}$ (azoxystrobin 250) | Wheat | 3 | 6 | \$36.19 <br> (Accolade only, not partners) | - | - | $\begin{gathered} 160-320 \mathrm{~mL}^{*} \\ \text { or } 320-640 \mathrm{~mL}^{\wedge} \end{gathered}$ | - |
|  | Barley |  |  |  | $\begin{gathered} 160 \mathrm{~mL}^{*} \text { or } \\ 320-640 \mathrm{~mL} \wedge \end{gathered}$ | - | $320-640 \mathrm{~mL}$ ^ | 320-640 mL^ |
| Amistar ${ }^{\bullet}$ Xtra (azoxystrobin 200 + cyproconazole 80) | Wheat | 3 | 6 | \$42.18 | - | - | $400-800 \mathrm{~mL}$ | - |
|  | Barley |  |  |  | - | - | $200-800 \mathrm{~mL}$ | $200-800 \mathrm{~mL}$ |
| Aviator ${ }^{\circ}$ Xpro ${ }^{\circ}$ (prothioconazole $150+$ bixafen 75) | Wheat | 4 | NR | \$67.04 | - | - | - | - |
|  | Barley |  |  |  | $300-500 \mathrm{~mL}$ | - | $400-500 \mathrm{~mL}$ | $300-500 \mathrm{~mL}$ |
| Cogito ${ }^{\circ}$ <br> (propiconazole $250+$ <br> tebuconazole 250) | Wheat | 2 | 5 | \$29.19 | - | - | $125-250 \mathrm{~mL}$ | - |
|  | Barley |  |  |  | 250 mL | - | $125-250 \mathrm{~mL}$ | $125-250 \mathrm{~mL}$ |
|  | Oats |  |  |  | - | 125-250 mL | - | - |
| Elatus ${ }^{\circledR}$ Ace (propiconazole $250+$ benzovindiflupyr 40) | Wheat | 10 days | NR | \$42.03 | - | - | 500 mL | - |
|  | Barley |  |  |  | 500 mL | - | 500 mL | 500 mL |
| Impact ${ }^{\oplus}$ Endure (flutriafol 500) | Wheat | 7 | 7 | \$25.77 | - | - | $125-250 \mathrm{~mL}$ | - |
|  | Barley |  |  |  | - | - | - | - |
| Opera ${ }^{\bullet}$ (pyraclostrobin 85 + epoxiconazole 62.5) | Wheat | $3+$ ESI | NR | \$37.83 | - | - | $500-1000 \mathrm{~mL}$ | - |
|  | Barley |  |  |  | 500 mL | - | 500 mL | 500-1000 mL |
|  | Oats |  |  |  | - | - | - | - |
| Opus ${ }^{\bullet}$ <br> (epoxiconazole 125) | Wheat | $6+$ ESI | 6 | \$30.46 | - | - | 500 mL | - |
|  | Barley |  |  |  | 250 mL | - | $250-500 \mathrm{~mL}$ | $250-500 \mathrm{~mL}$ |
| Prosaro ${ }^{\circ}$ (prothioconazole $210+$ tebuconazole 210) | Wheat | 2 | 5 | \$95.64 | - | - | $150-300 \mathrm{~mL}$ | - |
|  | Barley |  |  |  | 150-300 mL | - | $150-300 \mathrm{~mL}$ | $150-300 \mathrm{~mL}$ |
|  | Oats |  |  |  | - | - | 300 mL | - |
| Radial ${ }^{\oplus}$ (azoxystrobin 75 + epoxiconazole 75) | Wheat | $3+$ ES | NR | \$46.82 | - | - | $420-840 \mathrm{~mL}$ | - |
|  | Barley |  |  |  | 420-840 mL | - | $420-840 \mathrm{~mL}$ | $420-840 \mathrm{~mL}$ |
|  | Oats |  |  |  | - | - | - | - |
| Tazer ${ }^{\bullet}$ Xpert (azoxystrobin 80 + epoxiconazole 31.25) | Wheat | 3 | NR | \$31.04 | - | - | $\begin{gathered} 1-2 \mathrm{~L} \text { or } \\ 0.5 \mathrm{~L}+\text { MSO 1\% } \end{gathered}$ | - |
|  | Barley |  |  |  | 1-2 L | - | $\begin{gathered} \text { 1-2 L or 0.5-1 L+ }+ \\ \text { MSO 1\% } \end{gathered}$ | $\begin{aligned} & \text { 1-2 L or 0.5-1 L + } \\ & \text { MSO } 1 \% \end{aligned}$ |
|  | Oats |  |  |  | - | - | - | - |
| Tebuconazole 430 | Wheat | 2 | 5 | \$21.19 | - | - | 145-290 mL | - |
|  | Barley |  |  |  | 145 mL | - | - | - |
|  | Oats |  |  |  | - | 145-290 mL | - | - |
| Tilt 500 <br> (propiconazole 500) | Wheat | 1 | 4 | \$41.13 | - | - | $75-250 \mathrm{~mL}$ | - |
|  | Barley |  |  |  | 250 mL | - | $125-250 \mathrm{~mL}$ | $125-250 \mathrm{~mL}$ |
|  | Oats |  |  |  | - | 125-250 mL | - | - |
| Triadimefon 500 | Wheat | Do not use | 4 | \$32.06 | - | - | 125-250 g | - |
|  | Barley |  |  |  | - | - | - | - |
| Veritas ${ }^{\circ}$ Opti (tebuconazole $370+$ azoxystrobin 222) | Wheat | $3+$ ESI | 6 | \$72.80 | - | - | $170-340 \mathrm{~mL}$ | - |
|  | Barley |  |  |  | 170 mL | - | $170-340 \mathrm{~mL}$ | $170-340 \mathrm{~mL}$ |

Key: ESI = Export slaughter interval, NR = not required when used as directed.
Adjuvant key: MO = mineral oil, MOS = mineral oil plus surfactant, $\mathrm{MSO}=$ methylated seed oil, NIS $=$ non-ionic surfactant.

|  |  |  | $\begin{aligned} & \stackrel{\rightharpoonup}{n} \\ & \varepsilon \\ & \stackrel{y y y y}{\omega} \end{aligned}$ |  |  |  | Comments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{gathered} 160-320 \mathrm{~mL}^{*} \\ \text { or } 320-640 \mathrm{~mL} \end{gathered}$ | $\begin{gathered} 160-320 \mathrm{~mL}^{*} \\ \text { or } 320-640 \mathrm{~mL} \mathrm{\wedge} \end{gathered}$ | 160-320 mL* | 160-320 mL* | $\begin{gathered} 160-320 \mathrm{~mL}^{*} \\ \text { or } 320-640 \mathrm{~mL} \mathrm{\wedge} \end{gathered}$ | 160-320 mL* | Yes | *Add tebuconazole. <br> $\wedge$ Add epoxiconazole. |
| $\begin{gathered} 160-320 \mathrm{~mL}^{*} \\ \text { or } 320-640 \mathrm{~mL}^{\wedge} \end{gathered}$ | - | - | - | - | - |  |  |
| $400-800 \mathrm{~mL}$ | - | - | $400-800 \mathrm{~mL}$ | $400-800 \mathrm{~mL}$ | $400-800 \mathrm{~mL}$ | Yes |  |
| $400-800 \mathrm{~mL}$ | - | - | - | - | - |  | Adjuvant: barley MSO at 2\% improves control at lower rate. |
| $300-500 \mathrm{~mL}$ | $300-500 \mathrm{~mL}$ | $300-500 \mathrm{~mL}$ | - | $300-500 \mathrm{~mL}$ | $300-500 \mathrm{~mL}$ | Yes |  |
| $300-500 \mathrm{~mL}$ | - | - | - | - | - |  |  |
| $125-250 \mathrm{~mL}$ | $125-250 \mathrm{~mL}$ | 125-250 mL | 125-250 mL | $125-250 \mathrm{~mL}$ | $125-250 \mathrm{~mL}$ | Yes |  |
| $125-250 \mathrm{~mL}$ | - | - | - | - | - |  |  |
| - | - | $125-250 \mathrm{~mL}$ | 250 mL | - | - |  |  |
| 500 mL | 500 mL | 500 mL | 500 mL | 500 mL | 500 mL | No |  |
| 500 mL | - | - | - | - | - |  |  |
| - | 125-250 mL | 125-250 mL | - | 125-250 mL | - | Yes | Adjuvant: NIS $0.2 \%$. |
| $125-250 \mathrm{~mL}$ | - | - | - | - | - |  |  |
| 500 mL | 500 mL | - | 500 mL | 500 mL | - | Yes | Adjuvant: NIS. |
| $500-1000 \mathrm{~mL}$ | - | - | - | - | - |  |  |
| - | - | 500 mL | - | - | - |  |  |
| 250 mL | $250-500 \mathrm{~mL}$ | - | - | $250-500 \mathrm{~mL}$ | - | Yes | Adjuvant: NIS 0.2\% can assist. |
| 250 mL | - | - | - | - | - |  |  |
| $150-300 \mathrm{~mL}$ | 150-300 mL | - | $150-300 \mathrm{~mL}$ | $150-300 \mathrm{~mL}$ | 150-300 mL | Yes | Adjuvant required for some diseases; refer label. |
| $150-300 \mathrm{~mL}$ | - | - | - | - | - |  |  |
| - | $150-300 \mathrm{~mL}$ | - | 300 mL | - | - |  |  |
| $420-840 \mathrm{~mL}$ | $420-840 \mathrm{~mL}$ | $420-840 \mathrm{~mL}$ | $420-840 \mathrm{~mL}$ | $420-840 \mathrm{~mL}$ | 420-840 mL | Yes | Adjuvant: MSO 1\% can assist with some diseases; refer label. |
| $420-840 \mathrm{~mL}$ | - | - | - | - | - |  |  |
| - | - | 420 mL | 420 mL | - | - |  |  |
| 1-2 L | 1-2L | $\begin{gathered} 1 \text { L or } 0.5 \mathrm{~L}+ \\ \text { MSO } 1 \% \end{gathered}$ | $\begin{gathered} 1-2 \text { L or } \\ 0.5 L+\text { MSO 1\% } \end{gathered}$ | $\begin{gathered} 1-2 \mathrm{~L} \text { or } \\ 0.5 \mathrm{~L}+\text { MSO } 1 \% \end{gathered}$ | 1-2L | Yes | Adjuvant: MSO 1\% can assist with some diseases at low rates. |
| $\begin{aligned} & 1-2 \text { L or 0.5-1 L } \\ & + \text { MSO } 1 \% \end{aligned}$ | - | - | $\begin{gathered} 1-2 \text { Lor } \\ 0.5 \mathrm{~L}+\text { MSO } 1 \% \end{gathered}$ | - | - |  |  |
| - | - | 0.5-1 L | $\begin{aligned} & 1 \text { L or } 0.5+\text { MSO } \\ & 1 \% \end{aligned}$ | - | - |  |  |
| - | 145-290 mL | 290 mL | 145-290 mL | 145-290 mL | $145-290 \mathrm{~mL}$ | Yes | Adjuvant: MSO 1\% can assist; refer label. |
| 145-290 mL | - | - | - | - | - |  |  |
| - | - | - | 145-290 mL | - | - |  |  |
| 75-250 mL | 75-250 mL | $125-250 \mathrm{~mL}$ | 250 mL | $125-250 \mathrm{~mL}$ | 125-250 mL | Yes | Adjuvant: not required. |
| - | - | - | - | - | - |  |  |
| $75-250 \mathrm{~mL}$ | - | $125-250 \mathrm{~mL}$ | 250 mL | - | - |  |  |
| - | - | $\begin{gathered} 125-250 \mathrm{~g} \\ \text { (SNSW) } \end{gathered}$ | - | 125-250 g | - | Yes | Adjuvant: not required. |
| 250 g | - | - | - | - | - |  |  |
| - | 170-340 mL | $170-340 \mathrm{~mL}$ | $170-340 \mathrm{~mL}$ | $170-340 \mathrm{~mL}$ | 170-340 mL | Yes | Apply up to twice per season for the low rate, once for the high rate. |
| 170-340 mL | - | - | - | - | - |  |  |

[^10]| Note: example trade names shown. Others may be available at different concentrations. See labels for details. | WHP |  |  | $\cong$ |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \text { ס్N } \\ & \text { 든 } \end{aligned}$ |  |  |  |  |  |
| Aviator ${ }^{\ominus}$ Xpro ${ }^{\ominus}$ (prothioconazole 150 + bixafen 75) | All: 4 w | All: 4 w | L/ha | - | 0.4-0.6 chickpea, faba bean, lentil | 0.6 field pea |
| Bravo ${ }^{\circ}$ Weather Stik (chlorothalonil 720) | All: 14 d | All: 14 d | L/ha | - | $\begin{gathered} 1.0-2.0 \\ \text { chickpea, lentil } \end{gathered}$ | - |
| Dithane ${ }^{\ominus}$ Rainshield ${ }^{\ominus}$ NeoTec ${ }^{\ominus}$ (mancozeb 750) | All: 14 d | All: 4 w | kg/ha | 1.0-2.2 lupin |  | $\begin{gathered} 1.0-2.2 \text { field } \\ \text { pea } \end{gathered}$ |
| Echo ${ }^{\oplus} 900$ Fungicide (chlorothalonil 900) | All: 14 d | All: 14 d | L/ha | - | $\begin{gathered} 0.8-1.6 \\ \text { chickpea, lentil } \end{gathered}$ | - |
| Miravis® ${ }^{\text {Star }}$ (fludioxonil $150+$ pydiflumetofen 100) | All: NR | All: 6 w | L/ha | - | $\begin{gathered} 0.25-0.5 \\ \text { pulses } \end{gathered}$ |  |
| Nosclex 800 (procimidone 800) | Canola: NR <br> Lentil: 21 d | Canola: 9 w <br> Faba bean:- <br> Lentil: 21d | L/ha | - | - | - |
| Orius® (tebuconazole 430) | Field pea: 3d Faba bean: 21 d | Field pea: 3d Faba bean: 14 d | mL/ha | - | - | - |
| Prosaro ${ }^{\circ}$ (prothioconazole $210+$ tebuconazole 210) | All: NR | All: 14d | mL/ha | - | - | - |
| Rovral ${ }^{\circ}$ Liquid ( (iprodione 250) | 6 w | 6 w | L/ha | - | - | - |
| Spin Flo ( (arbendazim 500) | All: 28 d | All: 28 d | mL/ha | - | - | - |
| Veritas ${ }^{\circledR}$ Opti (tebuconazole $370+$ azoxystrobin 222) | Canola: NR <br> Pulses: 4 w | Canola: 14 d <br> Pulses: 4 w | L/ha | - | 0.4-0.54 chickpea, faba bean, lentil | $\begin{array}{\|c} 0.4-0.54 \text { field } \\ \text { pea } \end{array}$ |

Key: $\mathrm{h}=$ hours, $\mathrm{d}=$ days, $\mathrm{w}=$ weeks, $\mathrm{NR}=$ not required when used as directed, $\mathrm{I} \mathrm{MI}=$ imidazolinone-tolerant. NIS products might indicate a specific concentration (i.e. NIS 1000); refer to adjuvant chart for example products.

|  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |

Retail prices of chemicals used on winter crops

| Product name | Active ingredient | Company | Price*/L or kg (Ex GST) | Commonly used rate | Cost/ha |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Achieve ${ }^{\text {a }}$ | Tralkoxydim $400 \mathrm{~g} / \mathrm{kg}$ | Nufarm | \$68.00 | 0.4 kg | \$27.20 |
| Agtryne ${ }^{\text {® }}$ MA | Terbutry $275 \mathrm{~g} / \mathrm{L}+$ MCPA $160 \mathrm{~g} / \mathrm{L}$ | Nufarm | \$18.70 | 1.0 L | \$18.70 |
| Alliance ${ }^{\text {® }}$ | Paraquat $125 \mathrm{~g} / \mathrm{L}+$ amitrole $250 \mathrm{~g} / \mathrm{L}$ | Nufarm | \$16.38 | 2.0 L | \$32.76 |
| Amicide® Advance 700 | 2,4-D amine $700 \mathrm{~g} / \mathrm{L}$ | Nufarm | \$8.29 | 0.8 L | \$6.63 |
| Arcade ${ }^{\text {e }}$ | Prosulfocarb $800 \mathrm{~g} / \mathrm{L}$ | Syngenta | \$9.87 | 3.0 L | \$29.61 |
| Associate ${ }^{\circ}$ | Metsulfuron-methyl $600 \mathrm{~g} / \mathrm{kg}$ | Nufarm | \$52.20 | 5 g | \$0.26 |
| Atlantis ${ }^{\text {O }}$ OD | Mesosulfuron-methyl $30 \mathrm{~g} / \mathrm{L}$ | Bayer CropScience | \$95.06 | 0.33 L | \$31.37 |
| Atrazine 900 WG | Atrazine $900 \mathrm{~g} / \mathrm{kg}$ | Titan | \$12.35 | 1.1 kg | \$13.59 |
| Avadex ${ }^{\circ} \mathrm{Xtra}$ | Tri-allate $500 \mathrm{~g} / \mathrm{L}$ | Nufarm | \$13.00 | 1.6 L | \$20.80 |
| Axial ${ }^{\circ} \mathrm{Xtra}$ | Pinoxaden $100 \mathrm{~g} / \mathrm{L}+$ cloquintocet-mexyl $25 \mathrm{~g} / \mathrm{L}$ | Syngenta | \$84.40 | 0.2 L | \$16.88 |
| Balance* 750 WG | Isoxaflutole $750 \mathrm{~g} / \mathrm{kg}$ | Bayer CropScience | \$142.50 | 0.1 kg | \$14.25 |
| Basta ${ }^{\circ}$ | Glufosinate-ammonium $200 \mathrm{~g} / \mathrm{L}$ | BASF | \$20.40 | 3.75 L | \$76.50 |
| Bladex ${ }^{\text {® }}$ | Cyanazine $900 \mathrm{~g} / \mathrm{kg}$ | Agnova | \$51.29 | 1.5 L | \$76.94 |
| Boxer Gold ${ }^{\circ}$ | Prosulfocarb $800 \mathrm{~g} / \mathrm{L}+\mathrm{S}$-metolachlor $120 \mathrm{~g} / \mathrm{L}$ | Syngenta | \$10.60 | 2.5 L | \$26.50 |
| Broadside ${ }^{\text {® }}$ | MCPA $280 \mathrm{~g} / \mathrm{L}+$ bromoxynil $140 \mathrm{~g} / \mathrm{L}+$ dicamba $40 \mathrm{~g} / \mathrm{L}$ | Nufarm | \$28.40 | 0.75 L | \$21.30 |
| Broadstrike ${ }^{\text {® }}$ | Flumetsulam $800 \mathrm{~g} / \mathrm{kg}$ | Corteva Agriscience | \$414.00 | 25 g | \$10.35 |
| Brodal ${ }^{\circ}$ Options | Diflufenican $500 \mathrm{~g} / \mathrm{L}$ | Bayer CropScience | \$54.95 | 0.15 L | \$8.24 |
| Bromicide 200 | Bromoxynil $200 \mathrm{~g} / \mathrm{L}$ | Nufarm | \$15.00 | 1.4L | \$21.00 |
| Bromoxynil MA | Bromoxynil $200 \mathrm{~g} / \mathrm{L}+$ MCPA $200 \mathrm{~g} / \mathrm{L}$ | Various | \$16.00 | 1.4L | \$22.40 |
| Bronco ${ }^{\circ} \mathrm{MA}-\mathrm{X}$ | Bromoxynil $280 \mathrm{~g} / \mathrm{L}+$ MCPA $280 \mathrm{~g} / \mathrm{L}$ | Adama Australia | \$23.40 | 1.0 L | \$23.40 |
| Butisan ${ }^{\circ}$ | Metazachlor $500 \mathrm{~g} / \mathrm{L}$ | BASF | \$25.36 | 1.8 L | \$45.65 |
| Buttress ${ }^{\circ}$ | 2,4-DB $500 \mathrm{~g} / \mathrm{L}$ | Nufarm | \$21.65 | 2.14 | \$45.47 |
| Callisto ${ }^{\circ}$ | Mesotrione $480 \mathrm{~g} / \mathrm{L}$ | Syngenta | \$78.78 | 0.2 L | \$15.76 |
| Cheetah ${ }^{\circ}$ Gold | Diclofop-methyl $200 \mathrm{~g} / \mathrm{L}+$ sethoxydim $20 \mathrm{~g} / \mathrm{L}+$ fenoxaprop-p-ethyl $13.6 \mathrm{~g} / \mathrm{L}$ | Sipcam | \$22.88 | 1.0 L | \$22.88 |
| Chlorsulfuron 750 WG | Chlorsulfuron $750 \mathrm{~g} / \mathrm{kg}$ | FMC | \$104.80 | 20 g | \$2.10 |
| Colex-D* | 2,4-D choline $456 \mathrm{~g} / \mathrm{L}$ | Corteva Agriscience | \$14.00 | 1.14 L | \$15.96 |
| Condor ${ }^{\text {® }}$ | MCPA 375 + pyraflufen-ethyl $10 \mathrm{~g} / \mathrm{L}$ | Sipcam | \$20.79 | 1.0 L | \$20.79 |
| Countdown ${ }^{\text {® }}$ | Prosulfocarb $800 \mathrm{~g} / \mathrm{L}$ | Adama Australia | \$10.45 | 2.5 L | \$26.13 |
| CRUCIAL ${ }^{\circ}$ | Glyphosate $600 \mathrm{~g} / \mathrm{L}$ | Nufarm | \$9.70 | 1.2 L | \$11.64 |
| Decision ${ }^{\text {® }}$ | Diclofop-methyl $200 \mathrm{~g} / \mathrm{L}+$ sethoxydim $20 \mathrm{~g} / \mathrm{L}$ | Sipcam | \$24.30 | 1.0 L | \$24.30 |
| Devrinol-C® | Napropamide $500 \mathrm{~g} / \mathrm{kg}$ | UPL | \$45.80 | 1.75 kg | \$80.15 |
| Diclofop-methyl 375 | Diclofop-methyl $375 \mathrm{~g} / \mathrm{L}$ | FMC | \$17.16 | 1.5 L | \$25.74 |
| Diflufenican + bromoxynil | Diflufenican $25 \mathrm{~g} / \mathrm{L}+$ bromoxynil $250 \mathrm{~g} / \mathrm{L}$ | Nufarm | \$16.90 | 0.75 L | \$13.24 |
| Diflufenican + MCPA | Diflufenican $25 \mathrm{~g} / \mathrm{L}+$ MCPA $250 \mathrm{~g} / \mathrm{L}$ | Bayer CropScience | \$13.21 | 0.5 L | \$6.61 |

Table 41. Retail prices of chemicals used on winter crops - page 2 of 2.

| Product name | Active ingredient | Company | Price*/L or kg (Ex GST) | Commonly used rate | Cost/ha |
| :---: | :---: | :---: | :---: | :---: | :---: |
| LV Ester 680 | 2,4-D LV ester $680 \mathrm{~g} / \mathrm{L}$ | Crop Care | \$10.40 | 0.8 L | \$8.32 |
| Mateno ${ }^{\circ} \mathrm{Complete}$ | Aclonifen 400 + pyroxasulfone 100 + diflufenican $66 \mathrm{~g} / \mathrm{L}$ | Bayer CropScience | \$61.20 | 0.75 L | \$45.90 |
| MCPA 750 | MCPA $750 \mathrm{~g} / \mathrm{L}$ | Titan | \$13.45 | 0.46 L | \$6.20 |
| MCPA LVE | MCPA $570 \mathrm{~g} / \mathrm{L}$ | Various | \$12.11 | 0.7 L | \$8.48 |
| Outlook ${ }^{\circ}$ | Dimethenamid-p $720 \mathrm{~g} / \mathrm{L}$ | BASF | \$63.53 | 1.0 L | \$63.53 |
| Overwatch ${ }^{\text {® }}$ | Bixlozone $400 \mathrm{~g} / \mathrm{L}$ | FMC | \$34.81 | 1.25 L | \$43.51 |
| Palmero ${ }^{\text {TX }}$ | Terbuthylazine $750+$ isoxaflutole $75 \mathrm{~g} / \mathrm{L}$ | Adama Australia | \$50.63 | 1.0 kg | \$50.63 |
| Paradigm ${ }^{\circ}$ | Halauxifen-methyl $200 \mathrm{~g} / \mathrm{kg}+$ florasulam $200 \mathrm{~g} / \mathrm{kg}$ | Corteva Agriscience | \$613.00 | 25 g | \$15.33 |
| $\begin{aligned} & \text { Pendimethalin }{ }^{\odot} 440 \\ & \text { EC } \end{aligned}$ | Pendimethalin $440 \mathrm{~g} / \mathrm{L}$ | FMC | \$12.91 | 1.4L | \$18.07 |
| Pixxaro ${ }^{\circ}$ | Fluroxypyr $250 \mathrm{~g} / \mathrm{L}+$ halauxifen $16.25 \mathrm{~g} / \mathrm{L}$ | Corteva Agriscience | \$48.00 | 0.3 L | \$14.40 |
| Precept ${ }^{\text {® }}$ | Pyrasulfotole $50 \mathrm{~g} / \mathrm{L}+$ MCPA $125 \mathrm{~g} / \mathrm{L}$ | Bayer CropScience | \$20.23 | 0.5 L | \$10.12 |
| Priority ${ }^{\text {a }}$ | Florasulam $200 \mathrm{~g} / \mathrm{L}$ | Adama Australia | \$220.00 | 0.02 L | \$4.40 |
| Pyresta* ${ }^{\text {® }}$ treme | Pyraflufen-ethyl $2.1 \mathrm{~g} / \mathrm{L}+2,4-\mathrm{D}$ LV ester $600 \mathrm{~g} / \mathrm{L}$ | Sipcam | \$21.63 | 0.5 L | \$10.82 |
| Quadrant ${ }^{\text {® }}$ | MCPA ester 250 + bromoxonil 240 + diflufenican $20+$ picolinafen $10 \mathrm{~g} / \mathrm{L}$ | Adama Australia | \$23.53 | 1.0 L | \$23.53 |
| Raptor ${ }^{\circ}$ | Imazamox $700 \mathrm{~g} / \mathrm{kg}$ | BASF | \$525.00 | 45 g | \$23.63 |
| Reflex ${ }^{\text {® }}$ | Fomesafen $240 \mathrm{~g} / \mathrm{L}$ | Syngenta | \$19.50 | 0.75 L | \$14.63 |
| Reglone ${ }^{\text {® }}$ | Diquat $200 \mathrm{~g} / \mathrm{L}$ | Syngenta | \$13.92 | 2.0 L | \$27.84 |
| Rexade ${ }^{\circ}$ | Pyroxsulam $150 \mathrm{~g} / \mathrm{kg}+$ halauxifen $50 \mathrm{~g} / \mathrm{kg}$ | Corteva Agriscience | \$371.15 | 100 g | \$37.12 |
| Roundup Ready ${ }^{\text {P PL }}$ | Glyphosate $540 \mathrm{~g} / \mathrm{L}$ | Bayer CropScience | \$8.30 | 1.15 L | \$9.55 |
| Roundup UltramAX ${ }^{\circ}$ | Glyphosate $570 \mathrm{~g} / \mathrm{L}$ | Bayer CropScience | \$8.69 | 1.0 L | \$2.17 |
| Rustler ${ }^{\text {® }}$ | Propyzamide $500 \mathrm{~g} / \mathrm{L}$ | FMC | \$39.94 | 1.0 L | \$39.94 |
| Sakurå 850 WG | Pyroxasulfone $850 \mathrm{~g} / \mathrm{kg}$ | Bayer CropScience | \$375.01 | 118 g | \$44.25 |
| Sencor ${ }^{\circ} 880$ | Metribuzin $750 \mathrm{~g} / \mathrm{kg}$ | Bayer CropScience | \$61.25 | 0.28 kg | \$17.15 |
| Sentry ${ }^{\text {® }}$ | Imazapic $525 \mathrm{~g} / \mathrm{kg}+$ imazapyr $175 \mathrm{~g} / \mathrm{kg}$ | Nufarm | \$225.00 | 40 g | \$9.00 |
| Sharpen ${ }^{\bullet}$ WG | Saflufenacil $700 \mathrm{~g} / \mathrm{kg}$ | BASF | \$530.90 | 17 g | \$9.03 |
| Shogun ${ }^{\circ}$ | Propaquizafop $100 \mathrm{~g} / \mathrm{L}$ | Adama Australia | \$34.00 | 0.3 L | \$10.20 |
| Simanex® 900 WG | Simazine $900 \mathrm{~g} / \mathrm{kg}$ | Various | \$13.37 | 1.1 kg | \$14.71 |
| Sledge ${ }^{\circ}$ | Pyraflufen-ethyl $25 \mathrm{~g} / \mathrm{L}$ | Sipcam | \$84.54 | 0.1 L | \$8.45 |
| Spinnaker® 700 WDG | Imazethapyr $700 \mathrm{~g} / \mathrm{kg}$ | BASF | \$108.00 | 70 g | \$7.56 |
| Spray.Seed ${ }^{\text {® }} 250$ | Paraquat $135 \mathrm{~g} / \mathrm{L}+$ diquat $115 \mathrm{~g} / \mathrm{L}$ | Syngenta | \$12.93 | 1.6 L | \$20.69 |
| Starane ${ }^{\bullet}$ Advanced | Fluroxypyr $333 \mathrm{~g} / \mathrm{L}$ | Corteva Agriscience | \$35.60 | 0.45 L | \$16.02 |
| Status ${ }^{\circ}$ | Clethodim $240 \mathrm{~g} / \mathrm{L}$ | Sumitomo Chemical | \$13.75 | 0.3 L | \$4.13 |
| Striker ${ }^{\text {® }}$ | Oxyfluorfen $240 \mathrm{~g} / \mathrm{L}$ | Nufarm | \$2,330.00 | 75 mL | \$174.75 |
| Sulfosulfuron 750 | Sulfosulfuron $750 \mathrm{~g} / \mathrm{kg}$ | Genfarm | \$263.00 | 25 g | \$6.58 |

Read the label before using a product.

| Product name | Active ingredient | Company | Price*/L or kg (Ex GST) | Commonly used rate | Cost/ha |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Talinor ${ }^{\bullet}$ | Bicyclopyrone + bromoxynil + cloquintocedmexylg/L | Syngenta | \$31.50 | 0.5 L | \$15.75 |
| Tenet ${ }^{\text {® }}$ | Metazachlor $500 \mathrm{~g} / \mathrm{L}$ | Adama Australia | \$46.20 | 1.0 kg | \$46.20 |
| Terbyne ${ }^{\oplus}$ Xtreme ${ }^{\oplus} 875$ WG | Terbuthylazine $875 \mathrm{~g} / \mathrm{kg}$ | Sipcam | \$16.54 | 1.2 kg | \$19.85 |
| Terrad'or ${ }^{\circ}$ | Tiafenacil $700 \mathrm{~g} / \mathrm{kg}$ | Nufarm | \$346.40 | 40 g | \$13.86 |
| Terrain ${ }^{\text {® }}$ | Flumioxazin $500 \mathrm{~g} / \mathrm{kg}$ | Nufarm | \$158.00 | 30 g | \$4.74 |
| Topik® 240 EC | Cloquintocet-mexyl $60 \mathrm{~g} / \mathrm{L}+$ clodinafop-propargyl $240 \mathrm{~g} / \mathrm{L}$ | Syngenta | \$34.56 | 85 mL | \$2.94 |
| Trezac ${ }^{\circ}$ | Aminopyralid $25 \mathrm{~g} / \mathrm{L}+$ halauxifen $30 \mathrm{~g} / \mathrm{L}+$ cloquintocet mexyl $30 \mathrm{~g} / \mathrm{L}$ | Corteva Agriscience | \$69.70 | 0.2 L | \$13.94 |
| Triasulfuron 750 | Triasulfuron $750 \mathrm{~g} / \mathrm{kg}$ | Genfarm | \$186.00 | 35 g | \$6.51 |
| Triathlon ${ }^{\text {b }}$ | MCPA $250 \mathrm{~g} / \mathrm{L}$ + bromoxynil $150 \mathrm{~g} / \mathrm{L}+$ diflufenican $25 \mathrm{~g} / \mathrm{L}$ | Adama Australia | \$18.78 | 750 mL | \$14.09 |
| Tribenron | Tribenuron-methyl $750 \mathrm{~g} / \mathrm{L}$ | Titan | \$160.00 | 25 g | \$4.00 |
| Triflurx ${ }^{\circ}$ | Trifluralin $480 \mathrm{~g} / \mathrm{L}$ | Nufarm | \$8.40 | 0.8 L | \$6.72 |
| Ultro ${ }^{\circ}$ | Carbentamide $900 \mathrm{~g} / \mathrm{kg}$ | Adama Australia | \$41.88 | 1.1 kg | \$46.07 |
| Velocity ${ }^{\circ}$ | Pyrasulfotole $37.5 \mathrm{~g} / \mathrm{L}+$ bromoxynil $210 \mathrm{~g} / \mathrm{L}$ | Bayer CropScience | \$39.00 | 0.5 L | \$19.50 |
| Verdict ${ }^{5} 520$ | Haloxyfop-r $520 \mathrm{~g} / \mathrm{L}$ | Corteva Agriscience | \$48.40 | 0.05 L | \$2.42 |
| Voraxor ${ }^{\text {® }}$ | Salfufenacil $250 \mathrm{~g} / \mathrm{L}+$ trifludimoxazin $125 \mathrm{~g} / \mathrm{L}$ | BASF | \$175.50 | 0.2 L | \$35.10 |
| Weedmaster ${ }^{\text {DST }}{ }^{\text {® }}$ | Glyphosate (present as the potassium and monoammonium salts) $470 \mathrm{~g} / \mathrm{L}$ | Nufarm | \$8.44 | 1.5 L | \$12.66 |

*Prices are an average retail (excluding GST) guide only. They were correct on 26 May 2023 but will vary according to location,
availability and quantity purchased. availability and quantity purchased.

Table 42. Retail prices of adjuvants used on winter crops.

| Product name | Chemical type | Company | Price*/L or kg (Ex GST) | Commonly used rate/ ha** | Cost (\$/ha) |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Agral $600^{\circ}$ | Wetting agent | Syngenta | \$12.20 | 0.2 L | \$1.22 |
| BS $1000{ }^{\circ}$ | Wetting agent | Nufarm | \$7.88 | 0.25 L | \$0.99 |
| Hasten ${ }^{\text {® }}$ | Crop oil + surfactant | Vic Chemical Co | \$6.80 | 1.0 L | \$3.40 |
| L1700 ${ }^{\circ}$ | Surfactant/penetrant | Nufarm | \$7.00 | 0.25 L | \$0.88 |
| Liase ${ }^{\text {® }}$ | Ammonium sulfate | Nufarm | \$3.10 | 2.0 L | \$1.55 |
| Titan Paraffinic oil | Paraffinic oil | Titan | \$6.59 | 1.0 L | \$3.30 |
| Uptake® spraying oil | Crop oil + surfactants | Corteva Agriscience | \$7.80 | 0.5 L | \$3.90 |
| Wetter TX ${ }^{\circ}$ | Surfactant | Nufarm | \$14.13 | 0.2 L | \$1.41 |

*Prices are an average retail (excluding GST) guide only. They were correct on 26 May 2023 but will vary according to location, availability and quantity purchased
**Price based on $50 \mathrm{~L} /$ ha water rate


|  |
| :---: |
|  |  |

State Seasonal Update:
Conditions \& Outlook
The State Seasonal Update is produced monthly and is the official point of reference of seasonal conditions across NSW for producers, government, stakeholders and the public

Combined Drought Indicator: Latest NSW Drought Maps

Is an interactive tool that provides a snapshot of current seasonal conditions for NSW, factoring in rainfall, soil moisture and pasture/crop growth indices.

Uses a technology that allows fast, stable transfer of data and informatio
direct from the EDIS system to your computer. The portal contains severa
downloadable features from the NSW Combined Drought Indicator.
Seasonal Conditions
Information Portal

Farm Tracker Mobile Application

Farm Tracker is a tool you can use to record seasonal conditions. You can: 1. Complete a simple crop, pasture or animal survey
2. Keep and manage a photo diary of your farm
omplete this survey and tell us what is important to you as DPI continues to improve our Seasonal
Have your
say

Conditions monitoring program. Eg. improved local accuracy of data and climate networks, better ways of communicating, or strengthening linkages to drought management and relief measures.

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- Controls weeds across the complete soil surface including in the furrow, when applied EPE



[^0]:    To crosscheck your calculations: number of tanks $\times$ volume of chemical per tank $=$ area to be sprayed $\times$ chemical rate. Source: SMARTtrain Calibration and records supplement 2010.

[^1]:    Figure 7. Field pea -
    Figure 7. Field pea
    semi-leafless leaf type semi-leafless leaf type
    (Pisum sativum) e.g. PBA Butler ${ }^{\infty}$, PBA Oura ${ }^{\text {b }}$ PBA Wharton ${ }^{\star}$, Morgan ${ }^{\text {® }}$.

[^2]:    Key： $\mathrm{h}=$ hours， $\mathrm{d}=$ days， $\mathrm{w}=$ weeks， $\mathrm{mo}=$ months， $\mathrm{NR}=$ not required， $\mathrm{NNSW}=$ northern $\mathrm{NSW}, \mathrm{SNSW}=$ southern NSW．
    $\checkmark=$ registered for these crops within a spraying／planting window；refer comments．

[^3]:    Key: $\mathrm{h}=$ hours, $\mathrm{d}=$ days, $\mathrm{mo}=$ months, $\mathrm{fb}=$ followed by, $\mathrm{IMI}=$ imidazoline tolerant varieties, $\mathrm{NR}=$ not required, $\mathrm{S}=$ suppression
    Adjuvant key: $M O=$ mineral oil, $M O S=$ mineral oil plus surfactant, $M S O=$ methylated seed oil, NIS $=$ non-ionic surfactant.

[^4]:    Key: $\mathrm{h}=$ hours, $\mathrm{d}=$ days, $\mathrm{mo}=$ months, $\mathrm{fb}=$ followed by, $\mathrm{IM}=$ imidazoline tolerant varieties, $\mathrm{NR}=$ not required, $(\mathrm{S})=$ suppression only

[^5]:    Key: $\mathrm{IMI}=$ imidazoline tolerant varieties, $\mathrm{NR}=$ not required, $(\mathrm{S})=$ suppression only
    Adjuvant key: $M O=$ mineral oil, $M O S=$ mineral oil plus surfactant, $M S O=$ methylated seed oil, NIS $=$ non-ionic surfactant.
    NIS products might indicate a specific concentration (i.e. NIS 1000); refer to adjuvant chart for example products.

[^6]:    Key: $I M I=$ imidazoline tolerant varieties, $N R=$ not required, $(S)=$ suppression only.
    Adjuvant key: $M O=$ mineral oil, $M O S=$ mineral oil plus surfactant, $M S O=$ methylated seed oil, NIS $=$ non-ionic surfactant.

[^7]:    Key: $I M I=$ imidazoline tolerant varieties, $\mathrm{NR}=$ not required, $(\mathrm{S})=$ suppression only, $\mathrm{CR}=$ cereal rye, $\mathrm{T}=$ triticale.
    Adjuvant key: $M O=$ mineral oil, $M O S=$ mineral oil plus surfactant, $M S O=$ methylated seed oil, NIS $=$ non-ionic surfactant
    NIS products might indicate a specific concentration (i.e. NIS 1000); refer to adjuvant chart for example products.

[^8]:    Ajjuvant key: $\mathrm{AMS}=$ liquid ammonium sulfate $\mathrm{MO}=$ miner .

[^9]:    Key: $\mathrm{d}=$ days, $\mathrm{w}=$ weeks, $\mathrm{mo}=$ months, $\mathrm{NR}=$ not required
    Adjuvant key: $\mathrm{MO}=$ mineral oil, $\mathrm{MOS}=$ mineral oil plus surfactant, $\mathrm{MSO}=$ methylated seed oil, $\mathrm{NIS}=$ non-ionic surfactant

[^10]:    NIS products might indicate a specific concentration (i.e. NIS 1000); refer to adjuvant chart for example products.

