

STOP OFF-TARGET SPRAYING RIVERINA – A GRASSROOTS APPROACH ACROSS INDUSTRIES



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PHOTO: Many growers have a spray plan in place to minimise the risk of spray drift. However, the plan can quickly go out the window when circumstances and conditions change, and there is pressure to get the spray job done.

QUICK TAKE

- Spray drift damage is an issue across all agricultural industries – and never more so than in a cropping season like 2022, with large areas of crops being sown.
- Stop Off-Target Spraying NSW (SOS NSW) is a grassroots program initiated by a group of farmers in the Macquarie Valley, in the summer of 2017–18, who were concerned about the damage being done by chemicals not compatible with sensitive crops.
- The SOS Riverina Valley branch was established as a direct result of the issue of off-target spraying being raised at IREC breakfast meetings in 2019. A committee was established from a CRDC-funded forum and has been active since.

There is no doubt that growers across all industries are looking for the best bottom line for their business. But they also have a focus on protecting the health of their families and the environment by avoiding spray drift.

WITH high rainfall and plenty of irrigation water, the 2021–22 summer crop is as big as it has been for many years. Winter crop plantings are also anticipated to be large. As a result, there will be a complex mix and pattern of chemicals being sprayed on crops across the region this season.

Stop Off-Target Spraying (SOS) Riverina Valley will again be raising awareness of the issue of off-target spraying, by promoting a range of excellent resources available for growers and collaborating with growers, advisors, researchers and government compliance agencies.

Nobody sets out to cause spray drift damage to their own or another grower's crops, but circumstances sometimes get in the way and unfortunately it happens. It is often the result of not planning the on-farm spray program appropriately and consequently having short periods of time to get the job done.

SOS Riverina Valley is disappointed to see that spray drift damage to a range of crops across the region remains widespread. But it also recognises that the issues and reasons associated with spray drift are complex. Most growers are aware of their neighbours and their crops, and manage their spray programs accordingly. However, often the problem is not next door, it can be on a farm several kilometres away and even as far as 40 km away.

Growers in a number of regions in NSW have been surveyed to benchmark current spray practices and identify the key constraints to reducing the risk of spray drift.

Lack of planning

Up to 75% of growers in some regions have a spray plan in place which minimises the risk of spray drift occurring. However, this can go out the window when growers are pushed for time and spray when conditions are not ideal, choose the wrong chemical and don't safeguard sensitive crops.

In most cases of spray drift damage seen in the Riverina this season, growers have not planned appropriately.

Spraying at the wrong time of the day

Whilst 75% of growers surveyed do 'most of' their spraying an hour after sunrise through to midday, the 2021–22 season was a little different. Time and weather constraints made it difficult to get the spraying done at the right time to effectively control weeds.

Many incidents of spray drift damage seen this season have been the result of growers spraying during surface inversion conditions. Better information around the occurrence of surface inversions has challenged our thinking on the best times to spray, and in response, weather stations have been positioned throughout the regions to allow growers to make better-informed decisions.

Figure 1 is data that has been collected from weather stations in the Macquarie Valley in 2021 by the CottonInfo team. The data aligns with the 24-hour spray schedule in Figure 2.

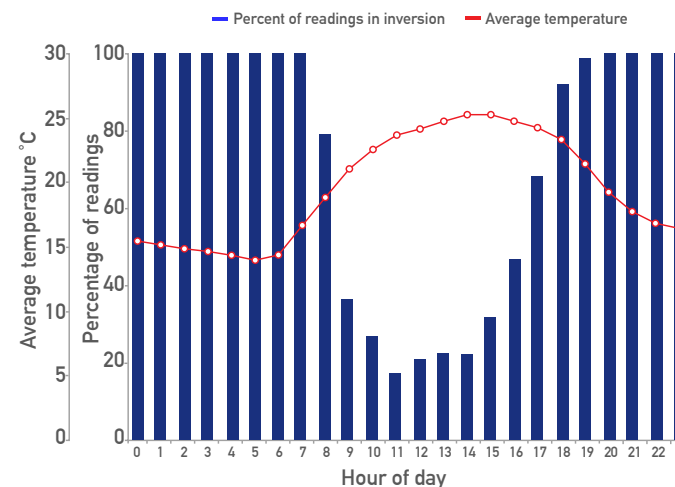


Figure 1. The risk of surface inversions (percentage of readings in inversion) over a 24-hour period collected from weather stations in the Macquarie Valley. SOURCE: A Thomas, CottonInfo.

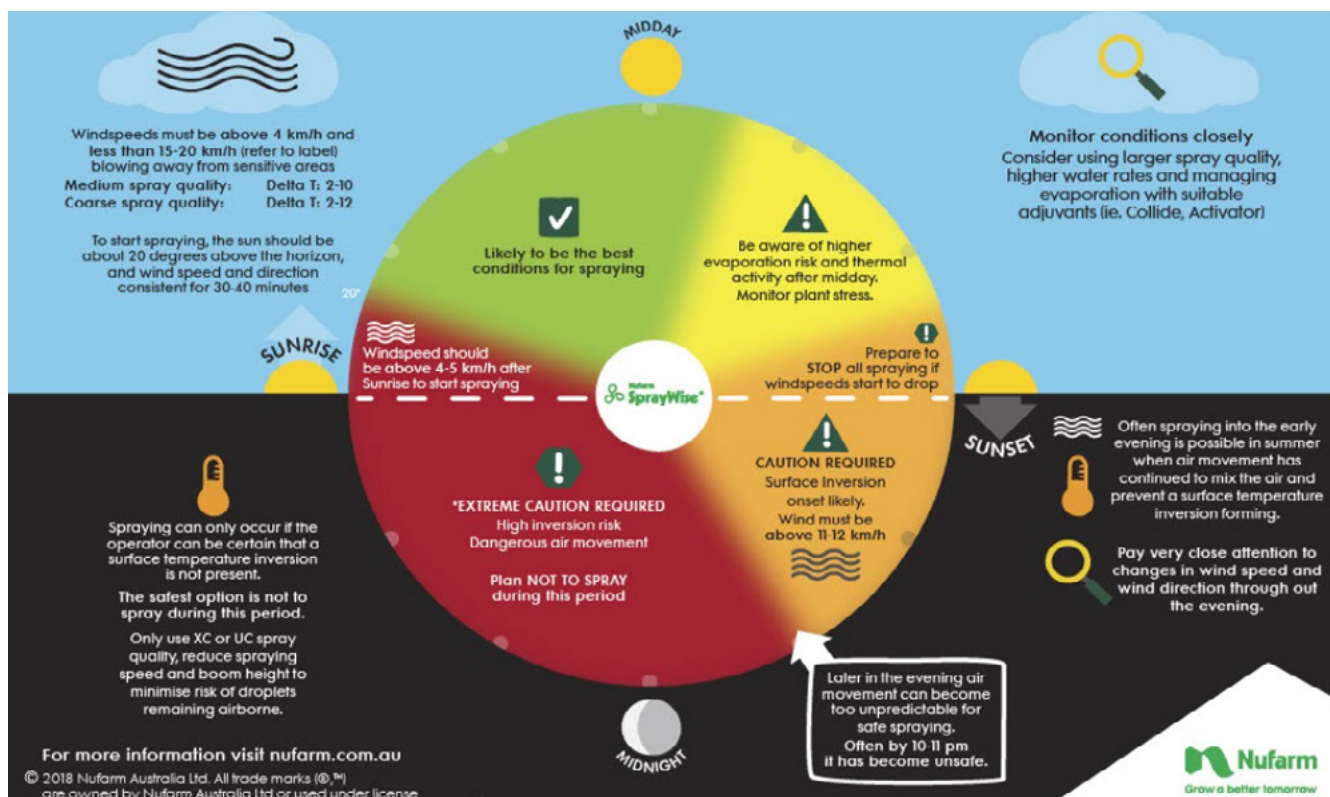


Figure 2. 24-hour risk profile for summer spraying. Nufarm 2018.

Chemical and adjuvant selection

SOS Riverina Valley is aware that some advice given to growers on chemical and adjuvant selection does not adequately consider the risks of spray drift, particularly with the application of 2,4-D. Not only can this be an expensive mistake for the individual it also can impact the agricultural industry significantly by the registration of 2,4-D potentially being withdrawn. The selection of the wrong adjuvant for the situation can reduce droplet size and significantly increase the risk of spray drift occurring.

Machinery and technology

There is no doubt that the developments in machinery and technology have transformed the farming game and given growers greater capacity to get the job done more efficiently. These advances have also increased the risk of spray drift for the unaware. We know that up to 90% of growers have indicated they keep the boom height low to reduce the risk of spray drift. However, the awareness that the recommended boom height being 50 cm or lower was not clear and difficult to achieve with huge booms and higher travel speeds.

Additional resources on YouTube

Spray timing is more than just wind conditions

[Mary O'Brien explains](#) how to pick an early morning inversion.

Spraying 1 hour after sunrise to midday to avoid inversions is best practice to reduce drift

[Mary O'Brien explains](#)

Simple techniques to minimise spray drift and improve your productivity

[Bill Gordon explains](#)

Key checks to improve spray efficiency

[Bill Gordon explains](#)

Using a TTI coarse nozzle instead of the older style coarse nozzles can reduce spray fines by 90%

[Jeremy Rennick explains](#)

Choose adjuvants to increase droplet size and reduce drift

[Malcolm Salisbury of NuFarm explains](#)

The Riverina region is all over the 5 commandments to reduce spray drift

[Kev Sternberg explains](#)

Do you keep the right records as evidence of your spray practice?

[Bill Gordon explains](#)

Boom heights not being set at the optimal height, travel speeds being substantially higher than recommended best practice and spraying at night under lights or GPS navigation, continue to increase the risk of spray drift.

Up to 88% of growers indicated they use the largest spray quality possible while maintaining efficacy of the chemical application through selecting the right nozzle and adjuvant. However, there is still room to improve this in planning to minimise the risk of spray drift.

Keeping spray records

Growers surveyed about keeping spray records had a range of views. These included 'that keeping spray records is not important', 'other growers don't keep records either', 'everyone cuts corners' and 'nobody will be checking anyway'. Apart from all of these views being incorrect, it is of concern for all regions, not only for potential crop damage but also for regional economies, and the health of the environment and the community.

Growers are increasingly reporting incidents of spray drift damage in 2021–22. Reports trigger an investigation by the Environment Protection Authority (EPA), who will randomly check spray records and practices across the district. A failure to meet compliance standards can result in hefty fines or litigation and should be avoided at all costs.

Follow the commandments

The 5 commandments are a good place to start to reduce the risk of spray drift (Figure 3).

1. *Never spray during surface inversion conditions* – consider that there is a 100% chance of a surface inversion from 8 pm to 7 am and avoid it. Know the other parameters to be checked before spraying at other times (Figure 2).
2. *Use the largest spray quality or droplet size possible* – select the right adjuvant and nozzle for the job to reduce spray drift by up to 90%. Check with your advisor or machinery dealer on what the is best choice for your situation.
3. *Keep the boom height less than 50 cm above the target*
4. *Keep travel speeds below 22 km/h*
5. *Avoid adjuvants that decrease the droplet size* – check with your advisor on what is the best choice for your situation.

Avoiding spray drift for all growers is about managing the risk. If one or more of the commandments are not achievable then optimise the other choices. Plan and be smart about the choices you make for your situation.

SOS Riverina Valley encourages producers across all industries to plan their spray program and make a commitment to reducing spray drift on their properties.

Keep up to date on advances and emerging issues with spray drift on [twitter](#) and [Facebook](#) or [sos-nsw.com/](#). 🌤️

Contact the SOS Riverina Valley



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Damage to cotton in 2021 as a result of spray drift.
PHOTO: Mitch Cuell

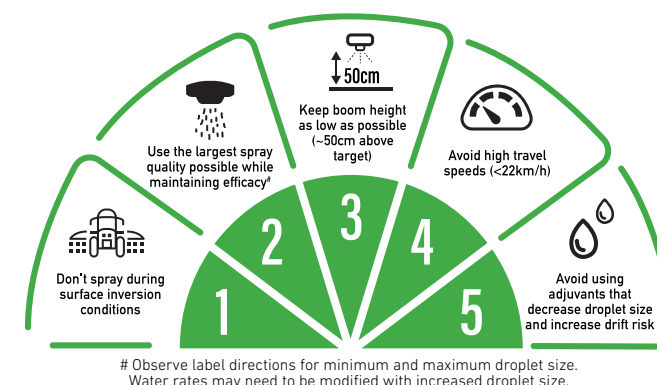


Figure 3. The 5 commandments according to Stop Off-Target Spraying (SOS NSW)