

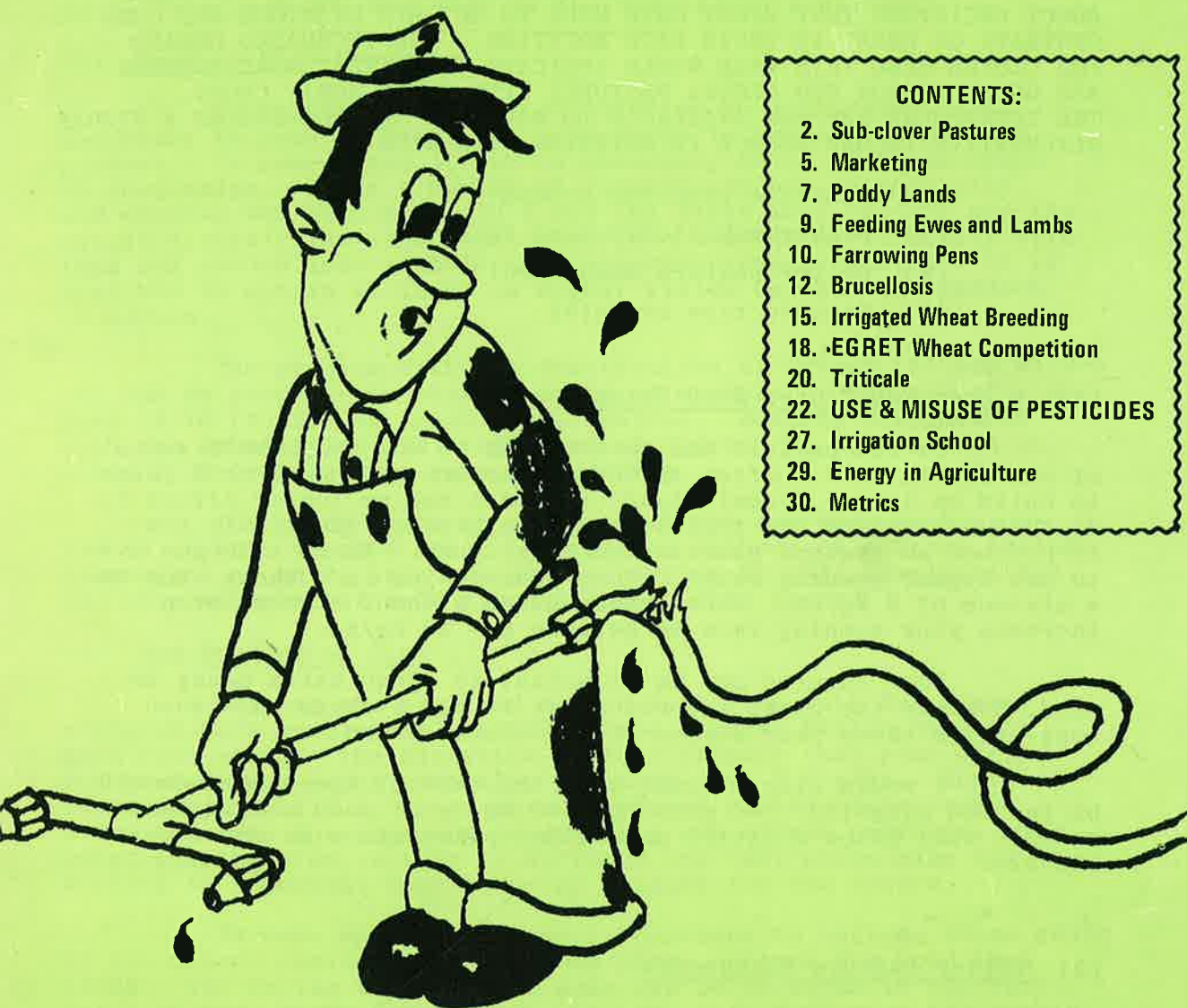
# **FARMERS' NEWSLETTER**

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# **Use and Misuse of Pesticide**

# Sub Clover Pastures

## - Some new techniques

By: Keith Woodlands,  
District Agronomist,  
LEETON NSW 2705

ATTRACTIVE STOCK PRICES ARE MAKING FARMERS THINK AGAIN ABOUT DECISIONS THEY MIGHT HAVE MADE TO GET RID OF STOCK AND CONCENTRATE ON WHEAT IN THEIR RICE ROTATION. THE INCREASED DEMAND FOR CLOVER SEED THIS YEAR WOULD INDICATE TO ME THAT MORE FARMERS ARE GOING TO SOW SUB CLOVER PASTURES WITH THEIR WHEAT CROPS. THE TECHNIQUES ARE NOW AVAILABLE TO MAINTAIN SUB CLOVERS AS A VIABLE ALTERNATIVE INCOME SOURCE IN ROTATION WITH RICE.

The Technique revolves around:

- (1) Higher sub clover seed rates
- (2) Better pasture management
- (3) Stubble rice cropping.

### (1) Higher Sub Clover Seed Rates

In the past it has been common to sow only small amounts of sub clover seed. Often it took a pasture paddock 2 or 3 years to build up into a decent stand. Farmers can no longer afford to do this because of the tightness of rotations. The aim is now to produce an instant pasture the first year. To do this you have to use higher seeding rates. When undersowing in a wheat crop use a minimum of 6 kg/ha. When sowing alone without a wheat crop increase your seeding rate to between 8 - 10 kg/ha.

Some farmers may be reluctant to spend extra money on seed, however the costs are not great if you average this seed cost over a three year period of the clover stand.

I would also suggest that the rate of Egret seed should be reduced slightly. No more than 60 kg/ha of seed should be sown as this will allow a little more light penetration to the undersown clovers.

### (2) Better Pasture Management

Farmers should adopt techniques that will produce a maximum sub clover seed set the first year. If you have undersown with a wheat crop it is better not to burn the stubble as this provides some protection to the young seedlings after watering.

Topdressing during the first year with superphosphate is normally recommended as this will stimulate both growth and seed production. If financial considerations permit it is better to broadcast 250 kg/ha of single superphosphate the first year than to give smaller annual amounts. Phosphate levels can be followed in the soil by regular soil testing.

Maximum clover seed production is achieved by heavily grazing sub clover up until the time flowering starts. Heavy grazing up until flowering allows light penetration to the flowers and encourages a higher seed set. Grazing should be lightened off or stopped once flowering commences. Some farmers have adopted the practice of shutting up first year paddocks for clover hay production. This technique seems to work well as there is normally plenty of seed left in the soil after a hay cut.

### (3) Stubble Rice Cropping

To maintain any type of rotation on most farms it is necessary to grow at least two rice crops in succession on each paddock. In some cases it may be necessary to go to three crops in succession. Quite a number of farmers are now successfully sod seeding two rice crops in a row the first into pasture and the second directly into the burnt stubble. Results particularly with Inga sod seeded into stubble are improving year by year and it is possible to obtain at least as high yields as when the paddock is worked.

The problem with ash deactivation of Ordram (R) and Saturn (R) can be overcome by early burning of stubble or the use of Stam LV 10 (R) for barnyard grass control. Results last season with the Herbigation (TM) technique of Ordram (R) application on burnt stubbles was also very encouraging.

The weeds Cumbungi and Water Couch can also be a problem in stubble cropped areas. Suggested methods of control include prevention of entry into the channel system by soil sterilisation and spot spraying of weed patches before they spread.

### (4) Sod Seeding of Rice

Farmers who have sod seeded Inga rice into Sub Clover pastures have consistently produced the highest yields over the past five years. The situation is no different this year with sod seeded Inga crops generally yielding over 7.5 t/ha. Surveys carried out by I.C.I. have shown increased yields of between 0.9 - 1.5 t/ha for Inga sod seeded into sub clover pastures. The extra grazing plus savings in nitrogen and fuel costs make sod seeding an important cost reducing feature for the future.

Farmers should plan their rotations to include three years of sub clover pasture as this seems about optimum for good Inga crops. The spring that rice is sown can be included in the three years as the clover has had time to add nitrogen during its growth period from the previous March. Because of the tightness of rotations the need for plenty of seed and instant pastures cannot be over emphasized.

## Recommended Sub Clover Varieties

At present there are three major varieties of sub clover recommended for irrigation areas. These are Woogenellup, Seaton Park and Trikkala.

Woogenellup is the most widely sown variety in the irrigation area at present. It is a very vigorous variety and is regarded as the most productive and best variety for hay production. The main drawback with Woogenellup is that it has very little hard seed. This means that most of the seed germinates the first year so that a false autumn break can reduce the seed carryover of this variety. Fresh seed has to be sown after each rice cropping phase.

Seaton Park is slightly earlier maturing than Woogenellup and sets more hard seed. Its total seed production is not as high as Woogenellup. However, some farmers have found it easier to control in the spring. As yet there has not been long enough experience with this variety to know if it will persist through a two year period of rice growing. Because of its higher hard seed content this could be a possibility.

Trikkala is a replacement for the old variety Yarloop. Being of the same sub species as Yarloop, it has similar tolerance to waterlogging. Yarloop has shown outstanding ability to persist through two years of rice growing and regeneration has been amazing. Yarloop is not recommended because of its high content of oestrogen causing poor lambing percentages. Trikkala is low in oestrogen and will not cause lower lambing percentages. Unfortunately it does not have as much hard seed as Yarloop and may not persist as well through the rice growing phase. Trikkala is still well worth trying if you can locate some seed supplies.

## New Varieties

At present district agronomists in co-operation with Dr. Ted Wolfe from Wagga Agricultural Research Institute are undertaking a testing programme to hopefully find better sub clover varieties for use in rice rotations. We are particularly looking for a variety with low oestrogen content and with similar persistence and waterlogging resistance as Yarloop. We would also like to find ways of getting clover seed to germinate in rice stubble after the second crop as the present varieties do not germinate well until the following autumn.

So sub clovers are not dead on the irrigation area, but are making a comeback. With the techniques suggested above, farmers are finding them a viable alternative to winter cereal growing.

# A Wider View of Marketing

By: Bob Gaden,  
Beef Cattle Officer,  
GOULBURN NSW 2580

AS A PRODUCER OF MEAT, YOUR BUSINESS IS THE FIRST STEP IN A CHAIN OF MARKETING EVENTS WHICH CULMINATES IN A CONSUMER SOMEWHERE SITTING DOWN TO ENJOY A SATISFYING MEAL.

Good marketing is ensuring that the same consumer keeps coming back for more, and at the same time pays you adequately for your share of his satisfaction.

## Sharing the Consumer's Dollar

Marketing costs have risen savagely in recent years, and producers have voiced concern at their shrinking share of the consumer's dollar.

But let us think for a moment as a member of the whole meat industry. If our marketing is good, we are aiming to win more total consumer dollars. That must be more important than arguing about who is "ripping off" whom.

How can we keep the dollars rolling in? We must be most careful to ensure that as dietary habits and eating patterns change, that meat products are adapted to suit these trends.

This year's market research commissioned by the A.M.L.C. is a valuable pointer to consumer changes. Cooked breakfasts and lunches are disappearing. Packaged convenience foods and "take-aways" are drawing a greater market share, despite their costs.

One approach is to cry aimlessly "eat more beef" and to rubbish the convenience food industry. This ignores reality and the tide of opinion amongst our market supporters. It will not be heard in the cities.

We could alternatively ride with the tide and make sure our product is up with the competition - processed, packaged and presented for consumer convenience. This has become the industry's big challenge for the future.

The pig industry is just now proving that a traditional meat product can be updated and marketed effectively. With a range of new easy-to-cook grilling cuts and vigorous promotion, sales of the "New Value Pork" have increased dramatically where it has been launched.



## Butter or Margarine?

Remember when margarine used to taste awful and look unattractive in that greasy paper? Table margarine graduated into modern marketing quite a few years back when they improved its taste and discovered the plastic container. Promotion worked initially on its spreadability and undetectable flavour.

Then medical research gave advertisers a windfall - their product had the health authorities' blessing.

Consumers at last could have the perfect excuse to use margarine. The medical evidence is still being debated, but even if it was completely disproved tomorrow, what housewife would give up the spreadability of margarine to return to the old unimproved (iceblock) butter?

The dairy industry lost a huge sector of their market to a competitor they did not take seriously.

The lesson was well learned and they have now moved into marketing. Have you noticed the dairy cabinet in the supermarket lately? New products - many of them promoted for health - and highly attractive designs. Yoghurt, sour cream and cheeses by the dozen with expanding sales.

## Meat or What?

It is nice to keep reassuring ourselves that nothing synthetic could replace the mouthwatering sizzle of rump on the griller. But meat has its problems.

Meat is messy and needs trimming before it is ready to cook. It is a lot of work packing it for the freezer so you can retrieve meal-size portions flat enough to slap on the griller. Fat is bad for your cholesterol count and tenderness never seems to be the same.

Where are our convenience meat products? Suburban housewives no longer regard the kitchen as the place of all life's fulfillment. With 40% of them now working, the extra cost of convenience in the kitchen is easy to afford.

At the opportune time, our competitor will suddenly appear. Your 200 gram "Soymeat" slice (beef, lamb or pork flavour) will be tasty, tender, cholesterol free and cooked to perfection in three minutes. Dieticians will recommend it to all weight watchers and business executives. The media will be saturated with its virtues - no refrigeration necessary, no messy blood and you cook it straight from the packet.

In fact, vegetable proteins are already being used in processed meat products to replace some of the cheaper meat cuts. Have a look, as I did, in the supermarket. A shepherd's pie and six brands of dog food containing soy protein. To cap it all, horror of horrors, the good old Australian meat pie has been infiltrated!

# Feeding Ewes and Lambs

By: J.D. Williams,  
District Livestock Officer (S & W).,  
COLEAMBALLY NSW 2707

ARE YOU ONE OF THE MANY FARMERS WHO STRATEGICALLY GRAZE EWES AND LAMBS? BY THIS I MEAN, DO YOU STOCK A Paddock REASONABLY HEAVILY FOR A MONTH AND THEN MOVE THEM TO A NEW Paddock FOR THE NEXT MONTH.

If so, you are reducing the potential growth rate of your lambs, taking longer to get them to market and possibly reducing their survival rate.

Young lambs are particularly susceptible to feed changes, so let us think about the effect of strategic grazing.

When ewes and lambs first go into a paddock, the feed is lush and leafy and therefore high in protein. By the end of a fortnight most of the leaves have been eaten. The remaining feed is stalky, lower in protein and higher in fibre. There still appears to be plenty of feed. A further fortnight passes and the feed has run out, so the sheep are moved on to another paddock. The new paddock has lush feed which again is high in protein and low in fibre.

It is quite possible this second paddock will also have a different proportion of clovers and grasses.

What happens? The lambs scour, lose weight and take four or five days to adjust to the feed in the new paddock - a week is lost.

Three or four paddock changes in the life of lambs adds an extra month to rear those lambs for market or weaning.

By set stocking ewes, starting two weeks prior to lambing until the lambs are sold or weaned, paddock feed composition changes will be very gradual and lambs will grow much faster.

# Raised Farrowing Pens Lift Production

By: G. J. Roese',  
Senior Livestock Officer (Pigs),  
LEETON NSW 2705

RAISED FARROWING PENS HAVE GIVEN IMPROVED PERFORMANCE AND HAVE REDUCED PRE-WEANING MORTALITIES.

SOME OLD FARROWING PENS ARE WASTEFUL IN SPACE, ARE LABOUR INTENSIVE AND DIFFICULT TO KEEP WARM, CLEAN AND DRY. FOR THE AMOUNT OF WORK INVOLVED THEIR RESULTS LEAVE SOMETHING TO BE DESIRED.

If producers are considering replacing their old farrowing pens they would do well to consider these new pen designs.

## Farrowing Pen

The raised pen is of basic design, 2100mm X 1800mm and stands on legs made from pipe, angle iron or R.H.S. The legs should be a minimum 200mm high. Pens can be fully or partly-slatted, with the mesh or solid areas fitting into an angle iron frame.

They can vary in size, depending on whether they will fit into existing shedding or a new building.

There are also variations with regard to the type of pen. They include pens with front creeps for easy inspection and supervision of piglets, or "V" designs where the crate is placed diagonally across the pen to reduce the width and depth required.

## Farrowing Crate

The crate is also of basic design, 600mm wide by 2100mm long and 1000mm high.

Crates with a curved bottom rail or vertical bars give best results.

It has been common to have either a straight, fixed rail or movable bottom rail, to restrict the sows movements, provide protection for young pigs but still allow them easy access to the sow's teats.

However, fixed rails often prevent piglets from suckling, while rails at suitable heights for older sows can allow gilts or small sows to be caught under the rail, and this usually occurs at farrowing time.



Movable rails can overcome these problems but they do require adjustment. It has been my experience that these rails just do not get adjusted. Unless properly secured, the sow can manipulate them, damaging the crate, the piglets or herself.

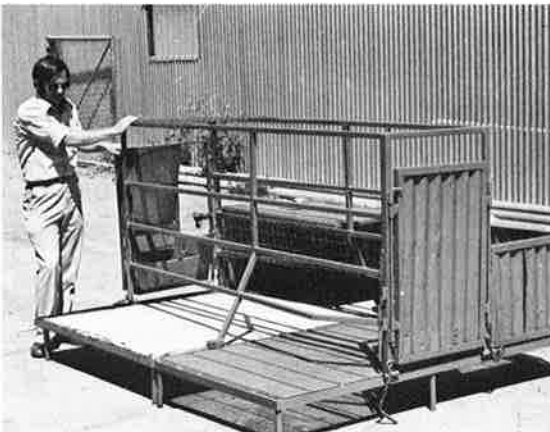
#### Advantages

(a) New piggeries - These crates can be built in sections and assembled in the grower pens. This allows you to start farrowing down sows even before the farrowing shed is completed. They can then be dismantled and re-assembled in the completed farrowing shed.

(b) Established piggeries - (i) Crates can be used the same as above but on a permanent basis where crates can be assembled and dismantled as required.

(ii) Crates can be built as a fixture into old farrowing pens. This allows you to build a new farrowing complex for a minimum outlay, by utilizing existing buildings.

A crate is currently being demonstrated in the South West Region and is available to producers to test in their piggeries.



Raised Farrowing Pen.



Curved bottom rail.

# Brucellosis Eradication

By: John Evers,  
Veterinary Inspector,  
Pasture Protection Board,  
NARRANDERA NSW 2700

and Bob Gahan,  
Beef Cattle Officer,  
LEETON NSW 2705

JOHN EVERS says:

ERADICATION OF BRUCELLOSIS IN CATTLE WILL COMMENCE  
SHORTLY IN THE RIVERINA/M.I.A.

Latest information received from the N.S.W. Department of Agriculture indicates that local cattle owners can expect to become involved as early as April this year. Testing on a reduced scale will probably begin in the Narrandera area first, but escalate to involve the entire M.I.A./C.I.A. and most of the Narrandera P.P. Board area after June, 1979.

Three-man bleeding teams will operate out of bases at centres such as Narrandera, Leeton, Coleambally and Griffith. Under the supervision of Department of Agriculture Veterinarians at Narrandera, these teams will blood test all breeding age cattle - steers excepted - throughout the district. Such testing will be compulsory for all cattle owners.

Herds found to be infected will then be retested every 30-60 days until two clean tests are achieved. A further check test will take place 6 months later.

All reactor cattle will be branded for identification purposes once blood test results are known. Owners will then have 3 weeks in which to dispose of the animals. In general, there are only two methods of disposal:

1. Slaughter on the property.
2. Slaughter at an approved killing works.

In each instance, compensation is payable in an attempt to bring returns into line with current fat market values. However, this may not always be possible because of the special procedures applying to handling of these diseased animals at the killing works.

Infected properties will remain under quarantine until reaching disease-free status. At the same time, all cattle producers in the District will have to seek approval prior to the introduction of any breeding stock.

Information already gathered via traceback on cattle tail tags and a random property survey in 1974/75 has revealed a high infection rate on irrigation and some river frontage country. Cattle producers on infected properties in these areas can look to a considerable degree of testing over the next 12-18 months.

Cattle producers should be making arrangements now so they can complete their testing obligations with the minimum of trauma and financial loss. There are several areas which should be given close attention -

- (a) Facilities for testing of cattle; yards, races, crushes etc.
- (b) Reduction of the breeding herd to a minimum size prior to the commencement of testing.
- (c) Continued use of free S.19 vaccination of all heifers between 3 and 9 months of age.

Many owners have tended to ignore these aspects over the past 2-3 years. Those who do not attend to them now will find themselves with a few head-aches later on this year.

BOB GAHAN says:

I cannot stress strongly enough to cattle producers that you follow John Evers' advice, so that you can complete the Brucellosis campaign as he said "WITH A MINIMUM OF TRAUMA AND FINANCIAL LOSS".

Looking on the practical side, this is going to be one of the few times that the majority of your herd will be yarded at the one time. So I would strongly suggest that your holding yards and paddocks be checked to make sure they are cattle proof.

It will be of the utmost importance that you get a clean muster of all females and bulls to be tested. One missed infected animal could cause you a lot of inconvenience and financial loss later on in the campaign. So out with the wire-strainers and half a coil of wire and a few steel posts!

Have you thought about putting an electric wire around the inside of that holding paddock - 14" to 18" from the existing fence and approximately 3' from the ground? You can buy a top quality electric fence 240 plug-in unit for around \$150, and a mile of wire for approximately \$40-\$50.

Next time you sell a fat cow for \$200-plus, think about investing in one of these units.

Next take a look at your yards. Is your race long enough, will it hold cows? You might need a new rail or two or a new post. How are those gates swinging? Maybe you need a new set of yards.

If you need plans for a new set of yards or would like to remodel your old yards, I would be only too pleased to have a look at your set-up. Quite often, that old set can be made to work a lot better with a few modifications and it can usually be done with a minimum of cost.

As the maximum compensation payable under the Brucellosis Eradication Scheme is \$175, producers who have any fat cows that are doubtful breeders or are doing a poor job of their calf; or heifers that are hard to get in calf or have slipped their calf - GET THEM TO THE FAT SALES OR MEAT WORKS BEFORE THE CAMPAIGN STARTS:- \$330 IS A LOT BETTER THAN \$175!

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# Irrigated Wheat Breeding

By: J.A. Fisher,  
Research Agronomist,  
WAGGA WAGGA NSW 2650

CURRENT IRRIGATED WHEAT YIELDS IN AUSTRALIA ARE WELL BELOW THE YIELDS BEING OBTAINED IN CLIMATICALLY SIMILAR AREAS OVERSEAS. THE BEST AUSTRALIAN YIELDS ARE ABOUT 7 t/ha (100bpa), IT SHOULD BE POSSIBLE TO OBTAIN YIELDS OF 10 t/ha.

To obtain this large increase in yield, improvements in both varieties and management are necessary. Changes in either alone are unlikely to be sufficient.

The aim of the irrigated wheat breeding programme is to develop varieties which can consistently produce a high yield of good quality grain when grown under irrigation. To do this a variety must be adapted to the area in which it is to be grown, have resistance to the important diseases and have suitable agronomic characteristics.

## Grain Yield

A high grain yield is the most important aim of the breeding programme, the agronomic characters and disease resistances which are selected for are either correlated with yield or they are important to enable high yields to be consistently obtained. Extensive use is made in the breeding programme of high yielding cultivars from overseas.

## Agronomic Characteristics

Cultivars must have a suitable maturity pattern to fit in with farming practices and environmental constraints. It is important that cultivars flower as soon as possible after the dangers of frost has past. This allows the crop to mature in milder conditions which are conducive to higher yields. High temperatures result in the crop maturing too rapidly, so that there is less time for grain filling. Under very hot conditions the plant may not be able to extract water fast enough from the soil, and may wilt during the middle of the day. For late sowings, following a summer crop, an early maturing cultivar is required. However higher yields can be obtained by sowing a suitable cultivar earlier. Some winter wheats are being selected since these will provide farmers with a greater flexibility in sowing dates.



The semidwarf wheats have a higher yield potential than the older taller wheats; this has been exploited in the cultivars recently released in Australia. For irrigation there may be an advantage in going to even shorter cultivars, the dwarf wheats. These cultivars grow about 60 cm high compared to the semi dwarfs at about 90 cm. There are some indications that these dwarf wheats may have a higher yield potential per se, but more importantly their better resistance to lodging will give farmers more confidence in using higher rates of fertilizer and watering more frequently.

In some situations waterlogging is a problem, especially if grades are low. High yielding crops transpire more water and hence irrigations will need to be more frequent, this increases the risk of waterlogging due to heavy rain following on irrigation. Cultivars appear to differ in their tolerance to waterlogging, and work is underway to identify cultivars which are more tolerant of waterlogging.

Ease of threshing is another necessary character. However it is essential that a cultivar is not too easy to thresh or it will be inclined to shatter excessively. In this regard Egret is too free and problems have been experienced where strong winds have occurred at harvest time.

In recent years the interaction of some cultivars with herbicides has become a problem. For example, Egret appears to be more susceptible to 2,4-D than other cultivars. In future all advanced crossbreds will be screened for their reaction to the commonly used herbicides.



John Fisher examining lines in the program developing resistance to Septoria.

## Disease Resistance

There are three diseases of major importance for irrigated wheat in central and southern New South Wales; these are stem rust, leaf rust and Septoria tritici. For a cultivar to be successful it is necessary for it to have resistance to these diseases. All new cultivars being tested for irrigation will have resistance to stem and leaf rust. The detailed testing of these cultivars is carried out by Sydney University as part of the national rust control programme.

Breeding for resistance to septoria tritici is less advanced. A number of lines with good resistance have been identified and cross-breds derived from these lines will be entering trials in 1981. Resistance to Septoria is more important in short strawed cultivars since the fungus reaches the critical flag leaf more rapidly. So far the Septoria problem has negated the other advantages of dwarf wheats.

## Grain Quality

Good grain quality is essential to ensure the saleability of the grain produced. Important characteristics are bushel weight, flour extraction and balanced dough qualities. The exact requirements depend on the protein content of the grain. At low protein levels the best balance is obtained from a soft grain with extensible dough properties, this flour can be used for biscuits. At medium protein levels a soft grain with stronger dough is desirable, this can be used in noodles or in blends for bread. At high protein levels a hard wheat is desirable.

Since the protein content of wheat grown in southern irrigation areas is usually low, soft wheats with suitable quality for biscuits are being selected. Soft varieties with suitable quality for the ASW grade are also being selected for these areas which do not have facilities for segregating biscuit wheat.

## Breeding Programme

A breeding programme normally takes about 10 years from crossing to the release of a superior variety. Two generations are being grown per year, about 10,000 rows in the winter generation and about 5,000 over summer. Up to 1,000 crossbred lines are tested each year, the few lines which have the desired combination of characters are widely tested through the irrigation areas.

It must be stressed, however, that the improvement of varieties is only one aspect of the work necessary to increase irrigated wheat yields; work on soil management, irrigation schedules and other agronomic aspects is also essential.

# Irrigated Egret Wheat Yield Competition

The fifth competition conducted by I.R.E.C. in conjunction with the Soft Wheat Millers' Group and the N.S.W. Department of Agriculture has resulted in the following winners.

## CHAMPIONSHIP AND COLEAMBALLY AREA

Mr. A. Boag,	6.33 tonnes/hectare
Farm 111,	(94 bushels/acre)
COLEAMBALLY NSW 2707	

## LEETON AREA

Mr. B. Lang	5.93 tonnes/hectare
Farm 948,	(88 bushels/acre)
Stanbridge via,	
LEETON NSW 2705	

## GRIFFITH AREA

Mr. J. McFarlane	5.39 tonnes/hectare
"Carawatha"	(80 bushels/acre)
Wumbulgal via,	
GRIFFITH NSW 2680	

I.R.E.C. congratulates the growers of the winning crops and thanks all those participating. The assistance of the Department of Agriculture officers and the Soft Wheat Millers' Group is again gratefully acknowledged.

# Lesson from the Irrigated Wheat Competition

BY: Terry Davis,  
District Agronomist,  
GRIFFITH NSW 2680

WELL, BECAUSE JACK MACFARLANE WAS IN A HURRY AND PICKED THE WRONG AREA TO BE YIELD TESTED COLEAMBALLY WON THE WHEAT COMPETITION AGAIN THIS YEAR - CURSES! AND SOUR GRAPES.

With a paddock average of 5.2 t/ha (25½ bags/acre) Jack did fairly well with an August sown crop. Allan Irvin gave him a real run for his money with a very early sown crop that suffered through that waterlogged winter and moderately heavy Septoria infection. There were very few other crops over the 24 bag mark. I guess the one real common factor between the two competition crops is the depth of working soil. Both Jack and Allan are firm believers in working soil deep. By deep we are talking of over 25 cm (10") - not just a deep scarifying to 10cm.

A mouldboard had been over both paddocks within two years for the crop. To me it was this depth of soil which saved Allan's crop from waterlogging badly, and gave Jack's crop the nutrition and moisture to develop quickly from a late start. Perhaps very few rice farmers will presently think of trying deep working - but I feel that if wheat yields are to increase then deep working must come.

Last year in a similar article on competition crops I made the statement "with good layout, 3 irrigations are needed every spring REGARDLESS OF RAIN (except in cases of extremely heavy rain). Well, Alan Boag (31 bags/acre) and Jack McFarlane did water 3 times. Allan Irvin and Bruce Lang (28 bags/acre) got away with fewer waterings because of much earlier sowings and the heavy winter rains.

Both Jack and Alan are specialised croppers - no live-stock, just rice and wheat with sunflowers or maize. In order to get the most out of their water supply they have scraped their paddocks to an even grade and both are in the process of putting in a water recirculation system. With good layout and a good depth of friable soil they can have their irrigation water on and off the crops quickly. By minimising the waterlogged period caused by irrigation they can afford to water more frequently. The root rot diseases are also reduced and problems of heavy rain immediately after irrigation reduced.

Other than the above practices my recommendations for wheat cropping are:-

- attempt to sow as early as possible (mid May) onto ground that has weed control (trifluralin for phalaris, rye and wireweed) and a pre-irrigation.

- fertilize with 20 kg/ha of phosphorus (one bag of double or triple super, or equivalent in compound fertilizers) plus nitorgen to suit paddock history - heavily cropped 60 kgN/ha, moderate cropping 30 kgN/ha, fertile ground 20 kgN/ha. The nitrogen can be deeply placed before sowing, applied at sowing, or topdressed without any great difference between each method. The form of nitrogen does not seem to make a great difference either.

- irrigate as soon as possible in spring, virtually regardless of rainfall. This is the head initiation stage and if the wheat plant even remotely thinks water is short, then a small head will result. Think back to last year - very wet early but drying out towards August, September and the driest October in history - because of the rain very few people watered early and overall head size was surprisingly small. How can you expect good yields when head size is restricted?

- irrigate regularly through spring with the last watering as the crop turns colour. This last irrigation is important to fill a fat grain.

# Triticale . . Possibly a Goer

By: T.Davis,  
District Agronomist,  
GRIFFITH NSW 2680

A NEW WORD IS BEING BANDIED AROUND THE RURAL PRESS - TRITICALE - AND PERHAPS IT IS TIME I GOT INTO THE ACT. TRITICALE IS A NEW CEREAL GRAIN DEVELOPED FROM CROSSING WHEAT WITH CEREAL RYE.

The aim of the cross was to bring new vigour into wheat along with higher protein, better disease resistance and improved grazing recovery. The aim has been partly achieved with some triticale lines showing slightly better yields than wheat, similar protein yields (but better composition of protein types for live-stock feeding) and good leaf disease resistance. Since breeding has concentrated on the above improvements grazing recovery is not yet better than wheat.

Some farmers will see an advantage in the marketing of triticale off farm. Overall it is very early days for triticale yet - with a great deal of breeding and research still going on.

Triticale has a larger grain than wheat that, as yet, does not fill well, leaving the grain with a distasteful wrinkled appearance. The grain has a stronger reddish pigment than wheat. The grain generally has a good balance of amino acids, particularly lysine, which makes a good livestock feed. Combined with the large seed, is a general lower than average field establishment so that sowing rates should be about 20% higher than wheat. Triticale flowers earlier than wheat but then slows right down through the grain set and filling stages so that harvest time is similar to wheat. It seems because of the earlier flowering it would be advisable to avoid late frosts by sowing triticale along with the late sown wheats.



For this year there is only one triticales variety readily available on the market - Gro-Quick. This variety has not performed at all well in several trials alongside wheat and improved triticales lines and I would not suggest that it be sown in the southern parts of the state. It does perform better in the northern parts of the state.

Two other lines - presently known as AT6 and AT7 are being seed increased for release next year. These lines show quite good promise. Sydney University and the Victorian Department of Agriculture are also close to releasing new triticales varieties.

So that is triticales so far - looks like we will have to wait a year or two yet to see how well it does perform. Until then John, Keith and I will keep an eye on AT6 and AT7 in wheat variety trials.

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# Triticales for Pigs

By: G.J. Roese',  
Senior Livestock Officer (Pigs),  
LEETON NSW 2705

PRELIMINARY FEEDING TRIALS HAVE GIVEN PROMISING RESULTS. IT WOULD APPEAR THAT TRITICALES GIVES BETTER PERFORMANCE THAN WHEAT FED TO ANIMALS UP TO 50 kg. LIVEWEIGHT.

Further evaluation work is presently under way at Wollongbar Agricultural Research Centre and results will provide information on which to base recommendations.

Triticales appear to be higher in the essential amino acids and, unlike wheat, do not appear to have the tendency for decreasing lysine with increasing protein.

It would seem likely that a feeding programme based on triticales, chickpeas and/or lupins, will develop in this area.

The only disturbing feature is triticales's susceptibility to ergot. Infected grain would cause fatalities if fed to livestock.

# The Use and Misuse of Pesticides

BY: R.S. Sproule,  
Special Horticulturist (Irrigated Areas),  
and  
Chris Black,  
Regional Publicity Officer,  
Department of Agriculture,  
LEETON NSW 2705

## Part A. Pesticide Poisoning

PESTICIDE POISONING CAN HAPPEN IN THREE WAYS:



### 1. THROUGH THE SKIN.

IF PESTICIDE IS SPILLED ON SKIN  
OR CLOTHING - REMOVE CLOTHING  
AND WASH SKIN IMMEDIATELY.

### 2. SWALLOWING THE PESTICIDE.

BECAUSE PESTICIDES HAVE BEEN  
STORED CARELESSLY, CHILDREN  
HAVE ACCIDENTLY SWALLOWED  
THEM.

POURING A PESTICIDE INTO A  
CONTAINER COMMONLY USED FOR  
FOOD OR DRINK IS ILLEGAL AND  
EXTREMELY DANGEROUS.



### 3. BY BREATHING IT IN!

INHALING DUST OR SPRAY  
OR

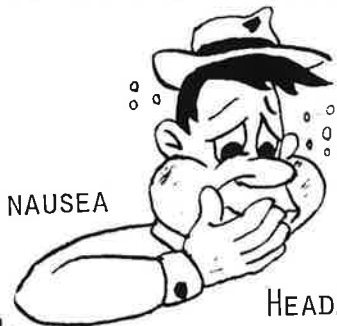
INHALING SMOKE OR FUMES  
FROM BURNING EMPTY  
CONTAINERS CAN CAUSE  
ILLNESS.

## Part B. Symptoms of Pesticide Poisoning

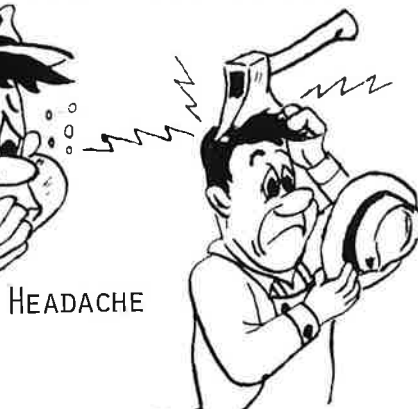
IF AFTER HANDLING ORGANOPHOSPHATE OR CARBONATE INSECTICIDES  
YOU FEEL



BLURRED VISION



NAUSEA



HEADACHE



GIDDINESS



CHEST PAINS

- You may be suffering early symptoms of poisoning.  
More advanced symptoms are:

PINPOINT PUPILS  
OF THE EYES



SWEATING



DROOLING



VOMITING

## Part C. If Contact with Pesticide occurs



IMMEDIATELY REMOVE CONTAMINATED CLOTHING - DO NOT SPREAD THE CONTAMINATION.

WASH CONTAMINATED AREA WITH PLENTY OF SOAP AND WATER - WATCH FOR SYMPTOMS OF POISONING.

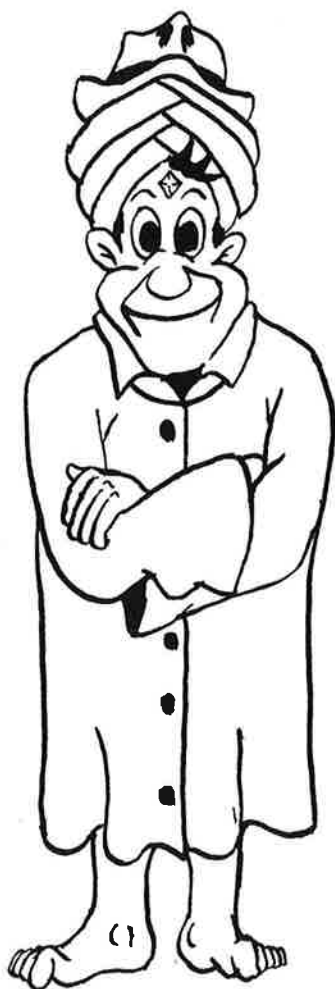


IF SPLASHED IN THE EYE, FLUSH  
WITH A GENTLE STREAM OF CLEAN  
WATER FOR AT LEAST 15 MINUTES.  
THEN GO TO THE DOCTOR.



ALF THE  
EXOTIC  
\* Palms Read.  
\* Blood Tests  
Analysed  
-NEXT SHOW-

AFTER LUNCH.



MIND READERS ARE NOT COMMON.  
IF SICK, LET SOMEONE ELSE  
KNOW.



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Rural Bank security, safety  
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**8.5%  
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RB5173/MCR

# Rural Youth 4-Day School in Irrigation

Sponsored by the Bank of N.S.W.  
and the Dept. of Agriculture.

A SCHOOL FOR FARMERS INTERESTED IN IRRIGATION WILL BE HELD AT YANCO AGRICULTURAL COLLEGE AND RESEARCH CENTRE FROM MONDAY 2ND JULY, 1979 TO THURSDAY 5TH JULY, 1979.

The school was being organised by Rural Youth, in conjunction with the Department of Agriculture. The school was being sponsored by the Bank of New South Wales and this enabled costs to be kept to a minimum.

The program was designed to cater for the needs of most farmers, whether they were large scale operators or just interested in small irrigation projects.

The school would be limited to 25 participants and anyone wishing to apply or obtain further information should contact the Department of Agriculture at P.O. Box 540, Leeton, N.S.W. 2705.

Date: Monday, 2nd July, 1979 to Thursday, 5th July, 1979. (Arrive by Sunday 5.30 p.m. - Depart Friday morning.)

Venue: Yanco Agricultural College and Research Centre, Yanco

Cost: Rural Youth Members \$50; Non-Members \$60 (all inclusive).

Eligibility: Open to anyone with a genuine interest in the topic.

School Numbers: Limited to 25 participants.

For Further Information  
Contact: Lou Revelant, Extension Officer,  
Department of Agriculture, Leeton.

Telephone: 069 53 3811  
62 3913 (home)

## Suggested Program

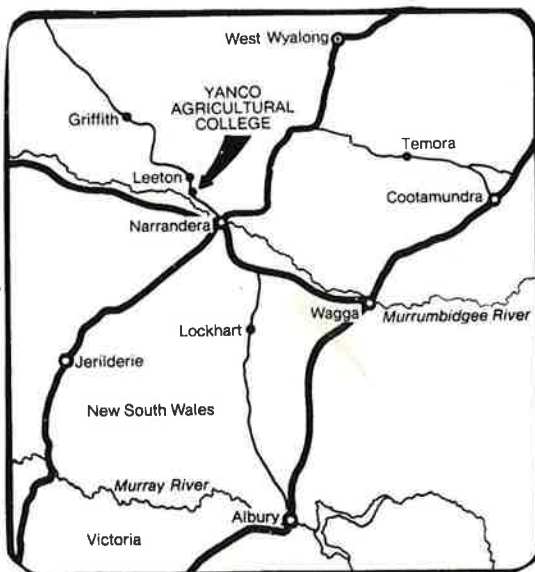
Introduction of irrigation	- why irrigate and drain?
Method of apply water	
Design criteria for various systems	- which system for irrigation conditions?
Water requirements of crops	- how much water?
Water in the soil	- how often?
Water/Soil/Plant relationships	
Peak Water Requirements	- flow rate/area irrigated calculations.
Seasonal Water Requirements	- volume/area irrigated calculations.
Water flow in pipes and channels	- some practical implications. (Demonstration in lab.)
Pumping equipment for irrigation	- types of pumps and their application.
System design	- what to look for in plans and specifications of irrigation projects.
Legal requirements	
Assistance available to landholders	- Acts administered by W.R.C.
Irrigation in N.S.W.	- Some observations of achievements and problems faced by irrigation in N.S.W.

(Program topics may be altered to meet particular group needs).

## Yanco Agricultural College and Research Centre

Yanco Agricultural College has been developed to provide education and vocational training in applied Agriculture.

The college is located on an 825 ha property, 10 km from the town of Leeton, at the southern end of the rich Murrumbidgee Irrigation Area in southwestern New South Wales. The property supports a variety of dry area and irrigated summer crops, winter crops, horticultural crops, and all major forms of livestock production. Included in these are a Poll Shorthorn Stud, commercial Hereford herd. Merino and first-cross sheep flock, a modern piggery and a dairy herd of stud Jerseys.



In addition to the modern teaching and library facilities there is residential accomodation available for male and female students in individual study-bedrooms. A wide range of recreational facilities is available including a swimming pool, tennis and basketball courts, cricket and football grounds.

# Energy in Agriculture

By: E. Tindale,  
Regional Director of Extension,  
Department of Agriculture,  
LEETON NSW 2705

IT IS NOW WELL KNOWN THAT THE WORLD'S FOSSIL FUEL RESOURCES ARE LIMITED AND THAT ONCE USED, ARE NOT RENEWABLE. WHILE ESTIMATES OF THESE ENERGY RESERVES VARY, THEIR GENERAL MAGNITUDE IS SHOWN IN THE FOLLOWING TABLE.

Fossil Fuel	Australian Reserves as % of world reserve.	Projected life of reserves based on current use patterns.
Black coal	5	Approx. 400 years,
Brown coal	13	depending on recoverability.
Crude oil	0.4	8 - 10 years.
Natural gas	1.1	About 25 years.

Those figures should be considered in light of the fact that other nations will continue to purchase increasing quantities of our reserves and that the estimates do not allow for increasing consumption in underdeveloped countries. Oil fuels, the most convenient form for agricultural use, are in shorter supply. In N.S.W., 15% of the State's automotive distillate is used on farms to produce wheat.

Agricultural industries will have to adjust to changes such as increasing cost of energy sources and decreasing availability in the longer term. Energy use is related not only to that directly consumed as power, but also that consumed in the manufacture and supply of goods and services to agriculture, e.g. manufactured stock foods, fertilizer, transport, etc.

A survey of fuel use on wheat farms carried out by the N.S.W. Dept. of Agriculture in 1977, indicated that primary cultivation used about 20% of the fuel while secondary cultivation used about 50%.

There is an increasing need for investigation into techniques for achieving fuel economy. These will include such considerations as better matching of equipment, type of implement and the number of cultivations. Greater interest will be shown in methods such as direct drilling, which will minimise fuel use in farming operations.

The energy cost of transporting agricultural products to remote markets is a significant factor and attention will have to be given to fuel saving arrangements if we are to maintain competitiveness of agricultural exports in world markets.

# Don't Knock Metrics

By: A. Brunskill,  
Senior Livestock Officer (S & W),  
Department of Agriculture,  
LEETON NSW 2705

METRIC MEASUREMENT HAS BEEN WITH US FOR QUITE A FEW YEARS NOW. IN FACT, WE HAVE A WHOLE GENERATION OF CHILDREN WHO KNOW LITTLE ABOUT THE IMPERIAL SYSTEM THAT MANY ADULTS CUT THEIR TEETH ON.

There is frequent criticism of the metric system, and many critics claim it is unnecessary, too difficult to understand and really doesn't mean anything.

Survey results are often presented to show that most of the population does not know how many metres in a kilometre, or the number of kilograms in a tonne. The comparisons are quite unfair, as no account is taken of the knowledge most people have of the "old system" of measurement.

Without looking up any books, test yourself on the following.

## Imperial

How many square feet in an acre?  
How many feet in a mile?  
How many pounds in a ton?  
How many ounces in a pint?

## Metric

How many square metres in a hectare?  
How many metres in a kilometre?  
How many kilograms in a tonne?  
How many millilitres in a litre?

Chances are you did not do much better on the imperial questions than the metric.



Most people become familiar with a few terms they use often. Dollars and cents are no problem, we all handle money and soon learn what it's all about.

Apart from knowing metric measurement, the main problem seems to be one of relating the measurement to something meaningful.

What does a metre look like?

Normal door height is just over two metres.

A hand span is 22 cm.

A five gallon drum contains 22 litres and a 44 gallon drum contains 200 litres.

To make metric measurement of paddock size more meaningful, get out the farm map and write in the size of each of the paddocks in hectares. It will not be long before you can visualise what a 40 hectare paddock is and this will help to relate to other areas.

Painting metric measurements on drums, spray vats or the side of sheds, will help associate a metric measurement with a distance or volume.

The following are the most frequently used metric measurements:

One unit name of length.....metre;  
Two names for area.....square metre and hectare;  
Two names for volume.....cubic metre and litre;  
Two names for weight.....gram and tonne.

To these names may be added the prefixes:

milli - meaning one thousandth part;  
centi - meaning one hundredth part;  
kilo - meaning one thousand times, i.e. 100 grams is one kilogram.

If you can learn these few basics about metrics and have a few items you can relate to in metric, you will be able to handle most metric measurements easily.

Further information is available in a booklet called "Metric Farming" available from the Metric Conversion Board, or your nearest Department of Agriculture Office.

# AT YOUR SERVICE . .

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