Lupin Logic Number 54

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Correction

In the article ‘Learning from 1994’ (Lupin Logic December 1994, page 107) under the ‘Weed control’ section, line 12 should have read: ‘Select® and not Sertin® kills ryegrass resistant to other grass selective chemicals’. My sincere apologies to Cyanamid, AgrEvo and farmers for any inconvenience that this error may have caused.

Some of my colleagues have also taken issue with me on this simplistic statement and have pointed out it is more accurate to say: ‘Select® may still give a reasonable level of control where other fops and dims no longer work. It might be worth a try.’

Of greater concern to some of my colleagues was that the article seemingly portrayed the use of another chemical to fix herbicide resistant ryegrass. This was not my intention. As farmers, we need to follow a weed control strategy which involves crop rotation and record keeping of chemicals used, thus enabling rotation of different chemical groups and alternative management methods of weed control to reduce weed seed populations.

A strategy of weed control in cropping systems based largely on chemicals is doomed to failure. See Lupin Logic Number 24, page 49.

One step ahead

With a greater variety of lupin species and cultivars likely to be available within WA in the near to medium term it is crucial the Grain Pool be well positioned to market these commodities. It is also important that market promotion of existing cultivars/species continues to cope with any increases in production. The Grain Pool Research and Development team is currently working in the following areas to ensure they are ‘one step ahead’.

- The ‘true’ nutritional value of WA Kiev Mutant and Gungurru lupins as a pig feed is being investigated via a national lupin research program being funded by the Grain Pool and the Pig Research and Grains Research Development Corporations. Additional trials aimed at establishing the value of Kiev Mutant lupins for dairy cattle are also being considered.

- Although yellow lupins are unlikely to be produced in quantity for four years, investigations are already in progress to examine their potential marketability. Similar work to assess the value of new angustifolius lupin varieties is also in progress.

- The pool has joined forces with a major enzyme manufacturer/distributor to research the merits of adding enzymes to lupin based poultry diets. The enzymes are expected to enhance the nutritional value of lupins by ‘breaking down’ poorly absorbed lupin seed components. With preliminary trials encouraging enzyme addition to diets, this may open up new local and international lupin marketing opportunities.

- A number of studies aimed at further quantifying the safety of lupins for human food have recently been completed or are nearing completion. They include the effects of alkaloids when ingested by humans, the impact of high (toxic) levels of alkaloids when fed to rats and the determination of whether lupin dietary fibre will reduce cholesterol levels in humans. All of these studies should enhance the opportunity for lupins to be accepted more widely as a food.

Seed manganese

Poor manganese nutrition in last year’s crop can cause yield penalties this year. Split seed is a common and well-recognised result of manganese deficiency. However, seeds which appear normal may also be suffering from marginal manganese deficiency which again can affect seed quality.
If the seed appears normal, the only way to detect potential problems is to have the seed analysed for manganese. Because germination is not affected, germination tests will not detect problems caused by low seed manganese.

Julie Crosbie and Nancy Longnecker at the University of Western Australia have shown that sowing seed with low manganese concentrations can result in decreased grain yield. This is caused by decreased emergence (up to 50 per cent) and reduced seedling vigour of the plants which emerge. Manganese fertiliser applied to this crop will help the plants which emerge and decrease the problem next year. But it will do nothing about decreased emergence this year.

If you grow lupins in areas prone to manganese deficiency, (Lupin Logic Number 8), Nancy suggests that you:

- have your seed analysed for manganese;
- buy in seed if yours has a manganese concentration less than 10 ppm. Before buying, check the seller’s seed manganese concentration;
- increase your seeding rate by 25 per cent if your seed has a manganese concentration between 10 and 15 ppm;
- apply manganese fertiliser at sowing if your seed manganese concentration is less than 15 ppm. Fertiliser at sowing will prevent problems in this and future crops (see Farmnote 71/93 and Lupin Logic Numbers 8 and 30). If you get an increased yield of 0.2 t/ha it will pay for the extra cost of the manganese at sowing.

**Bedtime reading**

I recommend to thinking students of agriculture that you purchase or obtain from your local library the book *Crop Evolution, Adaptation and Yield* by L.T. Evans, published by the Cambridge University Press.

Although aimed at research workers and students this book reaches conclusions of relevance to those concerned with developmental policy, environmental quality, resource depletion and human history. It is written in a clear and interesting style with some excellent quotes. The book opens with:

"Few scientists think of agriculture as the chief, or the model science. Many, indeed do not consider it a science at all. Yet, it was the first science - the mother of sciences; it remains the science which makes human life possible; and it may well be that, before the century is over, the success or failure of science as a whole will be judged by the success or failure of agriculture." (André and Jean Mayer 1974)

The book deals with historical agriculture, where we are now and more importantly the potential for the future.

**First bulk Albus shipments**

December saw the successful loading of the first bulk shipments of Albus lupins from Western Australia by the Grain Pool of WA. Two vessels, the 'Rhami Pak' and 'Beata Navis' loaded 7700 tonnes and 4300 tonnes respectively from Geraldton destined for Egypt. The timing of these shipments will enable the lupins to be bagged on arrival in Egypt and be available for the religious Ramadan period.

Egyptian government inspectors were on hand for the loading of the vessels, ensuring the lupins met the strict quality requirements for export into the human consumption market. Comments from these inspectors indicated that the grain was of excellent quality, a result of both farming practices and a successful cleaning operation.

**Lupin stubbles/overgrazing**

In general lupin crops were very short this year. As a result seed losses over the front will have been higher. The lack of vegetative growth also means that ground cover to prevent soil erosion will be less. Do not graze paddocks susceptible to wind erosion with less than 40 per cent ground cover.

All is not lost if seed remains on the ground. One hundred kilograms of lupin seed per hectare will provide about 5 kg of nitrogen to the following crop.

**Seed testing**

Only 605 samples have been received to date by the Seed Testing Laboratory. Seed quality is a factor we can control in crop production. Have you submitted your lupin seed sample for testing?

**Lupin receivals**

Receivals of lupins into CBH storage at the end of December were quite pleasing considering the difficult season. Geraldton zone achieved an estimated yield of almost 1.1 t/ha, but all other areas were well below this figure. Increased on-farm retention also limited the amount delivered, but the Grain Pool will have sufficient quantities to meet market allocations.

<table>
<thead>
<tr>
<th>Location</th>
<th>Quantity</th>
</tr>
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<tbody>
<tr>
<td>Geraldton</td>
<td>268,462</td>
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<tr>
<td>Fremantle</td>
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<tr>
<td>Albany</td>
<td>24,938</td>
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<tr>
<td>Esperance</td>
<td>9,798</td>
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<tr>
<td>Total</td>
<td>503,133</td>
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