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Recommended Citation

(1997), *Lupin Logic Number 81*. Department of Agriculture and Food, Western Australia, Perth. Book.

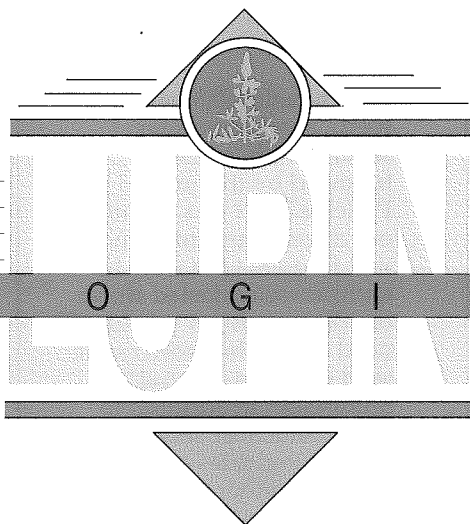
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Editor: Peter Nelson

Registered by Australia Post - Publication No. WBG2760

Number 81

April 1997

ISSN 1035-3763

Furrow seeding advances

Grant Morrow, Novartis and Paul Blackwell, Agriculture Western Australia

The use of furrow sowing techniques to harvest rainfall and sow onto moisture are widely used for establishment of crops (particularly lupins), pastures and fodder shrubs on non-wetting sands.

Wide furrow sowing is the practice of leaving the soil surface in a ridge and furrow pattern with seed being placed in the bottom of the furrow. Early versions of furrow sowing used wide sweeps or modified cultitrashes with emphasis on the creation of large deep furrows to maximise the water harvesting effect.

While this form of furrow sowing proved successful in crop establishment some problems were encountered, such as grass seed carryover to the following season, chemical damage to plants and furrow fill in. This led to some users of furrow sowing, particularly those who used modified cultitrashes to revert back to conventional methods.

The larger ridges offer some 'lock up' of weed seeds reducing weeds in the crop, however, farmers have reported increased weeds, particularly grasses, in following cereal crops as a result of seed lock up in the ridge during the lupin phase.

Problems can arise with chemical use, often leading to crop damage, particularly top up simazine and simazine/Brodal® applications. Crop damage is severest when chemical is applied under dry conditions with inadequate ground cover leading to chemical being harvested from the ridges and concentrated in the furrows.

Furrows formed using wide sweeps or modified cultitrashes are prone to 'fill in' as a result of wind erosion in areas of poor cover resulting in seed being buried too deep.

Narrow deep working points allow the formation of smaller ridges and offer the ability to cultivate beneath the seed to aid disease control. A reduction in the size of the ridge improves the chance of the ridge 'wetting up' and weeds germinating prior to spraying.

If using tines to sow lupin crops, an increase in row spacing to 36 cm (14") or greater, along with narrow points will help in leaving a 'flat' ridge to reduce the amount of weed seed burial in the inter row.

Another alternative to reduce the weed seed carryover is the use of double disc openers or angled leading coulters

that do not bury seed in the inter row, instead leaving it on the surface to germinate or degrade into non-viable seed. Presswheels are used to form furrows for water harvesting.

The adoption of narrow points also helps limit chemical damage. The move to a flatter ridge reduces the likelihood of chemical movement particularly when adequate ground cover is present. Research also identified the use of metribuzin as an alternative to simazine for post-emergence broadleaf weed control. Metribuzin/Brodal® mixtures have proved to be an effective alternative to simazine/Brodal® mixtures.

Spraying should be avoided when conditions are dry or there is little ground cover. Only spray when soil is moist and the lupin plant is at the 8 to 10 leaf growth stage. Grass chemicals should be applied as late as possible to maximise germination of weed seeds within the ridge.

The use of a banded soil wetting agent at the bottom of the furrow will enhance and improve the wetting of repellent sand. This leads to improved plant establishment in the furrow and will help to overcome the reduced water harvesting of smaller furrows.

Lupin Logic is published by the Grain Pool of WA in cooperation with Agriculture Western Australia.
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1996 research by Agriculture Western Australia in collaboration with ICI Australia has identified a new surfactant which will not affect the finishing of the crop as some of the other less degradable products appear to do. Groteric™ has been released this season.

Anthracnose telecast

I have had little feedback as to how well this telecast was received or attended. A video tape of the recording is available on request from offices of Agriculture Western Australia.

I believe that this medium of communication is an excellent way of rapidly getting information, both verbal and visual, to the farming community and at the same time enabling you to ask questions, seek clarification or make comments on the points raised.

Highlights of the program

1. The video, shot in New Zealand, showed the resistance to anthracnose of the NSW variety Wonga and the WA variety Kalya when compared with a susceptible variety Myallie. The fact that this resistance is present in the two most recently released varieties of lupins is pure coincidence. Seed supplies of these two varieties will be widely available to farmers in 1998. This augurs well for the future breeding of varieties and the containment of the disease.
2. The presentation of research results showing the efficacy of seed dressings to give some control, (85%) of anthracnose in the seedling stage. The most effective chemical, for which temporary registration has been obtained, is

carbendazim (0.5 gai/kg of seed), available under several trade names, followed by thiram and P Pickle T®. It was pointed out during question time that farmers who were in anthracnose infected shires or adjacent shires would still need to use the brown spot seed dressings Rovral® or Sumisclex® in addition to the anthracnose fungicide. These fungicides can be mixed together and if desired the seed can be sown into dry soil.

3. Concern was expressed by those farmers who use the WA blue lupin (500,000 ha) as a pasture species. The panel could see no solution to the fact that anthracnose could severely affect the future production of this cultivar.
4. The 1997 anthracnose package was reiterated:
 - Use clean seed.
 - Use an anthracnose seed dressing in addition to the brown spot seed dressing.
 - Avoid infected 1996 stubble.
 - On-farm surveillance and hygiene.

AGWEST lupin seed quality results

Germination

Germination is low averaging 78%. Over the last six years only in 1992 was the germination similar. Rain late in the season on the maturing crop is the likely cause for the low germination.

Myallie has been notable for its germination tending to be lower (averaging 72%) than other varieties.

Seed size

Overall the seeds are of average size – 140 grams per thousand seeds.

District	Germination (%)	Seed size (g/1000)
Albany	79	146
Esperance	81	153
Geraldton	81	140
Jerramungup	81	162
Katanning	77	145
Lake Grace	83	151
Merredin	76	138
Moora	77	136
Narrogin	75	143
Northam	75	135
Three Springs	76	135
'Other'	73	135
Overall %	78	140

Cultivar	Germination (%)	Seed size (mg)
Danja	81	147
Gungurru	78	140
Kalya	77	143
Merrit	80	141
Myallie	72	139

Reminders

- Summer weeds should be under control.
- Lupin seed organised and arrangements made for fungicide treatment.
- Remember if seeding this month the seed should be placed in wet or dry soil. Partial moisture will result in emergence problems.

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