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Recommended Citation

(1997), *Lupin Logic Number 80*. Department of Agriculture and Food, Western Australia, Perth. Book.

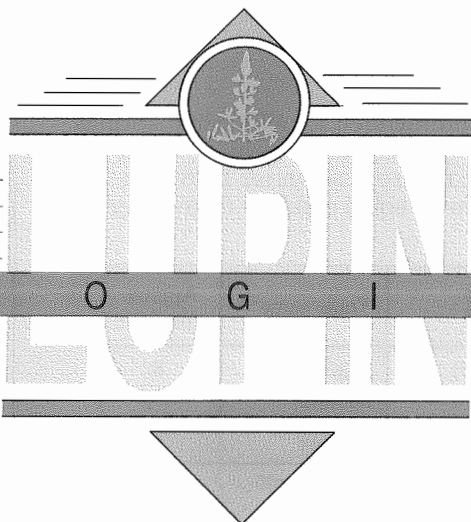
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Editor: Peter Nelson

March 1997

Registered by Australia Post - Publication No. WBG2760

Number 80

ISSN 1035-3763

Anthracnose update

It is only six months since anthracnose was first detected in lupin crops in the north of the State, but during that time Agriculture Western Australia and CLIMA have actively researched long-term solutions to this disease and formulated best bet management options for 1997.

What has been achieved?

Varietal screening

Screening of all genetic lupin material for resistance to anthracnose has and is taking place in New Zealand. New Zealand was chosen for this operation as anthracnose is already present in wild lupins and further spraying of anthracnose spores would not risk the agricultural industries of that country. To date preliminary results indicate that there are differences within varieties of *angustifolius* and this information will be used in future breeding programs to breed resistance to the disease.

Infection cycle

Research in the laboratory has shown that the infection cycle for anthracnose given suitable conditions, i.e. spore to spore, is much quicker in anthracnose than in the brown spot fungus *Pleiochaeta*. Spores need a moisture film on the plant surface for a minimum of four hours (longer below 15°C)

to germinate and grow into the tissue. After penetration the fungus spreads and develops a lesion in a few days. Warmer temperatures increase this rate of spore development.

Disease modelling

A preliminary model of anthracnose spread and severity has been developed. This model shows that the amount of rainfall received is an important factor in the spread of the disease, but that the initial level of seed infection is critical.

Where initial infections are low (about 1 in 100,000 seeds), severe infections may only occur in wet years. In an average year seed infection of 1% could lead to a disaster. These results demonstrate that lupin seed must come from areas free of anthracnose.

Plans for 1997

Mark Sweetingham, Senior Plant Pathologist at Agriculture Western Australia, strongly suggests that the main thrust to combat anthracnose must involve:

- Clean seed.
- Fungicide seed treatment.
- Avoiding 1996 stubble.
- Ban on albus production.
- Controlling lupins in cereals/canola break crops.
- On-farm surveillance and hygiene.

1. Clean seed

All growers should obtain a source of seed which has the lowest risk of carrying anthracnose. For affected shires in the northern wheatbelt, the best option is to source seed from shires further south and east where the disease has not been detected. Canadian experience with bean anthracnose showed that clean seed was the most critical factor in disease management.

2. Fungicide seed treatment

The fungicides which have temporary registration for 1997 (carbendazim, thiram and P Pickle T[®]) act primarily by reducing disease transmission rates of infected seed. This is true for thiram which shows no systemic activity in lupin seedlings at all.

Fungicide treatments do not eliminate the transmission of disease by seed.

Carbendazim shows some systemic activity which can assist in reducing disease development in seedlings splashed with spores for up to four weeks after sowing.

Carbendazim and thiram give poor control of brown spot, so they should be used in conjunction with Rovral[®] or Sumisclex[®]. These mixtures have been shown to be compatible and not result in phytotoxic effects.

Lupin Logic is published by the Grain Pool of WA in cooperation with Agriculture Western Australia.

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Fungicide dressing is highly recommended for all lupin plantings in infected shires and those bordering infected shires in 1997. They are recommended throughout the State for crops sown for 1998 seed. (In this case the seed crop should be grown some distance from other untreated lupins on the farm.)

| Efficacy | Fungicide in addition to Rovral® or Sumislex® | Trade name** | Approx. cost \$/ha |
|----------|-----------------------------------------------------|--------------------|--------------------|
| 1 | Carbendazim (0.5 g ai/kg seed) | Spin® Bavastin® | 8 |
| 2 | Thiram (1 g ai/kg) | Various | 6 |
| 2 | Thiram/Thiabendazole (1-2 mL product/tonne of seed) | P-pickle T® | 10 |

Note: Mention of trade names does not imply endorsement or preference to any company's product by Agriculture Western Australia. Any omission of a trade name is unintentional.

All recommendations were current at the time of printing but are subject to change as new research findings come to light.

3. Paddock selection

Obviously do not sow lupins on lupin stubble. A minimum break of one year cereal or other non lupin crop or pasture should be adequate following a previous narrow-leaved lupin crop. A two-year break after an albus lupin crop is recommended.

In infected shires avoid sowing lupins in paddocks adjacent to 1996 lupin paddocks or blue lupin pastures. If this is unavoidable sow a 50 m cereal or canola buffer along any adjacent fencelines.

4. Varieties

In 1997 sowing of Kiev Mutant of other *L. albus* cultivars is prohibited under the Plant Diseases Act.

5. Reservoirs of infection

Control lupins germinating on summer and autumn rains. Control is also important in cereal or canola crops sown on last season's lupin stubble and on roadsides and fence lines.

In infected shires, it is recommended to crop blue lupin pastures in 1997 to run down infection levels.

6. Surveillance and hygiene

It is important to inspect crops regularly for signs of infection. If infection is found in a lupin paddock, take appropriate precautions to prevent the spread of disease within and between paddocks by movement of vehicles or people.

It is particularly important to continue to check for infection in crops that are to be used for 1998 seed.

Anthracnose levy

Lupin growers will pay a 92 cents per tonne levy for lupins delivered during the 1996/97 season to compensate anthracnose affected farmers who had to plough in their crops. This levy was deducted from the February Top-up payment.

Market outlook

International protein markets over the last month have remained buoyant following further cuts to US soybean ending stocks in the February USDA report.

US ending stocks were reduced to just 3.8 MMT, a 34% decline from the previous year and the lowest figure since 1976/77.

Market attention is now focused on South America where record crops are expected in both Brazil and Argentina.

Some seasonal pressure is expected with the harvest and crushing of early new crop soybeans in Brazil. However, a recent strike by port workers at Parangua is supporting prices.

Given the historically low ending stocks levels for soybeans there is currently more upside potential for protein values than downside.

Lupin equities 1996/97

| | |
|--------------------|----------|
| 1st Advance | \$180 |
| Top-up 28 February | \$12.50 |
| Est. 2nd advance | |
| 31 August | \$12.50 |
| Est. 3rd advance | |
| Nov./Dec. 97 | \$5.00 |
| Est. final payment | \$4.50 |
| Est. total payment | \$214.50 |

Reminders

- Summer weeds should be under control.
- Lupin seed organised and arrangements made for fungicide treatment.

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