1976

1976 Lupinosis

P McR Wood

EXPERIMENTAL SUMMARY - FIELD CROPS AND PASTURE EXPERIMENT - 1976

P. McR. Wood

LUPINOSIS

Fungicide Trials - 1975/76

(P.McR. Wood & J. Allen, A.H.L.)

The fungicide benomyl gave some control of Phomopsis infection in spray trial at Badgingarra Research Station. However, due to climatic conditions, only low-grade toxicity developed. There was an indication that sprayed material was less toxic. However, variation within sheep did not enable statistically significant differences to be demonstrated.

Treatment	Phomopsis infection (Sept - % infected)	Liver damage (Mean of 8 sheep)
Control	30	8.3
One spray 200g/ha	17	2.4
400g/ha	17	2.1
Three sprays 400g/ha	17	3.9

1976.77(in progress)

Control of Phomopsis with benomyl was only marginal when assessed in September.

Treatment	Phomopsis infection (% infected)
Control	47
One spray 200g/ha	35
400g/ha	35
Three sprays 400g/ha	38

Material will be collected for testing on sheep after the first significant summer rains.

Phomopsis rating method

A method was developed for visual rating of Phomopsis on lupin stems. Basically, a 0 - 5 scoring system was used, indicating the percentage of the areas of the stem infected. Thirty one samples of lupin trash collected from different paddocks were received from District offices between January and April 1976.

The history of sheep grazing on 17 of the paddocks was recorded by District Veterinary Officers. The remaining 14 samples were assessed for Phomopsis and given a lupinosis risk rating on this basis.

Of the 17 samples, 11 had a Phomopsis rating of ≥ 1.9 and were associated with clinical lupinosis. Five samples were given a rating of ≤ 1.7 and sheep were not showing signs of disease. One rating of 1.7 was associated with lupinosis but sheep were in poor condition prior to grazing lupins. There was a ten-

dency for higher mortalities to be associated with higher Phomopsis scores.

Resistance of L. albus cw. Ultra

Samples of lupin trash from two cultivars were collected from Chapman Valley, Beverley and Mt. Barker for a comparison of Phomopsis infection and then fed to sheep in pen trials with the following results. Liver damage was assessed by J. Allen, A.H.L.

Location	Cultivar	Phomopsis assessment (Mean of 30 stems)	Liver Damage (Mean of 3 sheep)
Chapman	Unicrop	0.3	2.0
	Ultra	0.2	1.0
Beverley	Unicrop	3.1	36.3
	Ultra	0.2	2.0
Mt. Barker	Marri	3.0	26.0
	Ultra	0.4	3.7

Conclusions

1. When Phompsis infection was low, lupins were non-toxic.

2. When conditions were conducive for toxin formation both Phomopsis infection and toxicity on Ultra was low compared with L. angustifolius cultivars.

Sclerotinia and Phomopsis Infection of Lupins

76MT 39 MBRS

Old Land Site - Adjacent to 1975 infected area.

Cultivar	Yield (kg/ha)	Sclerotinia (% of plants infected)
Ultra	1230	5.5
Marri	1260	8.5
Uniharvest	1380	0.3
Unicrop	1010	0.6

New land site - isolated from previous infection

Cultivar	Yield (kg/ha)	Sclerotinia (% of plants infected)
Ultra	1070	4.4
Marri	1060	0.8
Uniharvest	1330	0.2
Unicrop	1020	0.1

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Cultivar	Yield (kg/ha)	Sclerotinia (% of plants infected)
Ultra	1020	4.9
Marri	1260	0.5
Uniharvest	1130	0.1
Unicrop	1020	0.1

Final results of Phomopsis assessment are not yet available, but there is an indication that Marri is more suceptible than either Unicrop or Uniharvest.

Comments

A feature was the appearance of sclerotinia infection on the primary pods of the cultivar Ultra. In contrast, Sclerotinia infection on the other cultivars was restricted to the stem.

The consistently high rates of infection on Ultra regardless of inoculum pressure suggests the possibility of internal seed infection. The seed used for planting was free of Sclerotinia sclerotia. This aspect requires further investigation. Seed of Ultra harvested from the Mt. Barker trial was heavily contaminated with sclerotia but 99% was removed during cleaning.

At the three sites Marri was more susceptible to Sclerotinia stem rot than other L. angustifolius cvs.

Marri continued to exhibit almost complete resistance to grey leaf spot which was present at moderate levels on the other L. angustifolius cvs.

Severe lodging and Sclerotinia resulted in the depressed yield of Marri compared with Uniharvest at Mt. Barker. The Mt. Barker trial also showed that lodging of Marri is not necessarily associated with high levels of Sclerotinia infection.

Lupin Disease Survey

In view of District Office committments and drought conditions in northern areas, only Narrogin, Esperance and Moora districts were surveyed with several crops near Albany and Mt. Barker. In the Narrogin district Dr. G.D. McLean diagnosed a virus problem (see separate report) which was occurring together with brown spot and grey leaf spot. Yields are not yet available. Esperance crops were virtually disease-free, although a widespread unidentified disorder apparently not of pathogenic origin resulted in severely depressed yields in the Munglinup area.

Low levels of brown spot and grey leaf spot were common in the Moora district, and one crop was severely damaged by brown spot.

Grey leaf spot was the main disease occuring on crops examined in the Albany district. The more severe outbreaks were associ-

ated with near by lupin trash.

Overall, with brown spot, there was an association with either 1975 lupin trash adjoining the crop, or 1974 trash residues in the crop. In contrast, the occurrence of grey leaf spot was not necessarily related to the presence of nearby trash.

(P.M. Wood)
PLANT PATHOLOGIST

INFORMATION ON VIRUS DISEASES OF LUPINS

By G.D. McLEAN

BEAN YELLOW MOSAIC

Field and Laboratory Diagnosis

Bean yellow mosaic virus was chiefly observed in the Wandering, Pingelly and Darkan district. It was the severest disease observed in this area. The overall infection rate was 5% however in some areas of paddocks a 10% infection was observed.

This virus is transmitted by a number of aphid species in a non-persistent manner. In conjunction with the entomology branch aphid trapping was carried out on Turton's property at Wandering and Jackson's at Wannamal. Aphids were present at Wandering from mid-September to mid-October and at Wannamal in early August. Thus aphids are presumably infecting the crops at this time. Lupin crops on Jackson's property have suffered 5 to 10% infections in 1974, 1975 and 1976. In situations like this, border or complete spraying with insecticide may reduce the incidence of virus infection.