

## DISEASE NOTES OR NEW RECORDS

### Anthracnose of lupins in Western Australia

M.W. Sweetingham, W.A. Cowling, B.J. Buirchell, A.G.P. Brown and R.G. Shivas

Division of Plant Industries, Department of Agriculture, South Perth, Western Australia 6151

#### Abstract

In August 1994 a severe anthracnose was found on *Lupinus albus* in plots at four sites in Western Australia. *Colletotrichum gloeosporioides* was isolated from lesions on collapsed stems. At one site the disease had spread to adjacent plots of *L. albus*, *L. angustifolius*, *L. luteus* and *L. mutabilis*. The primary infection was traced to seed lines of *L. albus* imported from Germany. In September 1994 procedures were put into place to eradicate the disease.

In August 1994, plants of European white lupin (*Lupinus albus* L.) with twisted and collapsed stems were found in experimental plots at Mullewa. Close examination revealed lesions with pink spore masses typical of *Colletotrichum gloeosporioides* (Penz.) Penz. & Sacc.

The source of infection was traced to two seed lines imported from Germany. The seed had been sown in plots at Goomalling, Mullewa, Nabawa and South Perth. At South Perth, anthracnose had spread to adjacent plots of narrow-leafed (*L. angustifolius* L.), pearl (*L. mutabilis* Sweet) and yellow lupin (*L. luteus* L.). At Mullewa, the disease had spread up to 30 m from the source plots. In September 1994 the pathogen was eradicated by removing infected plants, followed by applying glyphosate and ploughing-in all plants within 100 m.

*C. gloeosporioides* was consistently isolated from the stem lesions. Pathogenicity of isolates was shown by inoculating 4-week-old seedlings of *L. angustifolius*, *L. albus* and *L. luteus* with a spore suspension ( $1 \times 10^6$  spores/mL) sprayed until run-off. Treated plants were enclosed in plastic bags for 24 h to simulate a dew period and kept in a glasshouse at  $25 \pm 5^\circ\text{C}$ . *C. gloeosporioides* was re-isolated from stem lesions which developed after 10 days on all species.

Anthracnose is the most serious disease of European white lupin in France, Chile and Brazil (Gondran *et al.* 1994). It is also a limiting factor in the production of lupins in North America (Paulitz *et al.* 1995). In New Zealand the fungus has been responsible for the decline of yellow tree lupin (*L. arboreus* Sims) in pine plantations (Dick 1994).

This is the first report of anthracnose in Australia since lupins have been developed to become a major industry worth \$180 million p.a. There are earlier reports of anthracnose on *L. cosentinii* Guss. in Western Australia (Chambers 1961) and on narrow-leafed lupin in northern Queensland (Simmonds 1966). There are also records of *C. gloeosporioides* on ornamental lupin (probably *L. polyphyllus* Lindl.) in gardens and nurseries in Victoria (I.G. Pascoe, personal communication). None of these earlier records are supported by a living culture.

Anthracnose is a serious threat to the lupin industry and warrants quarantine restrictions on *Lupinus* seed entering Australia. Work is currently in progress to characterise world isolates of *C. gloeosporioides* on lupins using vegetative compatibility groups and molecular techniques.

#### References

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