1-1-1982

The south coast lupin dilemma

Bryan J. Gorddard

Follow this and additional works at: https://researchlibrary.agric.wa.gov.au/journal_agriculture4

Recommended Citation
Available at: https://researchlibrary.agric.wa.gov.au/journal_agriculture4/vol23/iss3/17

This article is brought to you for free and open access by Research Library. It has been accepted for inclusion in Journal of the Department of Agriculture, Western Australia, Series 4 by an authorized administrator of Research Library. For more information, please contact jennifer.heathcotei@agric.wa.gov.au, sandra.papenfus@agric.wa.gov.au.
The south coast lupin dilemma

By B. J. Gorddard, Officer in Charge, Albany District Office

There is renewed and widespread interest in the potential for lupins across Western Australia's south coast from Albany to Esperance. This interest is well-founded, as the south coast has several chronic agricultural problems for which lupins offer a possible solution.

These problems include:
- root rots in cereals
- degenerated pastures, with loss of sub-clover resulting in nitrogen deficiencies in crops and poor quality summer feed from pastures
- rust in oats, which has been the traditional fodder reserve in the region

Meanwhile economic pressures favour increased areas of crop, including continuous cropping. Also there is growing interest in the potential for out-of-season finishing of sheep—for which lupins are ideal.

The areas sown to lupins have increased only slowly in the Albany region, where about 3900 ha were sown in 1980-81. Sowings on the

sandplain have declined to only 600 ha in the Esperance region in 1980-81. Yet south coast farmers remain intensely interested and aware of the potential role that lupins could play in their farming programmes. The reasons for this apparent anomaly can be found in the numerous problems encountered with lupins along the south coast. Research has gone some way towards solving a few of these, but several intractable problems remain to deter farmers from wider adoption of lupins in this region.

Problems

Lupin growth and seed yields in south coastal areas have been restricted by:

- **Poor weed control:** Early attempts to grow lupins failed, mostly due to poor weed control, especially of annual ryegrass. Farmers' attempts to control ryegrass by cultivation led to delayed sowings and, sometimes, severe wind erosion. Crops sown after the middle of June were at a severe agronomic disadvantage and invariably yielded poorly. More recently, better herbicides for ryegrass control have helped remove the ryegrass bogey, but problems still exist with some grass, and most broad-leaved weeds in lupins.

- **Insect control:** Insects remain a real obstacle to lupins, with regular outbreaks of cutworm, native budworm, pasture loopers, aphids and weevils in south coastal areas. The incidence of several insect pests, already high in this region, appears to be worse under today's minimum tillage systems.

- **“Split-seed”:** This problem decimated lupin crops on the sandplain in the 1970s, until it was found that control was possible with manganese applications. The extra cost of manganese has deterred many growers, as has the partial failure of manganese to control split-seed on deeper sandy soils in years of scarce spring rains. Split-seed has not been a problem on the white-gum and jarrah forest soils, nor on heavier textured soils, being confined to the sands and gravelly sands of the southern sandplain.

- **Diseases:** Lupins have been decimated regularly by disease in this area. Grey leaf spot has been severe on the sandplain soils, and widespread losses were recorded at Esperance before the release of resistant varieties. Brown leaf spot remains a problem in all areas and, with Sclerotinia, may seriously reduce the potential for lupins in short rotations. Root-rots in lupins are widespread in the region, but their incidence is unpredictable and requires further research.

- **Phomopsis:** The Phomopsis fungus is endemic in the region, and infects nearly all lupin stubbles. Very high levels of infection are common throughout the area, and represent a severe deterrent to the use of lupin stubbles by livestock. In the higher rainfall area, farmers are interested in the possibilities of lupin hay and lupin-cereal mixture to reduce the lupinosis problem. Lupinosis represents the biggest single barrier to the expansion of lupin growing in the high and medium rainfall areas, and is likely to remain so until a solution is developed.

- **Soil types:** Lupins have failed consistently on deep white sands, on "malee" soils to the north of the sandplain, and on any soils subject to winter waterlogging. Yields have been poor relative to wheat and barley in years when the growing season is restricted by late starts and/or dry springs.

The future

Experimental sowings at the Esperance and Mt Barker Research Stations have demonstrated the potential advantages of lupins for the south coast.

Newer varieties such as Illyarrie, Yandee and Chittick have solved some of the maturity and disease resistance problems, while several other problems are known to respond to correct fertiliser application and pest control.

The potential value of lupins as a cleaning crop for cereals, and as a source of high quality feed for most types of stock would ensure the rapid adoption of lupins by south coast farmers IF solutions can be found to the problems outlined above.