

Crop Production

BLUE LUPINS

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BLUE lupins are grown principally on the medium to light soils of Canterbury, particularly in those districts of less than average rainfall, either as a replacement for the turnip crop or to supplement turnips or other winter feed crops. Their high nutritive quality, their relative freedom from disease, and their immunity from the pests that attack turnips have made them an important pioneer crop on much of this land. Over the last 10 or 12 years the improved fertility of the light lands, the increase in the lucerne area and in hay feeding, and the greater use of other green-feed crops such as Italian ryegrass and saved pasture have meant less dependence on the lupin crop. The area has decreased very greatly. It is doubtful if it will regain the place it had 10 or 15 years ago, though more cereal cropping on the light and medium land is likely to cause a small increase.

IN the Ashburton County, and particularly between the Rakaia and Ashburton Rivers, blue lupins have been of the greatest importance. Grown both for feed and for seed they have played a part in the soil improvement that has taken place in that area. They do not demand high fertility, they tolerate acid soils providing they are well drained, and they have a low phosphate requirement. The symbiotic bacteria in their root nodules are able to fix atmospheric nitrogen which is then available for succeeding crops.

Varieties

Several varieties of blue lupin (*Lupinus angustifolius*) and one variety of yellow lupin (*L. luteus*) have been tried from time to time. The common or bitter blue lupin suffers from the disadvantage that it contains an alkaloid giving an extremely bitter taste to the plant. Research has shown that this substance increases from 0.25 per cent to 0.4 per cent during flowering and then falls to about 0.2 per cent as the seed ripens. This alkaloid, beside being unpalatable to sheep which are unaccustomed to it, can cause "staggers" or occasionally death. It makes the plant unsatisfactory as a fattening feed for lambs and various attempts have been made to select lupins with a lower percentage of alkaloid.

"Sweet" varieties of both blue and yellow lupins, of very low alkaloid content, were available a few years ago, but the less robust nature of these varieties prevented their becoming popular. They were also poorer seed producers than the bitter blue variety.



"Sore shin", caused by the pea mosaic virus, is the most serious disease of lupins. A healthy plant is at left and the others show infection at varying stages.

Blue Lupin Growing in New Zealand

Area Grown

Varying, at present about 5,000 acres

Main Growing District

Canterbury, chiefly Ashburton County

Most Suitable Soils

Light to medium well drained soils; not necessarily of high fertility or well limed

Varieties

Borre (sweet) lupin, particularly for lamb fattening.

Bitter blue lupin for winter feeding or green manuring

Fertiliser

Not usually applied except when sown with turnips, rape, or grass, when 1 cwt of superphosphate is applied

Normal Sowing Rates

Seed: 2½ to 3 bushels alone

1 bushel with either:

½ to ¾ bushel of oats or Italian ryegrass or 1 to 1½ lb of rape or 6 to 8 oz of turnips

Normal Sowing Period

February to April for successive winter and spring feeding

September to October for lamb fattening

March, September, or October for seed

Average Yield of Seed

30 bushels

Commercial Bushel Weight

60 lb