

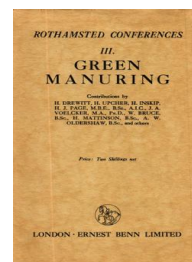
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## Green Manuring

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### The Cultivation of Lupins

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A. W. Oldershaw (1928) *The Cultivation of Lupins* ; Green Manuring, pp 31 - 33 - DOI:  
<https://doi.org/10.23637/ERADOC-1-196>

## THE CULTIVATION OF LUPINS

BY A. W. OLDERSHAW, B.Sc.

IN view of the fact that lupins are one of the best—if not *the* best—crops for green manuring on poor light land, a few notes upon their cultivation may be of interest.

Lupins have been grown and appreciated from very ancient times, and the writings of Pliny, Columella, Palladius, Theophrastus and others contain many references to them.

One Latin author states that “they flee away from lime,” whilst my friend, Mr E. I. Robson, has called my attention to a note from a comparatively late Greek compiler, that “Lupins thrive with neglect and if they see anybody wanting to try to cultivate them they run away.”

If this latter statement is to be taken literally, the object in reading a paper on the cultivation of lupins is not quite obvious.

### *Varieties*

In 1858 Mr Crisp, of Butley Abbey, Suffolk, obtained one sack of blue lupins (*Lupinus augustifolius*), and one of the yellow variety (*Lupinus luteus*). They were obtained from Prussia, and it is on record that he obtained a remarkably good crop.

He found that the yellow variety was best for hay, straw and chaff, and the blue for seed.

Since then it would appear that a fair acreage of blue lupins has been grown regularly on the light land in Suffolk, for seed, for sheep folding and for green manuring.

On my arrival in Suffolk in 1911 I found no trace of yellow lupins. Several years later I obtained a stock of that variety and tried them against the local blue kind, but came to the conclusion that for general purposes the blue variety was better suited for our conditions than the yellow.

Since then seed of the large white lupin (*Lupinus alba*) has been imported from Italy by Mr A. H. Sadd, of the Eastern Counties Farmers' Co-operative Association, and, from the three years' experience of it which we now have, I have no hesitation in saying that it is vastly superior to the blue and yellow varieties for growing a large bulk of crop, and hence for green manuring. It produces a thicker stem, larger and more vigorous leaves, and distinctly taller plants as a whole than either of the other kinds. It is also much less attacked by mildew, which disease in 1926 greatly damaged late-sown blue lupins.

I do not know of anyone who has fed white lupins to sheep, but hares and rabbits like them much better than blue lupins.

One farmer has saved the seed. Drilled in the third week of April 1926, it was ripe early in October. A narrow stack was made, well ventilated by an air passage made with hurdles. The crop is not yet thrashed.

The seed of the large white lupin cost about 26s. per cwt. in 1926, compared with 10s. per cwt. for blue lupins—hence the desirability of attempting to save it in this country.

#### *Sowing the Crop*

The general cultivation of lupins is very similar to that of spring beans. The land is ploughed, cleaned if necessary and drilled not too deep at the rate of  $1\frac{3}{4}$  to  $2\frac{1}{2}$  bushels of seed per acre. The rows may be 8 in. to 1 ft. apart. When grown for seed, lupins are usually sown on a cereal stubble, but when grown for green manuring or sheep folding they may be sown :

- (1) After a spring fallow ;
- (2) After early potatoes ;
- (3) After sheep feed—such as rye, tares, or similar crop ;
- (4) After trifolium—either sheep folded, or made into hay ;
- (5) After a corn crop. This is done on the Continent, and has been tried in Suffolk, but the crop of lupins obtained did not justify the trouble and expense of sowing.

When grown for seed, drilling should be done in April. If sowing is delayed, the crop may not ripen. When grown for green manuring, or for sheep folding, the date of sowing may vary from April to the end of June, or even early July. If sown before April, there is risk of damage from frost. If sown too late in the season there is not time for the crop to make full growth.

The weather conditions favourable for lupins are very little understood—1925 was a very good season, especially for those sown in late June or early July : 1926 was a very bad season.

Apparently a fair but not too heavy a rainfall is required.

#### *Manuring*

There is very little information upon this subject in this country. The average farmer seldom manures his lupins at all, and I am inclined to think he may be right, for in 1926 I manured part of a field with phosphate and potash, and left part unmanured, and there was no very obvious difference in the crop.

Lupins will thrive upon a slightly sour soil, but when a certain high point of acidity is reached the crop is injured, and under such conditions I have seen benefit result from an application of 5 tons per acre of lump chalk.

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As has been previously noted, the ancients held the view that much lime is harmful, and I believe they were right.

From the limited evidence available I think the ideal condition is a slightly acid or a neutral soil.

### *After Cultivation*

Lupins are occasionally horse-hoed, although care must be taken in doing this as the stems are very brittle. Where, as is often the case on lupin land, much sorrel and spurrey is present, it is best to horse-hoe. I know one case in which sorrel spoiled a field of lupins.

When the crop is to be ploughed in green it is unusual even to horse-hoe—weeds and crop being allowed to grow together until ploughing takes place.

### *Ploughing in*

Where the crop is very rank and tall it may be necessary to roll it down before ploughing in. If a chain is attached to the plough to drag the crop in it is wonderful what a quantity of green matter can be buried by a skilled ploughman. I have seen a crop 4 ft. 6 in. high completely buried without rolling.

### *Harvesting the Seed*

The crop may be cut by the binder or by the side-delivery reaper. When cut by the binder, the spiny pods are rather hard on the binder canvasses. The seed is somewhat apt to shell.

The crop is shocked and, when dry, carted, exactly as with spring beans.

## THE DISCUSSION

MR BARWELL FIELD said that mustard was the only green-manuring crop which in his experience had stood the test of practice in Hertfordshire.

With mustard he had often found difficulty in making a suitable seed bed on corn stubbles after harvest, and he considered that when the time could be afforded it was best grown as a mustard fallow.

He was able to agree with Dr Voelcker as to the progressive failure of yields of wheat following the continued use of mustard as a green manure.

MR MACDONALD, speaking with experience of mustard on heavy land near Peterborough, said that he had encountered very great difficulties in getting a seed bed in July. He had found that the use