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Green Manuring

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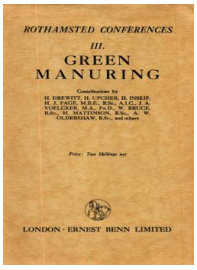

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GREEN MANURING IN SURREY

By J. H. MATTINSON, B.Sc.

There are really two aspects of the case in Surrey—Agricultural and Horticultural. The need for humus in the soil in a county with such a small rainfall is great; this fact is appreciated by both types of cultivators, but the economic factors influencing the different methods of supplying organic matter to the soil are not the same for each type.

With regard to the Horticultural side, Surrey has a very large residential population and a great number of gardens and allotments. Gardeners and allotment-holders have to pay 12s. to 17s. 6d. for a load of manure, and would often have great difficulty in obtaining manure at these prices. They have no facilities for purchasing London dung at easy rates. The necessity for utilizing some other method of supplying the humus has been emphasized, and has to a large extent been met by green manuring. The usual practice is to sow green crops, such as rye or tares, after the second early potatoes, and dig them in in the winter or early spring. The value of the practice has become widely known through the activities of the various gardeners' and allotment-holders' societies, of which there are a great number in Surrey.

That the need of maintaining the supply of humus in the soil is appreciated is evidenced by the fact that in most gardens lawn mowings are applied direct to the soil, while I have known of one or two cases where an application of nitrogenous fertilizer was given in order to enable frequent cuttings of short succulent grass to be taken for this purpose.

Agriculturally the problem is different, because the possibilities of green manuring are to a large extent neutralized by limitations imposed by the methods of farming. An appreciable amount of green manuring is done in Surrey and the practice is extending a little.

Firstly, there is the green manuring on the essentially poor land. In Surrey this is confined almost entirely to the upper slopes of the chalk. Formerly large flocks of sheep were kept and folded on these farms, but latterly dairying and potato-growing have become the chief features of the farming, and sheep are not kept to any great extent. Potatoes and crops for the cows occupy the best and more accessible land, and it is a growing practice to reduce the costs on the poorer and higher ground by periodically taking a fallow.

The fallowing is completed early and is planted with a green crop, which is ploughed in and followed by wheat. Two crops of corn, a seeds ley and a further crop of corn are taken, and the land is again ready for a fallow. Artificial manures are given as considered necessary.

The crop utilized for green manuring in this case is usually mustard; it has time to make growth before frost affects it, it is such

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a reliable cropper on this type of land and it has a reputation for keeping wireworm in check. Vetches are sometimes taken, but are not considered so reliable and the seeding is more expensive.

On the Greensand—the other formation in Surrey where there is a considerable area of poor light arable land—the rainfall is appreciably higher. Green manuring has not made much progress. A practice which serves a similar purpose, however, is extending. This is the laying down to a four- or six-years ley of the poorer and higher ground which is most inaccessible for the dung cart. When the ley shows signs of deterioration it is broken up for several years' arable cultivation.

A further area of land, comprising sandy soils, brick earths and the better arable land overlying the chalk, is situated immediately south and south-west of London, in a district with an average rainfall of 22 to 24 in., and the value of humus is naturally highly appreciated. The practice of green manuring on this land is limited, however, by the following factors :

(1) The green-manuring crop must be a catch crop. It cannot be allowed to take the place of a main crop ;
(2) It must not in any way interfere with the cultivations for and the growing of the next main crop.

In the latter respect catch-cropping for green manuring is ruled out on any land which has become foul and requires cleaning. The catch crop cannot be allowed to grow on too near to the seeding time of the main crop. There is a danger of the growing catch crop drying out the top soil and the buried material, leaving the soil too open, to the detriment of the succeeding crop.

The drying-out effect of a seeds ley on the succeeding wheat or winter oats is well known and is guarded against.

The following are examples of green manuring practised in this area :

After harvest the stubbles are ploughed. Rye is broadcasted at the rate of 1½ to 2 bushels per acre. London dung—a smaller dressing than usual—is spread on the rye about January, and the growing rye and the dung are ploughed under at this time. The ground is ploughed again later and potatoes are taken.

This practice is fairly widely followed on the potato-growing districts on the chalk where the farming is based on a four-course rotation, one crop of which is potatoes, and where large quantities of London dung have been used in the past.

Another practice I have seen is the sowing on the stubbles of trifolium and rye-grass. This crop is ploughed under in May, and swedes are taken. Rye is sometimes taken instead of trifolium.

In some cases the second growth of clovers and rye-grass is ploughed in ; this usually happens on land to which it is expensive to cart dung. Trifolium and rye-grass may sometimes be grown on the stubbles

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mown early for hay, the ground ploughed and planted with greenstuff for the market in November and December.

One or two have tried sowing alsike clover in the corn to give a crop suitable for ploughing under in the winter, but it is seldom that such a growth is obtained as would justify the outlay.

Finally, in Surrey, where milk production has developed so much, more soiling crops are grown than are usually required. If not required for this purpose they are ploughed in, and it is customary to manure the portions cut and leave unmanured the portions on which the crop is ploughed in.

There is in the county a considerable area which owes its fertility to heavy applications of London dung. London dung and manure from the camps and stables at Aldershot are still available in reasonably adequate quantities, and the railway rates on the carriage are relatively low in Surrey. There is not nearly so much used now as formerly, but the keeping of cows has extended to the areas which were once purely market-gardening and potato land, so that considerable amounts of manure are now made on the farms. Sludges also are easily obtainable and are used to advantage on the dry sandy soils.

In summing up the position in Surrey one may say that the value of humus, and the part green manuring plays in supplying it, is well known and appreciated, but that over the greater part of the county the intensiveness of the cropping limits the extension of green manuring.

Cropping for green manuring must be confined to catch crops, and these must not interfere in any way with the growing of the next main crop. On this account green manuring cannot take its place as a definite operation in the rotation, and is practised when and as opportunity allows. There are still available such quantities of London dung, sludges and other waste materials as prevent the problem of applying organic matter to the soil being really acute.

On the poorer and more inaccessible lands the practice is not making the progress one might expect, because of lack of confidence on the part of the farmer as to the prices which will rule from the produce of the main crops. Such lack of confidence prevents him utilizing the knowledge he possesses in regard to green manuring on the improvement of a poor type of land.