

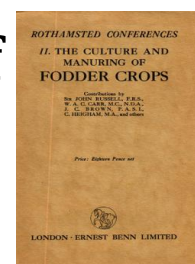
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The Culture and Manuring of Fodder Crops

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Summary of Points

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SUMMARY OF POINTS

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(1) *Crops for Stock Feeding.*—The present trend of English farming favours the development of stock husbandry of various kinds, and the traditional crops of cereals for direct sale are therefore declining in economic importance.

(2) In arranging systems of cropping for the feeding of live stock it is important that the probable yield of dry matter per acre be kept in view.

(3) Crops of swedes, mangolds, marrow-stem kale, various forms of arable hay and mixed fodder crops of pulses and cereals may all yield considerably more dry matter per acre than do the standard cereals.

(4) Home-grown feeding stuffs can be produced at a price per pound of starch equivalent which is well below that paid for purchased materials.

(5) By the use of well-made arable hay, some roots and kale, and meal from the grain of heavy-yielding mixed crops of pulses and cereals, the farm bill for concentrated foods may be greatly reduced without a corresponding fall in output.

(6) The by-products of the sugar-beet in the forms of tops and extracted pulp give many tons per acre of valuable stock food which, if well used, may greatly increase the value of the crop on the farm.

(7) The area under the older crops, such as mangolds and swedes, tends to decrease as kale and ensilage crops gain in popularity and as they are replaced with sugar-beet, which has both a cash and a fallow value. Recently it has been found possible to conduct some types of dairy farming very successfully without heavy rations of roots, but it is not yet clear how far this practice may develop, particularly in those arable districts where the secondary or cleaning function of the root crop is of great importance.

(8) Fodder crops are generally less reliable in yield than are cereals, and complete failures are not uncommon. Such failures may be extremely serious, as the supply of food for the stock of the farm depends upon these crops. Prudence suggests that an ample acreage of the fodder crops be grown in each year as an insurance against a bad season, though in a bountiful one this policy may lead to what appears to be some waste of crop.

(9) *Manuring of Fodder Crops.*—Swedes, turnips and mixture crops may be grown successfully without farmyard manure and with artificials, or with farmyard manure and without artificials. In

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England it is generally not worth while to use both together with these crops.

(10) Mangolds and kale require farmyard manure as well as artificials if the best returns are to be obtained. In the absence of adequate supplies of farmyard manure some encouraging results have been obtained with town refuse and with composts made from waste straw, cavings and other organic rubbish.

(11) *Phosphatic Fertilisers*.—Swedes and turnips generally respond particularly well to dressings of phosphates, and of the phosphatic manures in common use superphosphate is generally the most effective for these crops.

(12) Basic slag has some advantage over superphosphate on land where "finger-and-toe" is known to be prevalent. In using basic slag it is well to remember that the high soluble slags generally produce better results than the low soluble ones, even when the latter are very finely ground.

(13) There is no experimental evidence either at Rothamsted or Woburn to show that superphosphate makes the soil acid.

(14) Mineral phosphates finely ground have given good results in Scotland and the North of England where the seasons are cold and moist.

(15) *Nitrogenous Fertilisers*.—Adequate supplies of nitrogen are required by the succulent fodder crops, and applications of the ordinary nitrogenous manure salts give more consistent results than do other fertilisers. In most seasons an application of 1 cwt. per acre of sulphate of ammonia will give an increase of 1 ton per acre of swedes.

(16) Sulphate of ammonia with the seed and top-dressings of nitrate of soda or nitrate of lime give satisfactory increases with the mangold and kale crops.

(17) There is very little experimental evidence to show the best time for applying top-dressings to root crops, but practical experience suggests that this may be directly after singling.

(18) *Potassic Fertilisers*.—Applications of potash produce particularly good results with mangolds. Thirty per cent. potash salts, kainit and muriate of potash have all been used with good effect, and it is uncertain which of them is the best. The two former contain common salt, which is said to be very effective on root crops in some districts.

(19) Potassic fertilisers should be used in balance with nitrogenous manures. With each hundredweight of sulphate of ammonia or nitrate of soda given to the mangolds 2 cwt. of kainit or 1 cwt. of muriate of potash should be applied. Without this balance the plant is likely to be unhealthy and may lose some of its feeding value.

(20) *Cultivation of Fodder Crops*.—With all the root crops the

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production of a seed bed which is at once fine, firm and moist is of the utmost importance. Free use of the roller both before and after seeding is to be recommended.

(21) There is little good evidence of profitable increases of crop obtained through subsoiling except in cases where a definite and impermeable "pan" has been broken up. The case of the sugar-beet crop deserves special consideration, as both the yield and quality of the roots depend to an unusual degree upon easy penetration of the soil to a considerable depth.

(22) Loss of moisture in the top soil when preparing a seed bed is a common cause for failure of plant in root crops. This may be avoided to some extent by ensuring that all the deeper working is done in the autumn and winter.

(23) Great importance is attached to the time of singling root crops. Sugar-beet and mangolds should be singled as soon as the young plants show four good leaves. With swedes, singling should begin as soon as the development of the "rough leaf" is sufficient to ensure that the full risk of attack by turnip-fly is past.

(24) The hoeing of roots should begin before the weeds appear, when it can be carried through quickly and easily. If this is done the danger arising from the competition of strong growing weed species in the weak and early stages of the crop will disappear.

(25) The growing of roots on the ridge facilitates early hoeing and is said to make easier the desired compacting of the seed bed.

(26) Early seeding has often been found to be one of the main factors of success with swedes, turnips and mangolds. Delays at sowing time, even when they allow extra cultivations to be carried through before drilling, may prevent the establishment of a strong and even plant, and so have a very serious effect upon the ultimate yield of the crop.

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