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Report for 1931

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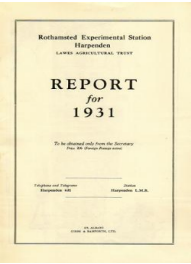
Rothamsted Experimental Station
Harpenden
LAWES AGRICULTURAL TRUST

REPORT
for
1931

Home Grown Food for Animals

Rothamsted Research

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experiments, especially in the South Eastern Counties. It is said to be more effective in acid soils in Scotland and in the North of England, and if this be so it might be attributed as much to the lime as to the phosphate. Precise comparisons are difficult to make, but the lime value of slag approaches that of an equal amount of ground limestone. There may also be an advantage in supplying lime and phosphate together ; at any rate, on some acid soils phosphates rapidly lose their availability as the result of chemical reactions in the soil.

HOME-GROWN FOOD FOR ANIMALS

Several methods are studied for providing *keep for animals* when grain supplies fall short.

Fodder Mixtures. Mixtures of leguminous and cereal crops are grown (e.g. vetches, barley, beans), cut green, converted into hay or silage, or allowed to ripen for use as straw and crushed grain. These crops are cheap and easy to grow ; they keep down weeds, and they have proved of great value as food stuffs because of this elasticity in use ; no other crops can be consumed in such a variety of ways. The manuring of a mixture, however, differs from that of a single crop because the element of competition comes in. The crops grown without manure, or with potash or phosphate only, are rich in protein and starch equivalent ; they make excellent feeds. Nitrogenous manures, such as sulphate of ammonia and nitrate of soda, increase the growth of the cereal considerably, but reduce the vetches and peas ; the total weight of crop per acre is greater, but the feeding value is entirely changed. The new crop contains no more protein, but more starch equivalent per acre ; it resembles hay of moderate quality.

Several different mixtures are being sown at different times of the year to see how far it is possible to arrange for a sequence of these crops suitable for the needs of a flock master, a dairy farmer, or a crop-drying apparatus.

Lucerne. The work on inoculation of lucerne is continuing, and search is being made for new strains of organisms more efficient than the one at present being distributed to farmers. These experiments have revealed great differences in effectiveness between different strains occurring in different soils ; none, so far, is as good as the one we use. But the smallness of the number so far studied gives us grounds for hoping that our search may be rewarded by the discovery of one that is far better.

Nitrogenous manuring proved ineffective in pot experiments to raise the yield of lucerne grown by itself, and it lowered the yield of lucerne grown with grass, besides depressing the formation of nodules, apparently by reducing the root development. The protein content of the mixed herbage was decreased by the nitrogenous manure.

Sales of cultures to farmers have again exceeded all records, amounting to over 9,000 during the season, enough to inoculate over 4,500 acres.