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Laying Down Land to Grass

Rothamsted Research

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devoted entirely to experiment: another experimental rotation of 3 acres has been started in Hoos Field.

The division of the land is therefore as follows:—

		Prior to 1924 acres	Present Time acres
ARABLE.	Classical experiments* ...	42½	42½
	New permanent experiments ...	—	27
	Other experiments and non- experimental ...	182½	60
GRASS		27½	123
	Roads, buildings, small enclosures ...	27½	27½
Total		280	280

* Including 7 acres grass.

LAYING DOWN OF LAND TO GRASS.

With the laying down of land to grass there came an opportunity of watching the behaviour of the plants sown. Several mixtures were used, including perennial and italian rye-grasses, cocksfoot, timothy, rough-stalked meadow-grass and the clovers. Botanical surveys were made after the plants were established and again at the end of the drought. The figures at the end of the first year are given in Table I. The most striking results are:—

- (1) 30 per cent. of the land is still bare in spite of generous seeding and manuring.
- (2) the rye-grasses have increased considerably.
- (3) the clovers, especially wild white clover, have increased considerably.
- (4) cocksfoot, timothy and meadow fescue have become established, but cover decidedly less ground than corresponds with the seed sown.
- (5) meadow foxtail and rough-stalked meadow-grass have failed to become established.

An investigation has been commenced by Messrs. A. R. Clapham and F. J. Richards on competition between various species of grass and clover. Careful growth measurements were taken of some of the common grasses grown singly and in pairs. Species of large growth habit lower the tillering and growth rate of species of smaller growth habit; thus italian rye-grass behaved as an "aggressor" to perennial rye-grass, cocksfoot, timothy and rough-stalked meadow-grass. Although it prevented these others from making their full growth, it did not by itself make its full growth. Indeed, larger weights per plant were obtained when it was grown in admixture with perennial rye-grass and specially with rough-stalked meadow-grass.

THE MANURING OF GRASS LAND.

(1) *Grazing Land.* The difficulties of a grazing experiment were described in the last Report: as no satisfactory way round has yet been discovered we propose keeping this method for demonstration purposes only, restricting its use to cases where the differences are large. In 1929 the effect of phosphatic manure was studied by mowing the grass repeatedly during the season and finding the weight and composition of the cuttings. As in previous experiments, high solubility proved to be of great importance: