

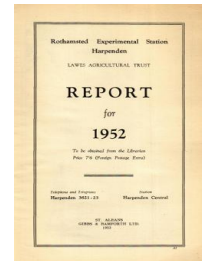
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The Farms : Woburn

J. R. Moffatt

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small number of Scotch Half-bred ewes which will be kept solely to rear sheep for the grazing experiments.

MACHINERY

The purchase of new equipment was confined mainly to replacing worn-out equipment, and by duplicating some items to enable full use to be made of fine spells of weather in busy seasons. A semi-mounted side-delivery rake and a bale sledge were purchased and these considerably expedited the handling of both hay and straw in conjunction with the pick-up baler. The baler was tried out for harvesting crops of hay from experimental plots which, in the past, were weighed loose in the field or carted to the weighbridge. The scheme worked very satisfactorily and will be extended wherever possible. Two dung spreaders were purchased for use with a dung loader, which worked very efficiently in the cattle yards.

BUILDINGS

No major building work was undertaken but some modifications and adaptations were made. The farm cottages were modernized, all now being fitted with modern sanitary conveniences, including baths.

Plans are in hand for the bulk handling of grain; in outline they consist of the erection of 4 bins with a framework of timber and with plywood sides, each bin to hold about 18 tons of grain. It is planned to fill these by using a pneumatic conveyor; and to empty them by fitting a suction attachment to the conveyor and bagging off direct.

ESTATE WORK

A considerable amount of general estate duties were carried out during the year. This included hedging, fencing, and the felling of dead trees for use as timber. The gradual replacement of old fences by concrete post and wire fence was considerably accelerated during the year.

Woburn

The work of Woburn Farm was directed and managed by the staff of the Rothamsted Farm.

The experimental work at Woburn could not be extended owing to the shortage of permanent farm staff, and the non-experimental cropping schedule had to be altered for the same reason. Conditions at Woburn are ideal for the sugar beet but the large labour demands made by this crop necessitated its exclusion, except for small experimental areas. A considerable acreage of potatoes was grown as the casual labour needed for lifting the crop can be obtained from the neighbouring town of Bedford. Plans are now passed for the erection of a pair of farm workers' cottages and building should commence almost immediately. This should overcome the difficulties of permanent staff.

The mechanization of the field operations both on experimental and non-experimental areas is almost completed, though one horse is kept for odd work and light operations on experimental plots. Most of the operations at the farmstead are also mechanized, electricity being used as the source of power where possible. For major operations such as threshing and baling hay and straw, the

Woburn Farm is still dependent on the Rothamsted Farm for machinery and labour, but in all other operations the Woburn Farm is now self-sufficient.

The last of the badly overgrown hedges and neglected ditches received attention during the year, and a big all-round improvement to the farm has resulted. It is now hoped to maintain these in suitable condition. Several of the old dilapidated fences were removed and new fence lines have been fixed which will facilitate the working of the fields.

The main obstacle to efficient farming and reliable experimental work is damage caused by game and other pests. Despite the precautions taken and the use of scarers, severe damage has been done to all crops by rooks, and pigeons, and we are working in close collaboration with the Pest Department of the Bedfordshire Agricultural Executive Committee to effect a reduction of the damage. The perennial problem of damage by pheasants seems almost impossible to resolve, but it is hoped that as a result of representations made to the owner of the estate some diminution of the damage can confidently be expected in future.

Of the 127 acres farmed in 1952, 64 acres were devoted to cereals, 20 acres to potatoes and 28 acres were under grass. The remaining area was under various experimental crops except for a small area under fallow.

For the second successive year, weather conditions in the autumn (1951) were bad and severely affected the farm work. The lifting of potatoes was delayed and the sowing of the winter corn for the 1952 crop was also delayed. The very heavy rainfall in November 1951 made land work impossible but an improvement in December enabled a little more wheat to be sown; unfortunately this late sowing was destroyed by birds and had to be redrilled in spring with Atle wheat. The variety of winter wheat mainly grown was Nord Desprez. Owing to the damp and mild conditions during January and early February, little progress was made with the ploughing of the heavier fields, and this was only completed towards the end of February with the help of equipment from Rothamsted.

Good spring seedbeds were secured during the latter half of February and March, and sowings started early in March. Plumage Archer barley was sown on all experimental areas but was replaced by Herta on much of the non-experimental areas as this is a heavier-yielding variety with a very stiff straw. The barleys all grew fairly well but looked rather patchy and some of the yields were disappointing. Soil analysis showed that some of the fields were rather acid, and a programme of chalking these non-experimental areas was commenced soon after harvest. Most of the barley was satisfactorily disposed of as seed.

The Permanent Barley area in Stackyard field, where nothing but barley has been grown since 1877, has been consistently unable to grow a satisfactory crop of spring barley for many years. The area is severely infested with Spurrey (*Spergula arvensis*) and though the area has been fallowed from time to time, the weed did not seem to germinate well except in the presence of the barley, and herbicides had very little effect upon it. In an attempt to reduce the effect of the severe weed competition in spring, part of each plot was

sown with Pioneer winter barley late in the autumn of 1951, the remainder of each plot being sown in the following spring with Plumage Archer. The winter barley made good growth throughout the season and developed into a nice even crop at harvest time, and there appeared to be less Spurrey than in the spring-sown crop. The spring-sown crop produced its usual poor uneven crop. In view of the practical importance of this result, if it is substantiated another year, the parts of the plots under the two varieties have been reversed for the 1953 crop.

All the non-experimental corn crops received fairly heavy top-dressings of nitrogen in the spring, and all were sprayed with hormone type weedkillers.

The various crops in all the experiments were sown in good time and under excellent conditions during March and April, and made a good start. The non-experimental potatoes were planted by a dropper on a three-row ridger and this work was finished by early May.

Good growth of all crops and grass was maintained throughout May and June, but by July the root crops were showing signs of drought. July was very hot and dry, and the root crops made very little growth, though it was very noticeable that on areas where dung had been applied that the potato haulm was more green and vigorous; the cereal crops began to ripen much earlier than usual.

Grassland was productive throughout the season and an excellent crop of hay was taken early in June. It was baled in the field with a pick-up baler, the bales being left to mature for several days before being carted. A good aftermath was secured by a top-dressing of "Nitrochalk", and this was grazed off by bullocks.

The planting out of the experimental crop of winter cabbage was done in late June and early July, and all plants had to be watered in twice, but even this could not prevent a very slow recovery of the plants and many replacements were needed. The planting of the winter cabbage after early potatoes on the Irrigation Experiment was delayed owing to the dry state of the soil, and eventually the land had to be irrigated to the equivalent of $\frac{3}{4}$ in. rain before planting could start. Severe attacks of mealy aphid developed later in the month and all cabbage crops had to be sprayed with Parathion. These crops therefore had a very bad start and they were later severely damaged by pheasants and pigeons. Hearting up was considerably retarded and it is possible that a high proportion will have to be disposed of as "greens".

In the market garden experiment in Lansome field the drought considerably retarded the growth of the spring cabbage and the crop was not cleared until the end of June. Owing to the dry state of the soil the transplanting of the following leek crop had to be delayed until August. The crop then made reasonable growth until the hard weather set in towards the end of November; there has been practically no growth since. The red beet in another block of this experiment grew reasonably well. The crop was marketed periodically throughout the summer, the last pulling being done towards the end of September. This crop was followed by spring cabbage but pigeons practically destroyed the plants despite the fact that explosive scarers were in use at the time.

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The cereal harvest started much earlier than usual. Cutting commenced on 25th July and some was carted before the end of the month. Despite some interruptions from the weather in August the harvest was completed before the end of the month. The yield of the crops was generally rather below expectations.

The fairly heavy rain during August and September enabled the root crops to restart growth, but this sudden change in growing conditions caused many of the tubers to become mis-shapen. Some Late Blight (*Phytophthora infestans*) also occurred and medium volume spraying with a copper compound was carried out on two occasions to reduce the attack. The haulm was burnt off with sulphuric acid during late September and October. The experimental crops were lifted early in October but the non-experimental crops were left until the autumn-sown cereals were drilled on the experimental areas. Yields were quite satisfactory and the tubers were reasonably free from blight, though quite a few were either mis-shapen or affected with scab. The crop is being disposed of rather earlier than usual.

About 25 acres of winter wheat were drilled during November, despite the wet conditions. The early onset of severe wintry conditions in late November and December made germination slow. This and the absence of natural food for birds resulted in severe damage to the wheat by pheasants, rooks and pigeons and it is probable that the whole area will need resowing in spring. Winter land work was well forward by the end of the year.

The small Large White herd of pigs was maintained and the progeny was carried on to bacon weight. They were fed largely on home-produced grain and unsaleable potatoes, with a protein supplement of earthnut meal. Food for the sows consisted mainly of a purchased high-protein ration, as nuts for the dry sows and as meal for suckling sows.

Most of the difficulties under which the Woburn Farm was labouring when its direction was handed to the staff of the Rothamsted Farm in 1947, have now been surmounted. It only remains to reduce or eliminate damage caused by pests for the Woburn Farm to become an efficient farm on which reliable field experiments can be carried out.