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Report for 1955

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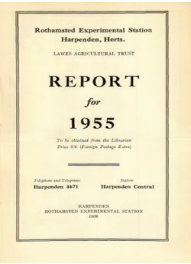
Rothamsted Experimental Station
Harpenden, Herts.

LAWES AGRICULTURAL TRUST

REPORT
for
1955

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ROTHAMSTED EXPERIMENTAL STATION
1956

The Farms : Woburn

J. R. Moffatt

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have been badly neglected, and are in a derelict state. A small part will be retained under fruit for observation by the scientific staff, but a start will be made with the grubbing up of the remaining area early in 1956.

Staff

Stephen Meyler, Deputy Farm Manager, resigned in January 1955 and was succeeded by M. J. Hill.

C. R. L. Scowen transferred from the farm staff to a post at the laboratories in April 1955.

H. P. Currant, a member of the farm staff since 1911, and farm foreman for many years, resigned in April 1955. W. A. H. Burton was appointed farm foreman in July 1955.

Woburn

The work of the Woburn Farm is directed and managed by the staff of the Rothamsted Farm. The field experiments are controlled by the Field Plots Committee, and the day-to-day planning is done by the bailiff at Woburn.

1955 was not a difficult year, but was disappointing in that all crops, except cereals, were adversely affected by the late, cold spring and subsequently by the severe summer drought. Crop yields are therefore well below average, and potato yields especially so.

The Effect of Weather on Crops

The very wet conditions in the early winter of 1954 resulted in all field work being far behind schedule by the beginning of 1955. In January and February only a very limited amount of field work was possible. However, by the end of March the ploughing was completed, and all the spring corn had been drilled by the end of the first week of April. The dry spell in April enabled good progress to be made, and by the end of the month all root crops were sown except for a few acres of potatoes, and other work was up to date.

The cold, wet weather in May delayed the germination of late spring seeds and retarded the growth of cereals and potatoes. The continuation of the wet spell into June made it difficult to keep clean the areas of sugar beet, kale and red beet, as the weeds took root again almost as soon as they were hoed up. The cereal crops improved wonderfully in late May and June, and looked very promising by the end of the month.

The hot, dry weather during July, August and part of September favoured the growth, ripening and harvesting of the cereal crops, but root crops suffered severely from the long-continued drought. This also delayed the transplanting of leeks, and made the ground so hard that the ploughing of stubbles was somewhat delayed.

October was much drier than usual, and the potato and sugar-beet crops were harvested under excellent conditions. During November and December the weather conditions favoured land work, and all ploughing was completed by the middle of December. By the end of the year land work was right up to schedule, a very different state of affairs from the previous year.

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Cropping

Of the 127 acres farmed 17 acres were under wheat, 38 under barley and 21 under potatoes. Smaller areas of sugar beet, kale and lucerne were grown. This cropping scheme was very similar to that of previous years; two small areas of old grassland were ploughed up, one being put to spring wheat and the other being directly reseeded.

Ground chalk was applied to a further 11 acres in 1955 as part of the policy of bringing the pH of the non-experimental land up to a figure of about 6·5.

Field Experiments

The classical wheat plots were fallow during 1955, and will be fallowed again in 1956 in order to reduce the heavy infestation of twitch (*Holcus mollis*). The barley plots were cropped as usual, and the infestation of spurrey was less severe this year, probably as a result of spraying earlier with MCPA. However, parts of these plots are foul with *Agrostis gigantea*, another type of twitch, and the area is to be fallowed in 1956. In order to eliminate the differences between the plots caused by acidity, all plots were given a differential dressing of carbonate of lime to bring the pH status to about 6. The future of these two pieces of land is now under consideration by the Field Plots Committee.

The long-term rotation experiments were continued with only minor modifications. An expansion of the short-term experiments on cereals was made possible, as one of the self-propelled combine-harvesters at Rothamsted was available for the harvesting. Details of these experiments are given in the report of the Field Plots Committee.

General Notes on Crops

Wheat and barley

Only a very small area of winter corn was sown. The spring corn made a slow start because of the cold weather, but subsequently grew away well and looked promising throughout the summer. The two new varieties of spring wheat, Koga II and Peko, looked particularly well, and good yields are anticipated, with Peko probably yielding the better of the two. No lodging occurred this year, but severe damage was done by small birds on one experiment rather early in the season; rooks and pigeons also caused some damage to parts of plots on another experiment. Proctor and Herta were the two main barley varieties grown.

Harvest was completed in good time, and suffered very little interruption from the weather. One of the combine-harvesters from Rothamsted was used for the first time this year, which made harvesting much easier and quicker. Three large cereal experiments were dealt with in this way, also some non-experimental areas. Other corn was cut by binder and stacked in the Dutch barns, where it still awaits threshing. All combined straw was baled and was sold from the field. The early completion of harvest enabled the threshing of the experimental plots to be started earlier than usual, and the work was completed before the end of September.

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Most of the cereal crops were sprayed with hormone weed-killers, some at a rather earlier stage of growth than recommended. The results were very satisfactory, a very high kill of weeds being obtained.

Potatoes

Both experimental and non-experimental crops were very disappointing, the only exception being the irrigation experiment. Here the crop looked vigorous throughout the season, even on the non-irrigated plots, and this is reflected in a yield of about 11 tons/acre on the control plots, increasing to over 20 tons/acre with full irrigation. On the six-course rotation experiment the crop looked starved, and some plots on the ley–arable experiment were seriously affected by potato-root eelworm. The non-experimental crop of King Edwards lacked vigour throughout the season, despite a useful dressing of dung and fertilizers. One precautionary spraying against late blight (*Phytophthora infestans*) was done, but the dry weather prevented the occurrence of the disease. There was a fair amount of cutworm damage to the King Edwards, while common scab was prevalent on the Majestics. The total yield of King Edwards was low, and the tubers were very small in size.

Kale and sugar beet

The very small acreage of kale grown on a rich piece of soil after fallow grew well despite the drought.

The germination of the sugar beet was very slow and uneven, and the plants were not fit for singling until mid-June. There was a severe attack by the mangold fly (*Pegomyia betae*) when the plants were in a very young stage, and this caused a severe setback. This pest was effectively controlled by spraying with parathion. The crop suffered from drought in the dry summer months, and severe wilting took place during the hot spells. Yields were below normal on most areas, and the roots were small and of poor shape. The sugar content was disappointingly low.

Market-garden crops

The cutting of spring cabbage started about 2 weeks later than usual, but yields were about average and quality was good. The red beet germinated unevenly, and weeds were only kept down with difficulty. Yields here were a little lower than usual. The leeks harvested early in 1955 made disappointing growth, and yields were much below average. Quite a number of plants went to seed during the winter. The planting out of the leeks for harvesting in 1956 was delayed until early August by the hard and dry state of the ground, and the plants had to be hand-watered twice to give them a start. The spring cabbage was planted out in September, but despite a dressing of aldrin, some cutworm and leather-jacket damage occurred.

Grassland

The cold weather in the late spring and the drought during the summer prevented rapid growth, and at no time did the grass give any indication of getting out of hand. In fact, keep was only just

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sufficient, and the position was eased by having available late in the summer an area of grassland reseeded direct in the spring.

The hay crop was cut early in June, and unfortunately a spell of rather unsettled weather followed. The hay was therefore rather spoilt, but it was eventually baled and carted in reasonable condition. The yield was rather light owing to the slow spring growth.

Livestock

Cattle

The policy of buying in young store cattle and fattening them off the grass after overwintering in yards was continued. By the end of 1954 most of the cattle had been sold and a smaller number than usual were overwintered. A small bunch of Irish cattle were purchased in the spring, but there was insufficient keep to fatten them by the autumn. They were therefore brought into the yards to finish off.

Pigs

The Large White pig herd was maintained, and most of the progeny was run on to bacon weights. Home-produced food was used as far as possible. The results were disappointing, in that litter sizes and weights were rather low and final grading results were lower than in the last few years. In an attempt to remedy these matters the very unsatisfactory housing will be improved in 1956.

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