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Report for 1949

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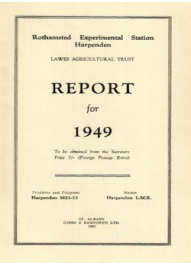
Rothamsted Experimental Station
Harpenden

LAWES AGRICULTURAL TRUST

REPORT
for
1949

The Farms : Woburn

J. R. Moffatt

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for farm workers, but the weather played its part in that the growth of weeds was retarded and those that grew were easily destroyed in one operation. The amount of seasonal labour required during the year was therefore reduced to a minimum. The only occasions such labour was needed were for potato lifting and for sorting the last of the large 1948 crop of potatoes. The last sales were made by the Ministry of Food during late May and early June, by which time the regular staff were engaged in root singling. Fortunately the potatoes stored extremely well in the large heaps, and there was very little wastage even as late as June, 1949.

Machinery

Several additions to the list of implements were made during the year. A new tractor complete with many of its own range of specialized implements was purchased, and it is hoped that this will in future undertake many of the jobs on small plots previously undertaken by horses. A small single-wheeled motor hoe has been bought to facilitate the hoeing of small experimental areas where headlands are reduced to a minimum, and a new rotary hoe will keep clean the paths between the plots.

Buildings

Towards the end of 1949, a start was made with the erection of a new farm workshop and implement shed, to house the gradually increasing number of farm implements, many of which are at present housed in buildings designed and needed for other purposes. The building will be completed early in 1950.

Local Show Successes

Two horsemen and two tractor drivers took part in the local ploughing match, and between them won 2 first prizes, 3 second prizes, and a 3rd prize.

Conclusions

The execution of the year's work has been generally less difficult than usual. There was sufficient permanent staff to deal with most operations, which were therefore done on time, while dry weather extra equipment, and the use of herbicides enabled weeds to be kept under control. The weather also greatly facilitated the harvesting of the cereal crops, and enabled work to be kept up to schedule throughout the season. The results of the year's work, due to circumstances beyond our control, have been somewhat disappointing, for although the yields of cereals were satisfactory, those of all root crops, beans and linseed were low.

Woburn

The re-organization of the Woburn Farm, which commenced in 1947, when the management was merged with that of the Rothamsted Farm, was continued with satisfactory results. The main objectives of the year's work were to arrange the cropping so as to clean up, without resorting to bare fallowing, those fields not tackled in the previous two years, and to mechanize field operations where possible to enable the existing staff to tackle the increased arable acreage, and the anticipated higher crop yields, with the minimum expenditure on seasonal labour or outside contractors.

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Cropping

The cleaning of several fields was tackled by intensive cultivation in preparation for, and during the growth of, a much increased area of potatoes, with a smaller area under sugar beet. The total area farmed was 127 acres, of which 52 acres were under cereal crops, 13 acres under various experimental crops or fallow, and the remaining 38 acres of arable land under potatoes or sugar beet; 24 acres were under grass. The area under experimental field crops was increased by the cropping, after a 2-year fallow, of the Permanent Wheat plots in Stackyard Field, although the actual number of plots was reduced to 422.

Mechanization

The partial mechanization of many of the operations proved very successful in that the work was completed within a short period and less seasonal labour was required. The most important of these operations was potato planting, which was carried out by 3 workers using a simple 2-row potato dropping attachment fitted to the toolbar of a tractor using a hydraulic lift. A second tractor was purchased during the year with a range of its own specialized equipment, and this not only undertook many of the operations previously performed by horses, but enabled both the experimental and non-experimental work to be kept up to schedule. Other smaller self-propelled machines have greatly facilitated the working of the experimental plots, while the replacing of out-of-date equipment by modern machinery has aided the execution of land work throughout the year.

The amount of seasonal labour required during the year showed a satisfactory decrease of approximately 30 per cent. over 1948, and it is hoped that in the years immediately ahead, seasonal labour will only be required for root singling, potato picking and threshing, and that for the latter will be provided from the Rothamsted staff during the winter months. Eventually it is hoped to mechanize both these operations.

Buildings

It was not possible to erect the new implement sheds, tractor garages, and covered barns which it was hoped would be erected during the year, but it is confidently expected that these buildings will be erected in 1950. The electrical circuits have been considerably extended, however, to provide adequate lighting and power points about the buildings, and it is hoped that the extended use of electricity now possible will reduce the amount of labour required around the farmstead.

Crops and Cultivations

The autumn corn was drilled during the first half of November, 1948, and although the soil conditions were far from ideal, about 30 acres of wheat and rye were sown. The winter remained favourable to farm work, the rainfall during the first three months of 1949 being well below normal, while there were few frosts, none of them very severe or prolonged. The mild weather encouraged the early germination of weed seedlings, which were destroyed by ploughing in, and on many areas three ploughings were given. Spring sowing operations began about mid-March and all crops were sown in good

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time under favourable conditions. Early growth of all crops was slow, however, because of the dry weather and low night temperatures which occurred in the first half of May.

Fleabeetle damage, so prevalent in 1948, was almost negligible this year, except for an early attack on a small area of rape, which had to be resown, but periodic dusting with D.D.T. on susceptible crops was carried out as a precautionary measure.

The dry spring developed into a severe summer drought. In the four months June to September, 1949, the rainfall totalled only just over 4 in. compared with the average of 8·8 in., while the hours of sunshine and mean temperatures were well above normal. The effect of the drought was most severe on those experiments where the ground had to be prepared for the transplanting of cabbages and leeks. The cultivations were considerably delayed by the dry state of the soil, the plants had to be watered in on several occasions, and much patching was required to ensure a full plant. A severe aphis attack in late summer caused a further set-back to the cabbages.

The grass and clover seeds sown under the corn crops withstood the drought far better than in 1947, and all survived with a satisfactory plant. The grasses and clovers undersown in 1948 as experimental green manure crops made such rapid growth in the spring of 1949 that by the time the spring-sown rape and lupins were ready to be ploughed in the former crops were so heavy that they had to be cut and weighed off.

The dry spring and summer retarded the growth of pasture grass, and the spring flush did not last long. Subsequent growth was very slow, and the pastures were very bare for about 3 months, despite top-dressings of nitrogen. The fattening cattle were ready for sale during July and August, leaving only store beasts on the bare pastures. Hay yields were quite satisfactory for the dry season, and the crop was carted in good condition.

The weed problem was far less serious than in the past few years. The mild winter encouraged the early germination of many weeds, which were then destroyed, while the crops were sown under satisfactory conditions and were able to compete strongly with the later-germinating weeds. The dry weather prevented the weeds from growing very fast, and so enabled the motor and horse hoes to keep them under control. Herbicides were also used on cereal and pea crops. The fields have therefore presented a cleaner and tidier appearance than for several years past.

Corn looked very promising throughout the season, although some of the barley became lodged fairly early and other patches lodged after thunderstorms early in July. Wheat and oats stood well despite fairly heavy top-dressings of nitrogenous fertilizers. Harvesting operations started rather earlier than usual, and were continued almost without a hitch until they were finished almost exactly a month later. Much of the corn was not shocked, but was carted straight from the binder rows. The threshing of outside stacks of wheat and rye was done soon after harvest, and although the yields were rather lower than their appearance when growing suggested, the quality was excellent, and much of the rye was sold for seed. The barley, which was threshed later, was rather disappointing in both yield and quality.

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The potatoes made reasonable growth in the early part of the season but growth was slow during August and September and the crop began to die off much earlier than usual. Because of the dry weather there was no incidence of Late Blight, and no spraying against this disease was therefore required. The harvesting of the experimental plots was completed in September, and yields were far higher than was anticipated, although the tubers were rather smaller than usual, with many affected by scab. The lifting of the large non-experimental area was completed in October, the haulm having been burnt off with acid to facilitate lifting operations. The yields here were much lower than average, and the tubers smaller, and there was also some damage by cutworms. The crop has been stored in an enclosed building at the farmstead to a depth of 10 ft. and will be sorted during the winter. The lifting operations were interrupted by the sudden break in the weather which took place at the end of the first week in October. During that month the rainfall was over 5 inches, almost twice the average.

Sugar beet proved the most disappointing crop of the season, despite the abundance of sunshine. The crop was affected very early with Sugar Beet Yellows virus, which spread throughout the whole crop. This disease, and the severe drought, resulted in low yields and a very disappointing sugar content. Harvesting was completed by the regular farm staff by the middle of December.

The rainfall during November, 1949, was slightly higher than average, but December only had half the average, and ploughing was carried out without much interference. 33 acres were sown with wheat and rye for the 1950 harvest, and early damage by game to these crops has been less than for several years past.

Livestock

Cattle

A small bunch of young cattle were over-wintered outside, mainly on sugar beet tops and oat or barley straw, and the mild weather enabled them to maintain their condition. A smaller number of stronger cattle were yarded during the winter to make F.Y.M. for experimental plots and were later sold fat off the grass.

Pigs

The small Large White pig herd has been maintained, most of the progeny being retained and carried on to bacon weight.