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Rothamsted Report for 1938

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Insect Pests at Rothamsted and Woburn , 1938

Rothamsted Research

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taken to Rothamsted and the ratio of grain to total produce is determined by small scale threshing as before, and the grain yield is then calculated.

Several difficulties still remain. Small scale harvesting necessitates a certain amount of walking about in the standing crop especially when sampling from the standing crop by the method first described, and this naturally does not commend it to farmers. The second method requires expert scythesmen who are not always available. Cereal harvest also is a time of greater stress than root harvest and extra hands for experimental work are not easy to obtain. It is further necessary to induce farmers who have already carried out an experiment in roots to continue the existing plots in the following cereal crop. This is not always easy because the main effect of the manures has been shown in the roots with comparatively little effort, while the problematical and certainly subsidiary residual effects in corn involve additional trouble. Bad weather moreover tends to keep the field staff stationed away from home for longer periods when engaged on cereal experiments than on roots. Field weighing of roots can be done under weather conditions that would stop corn harvest for several days.

None the less the successful carrying out of cereal experiments is an essential development at outside centres, for only in this way will the full study of fertiliser effects be possible. Many of the sugar beet experiments and almost all tests of organic manures and liming materials involve the harvesting of cereal crops for their complete examination.

INSECT PESTS AT ROTHAMSTED AND WOBURN, 1938

A. C. EVANS

GENERAL

Little trouble has been experienced from insect pests this year. No further occurrence of the Wheat Mud-beetle has been recorded.

WHEAT

Wheat Blossom Midges (*Sitodiplosis mosellana* Géhin and *Contarinia tritici* Kirby) have decreased considerably in number.

Number of Larvae per 500 ears

	1937	1938
<i>C. tritici</i> ..	2,558	378
<i>C. mosellana</i> ..	3,409	765

KALE

On Fosters, Flea Beetles (*Phyllotreta* spp.) severely damaged the seedlings which survived a dry period in early summer.

SUGAR BEET AND MANGOLDS

The Black Bean Aphis (*Aphis fabae* Scop.) was rather plentiful on the mangolds and sugar beet on Barnfield and the Long Hoos experiments in early July but the plants grew away successfully and no obvious damage was done.

BEANS

The spring Beans on Great Harpenden were ruined by the Black Bean Aphis. The winter Beans on the same field were badly attacked in places. Spraying was not practicable owing to the density of the plant.

WOBURN

No serious pests were noted. Aphids (various species) were common on several crops but no obvious damage was done.

FUNGUS DISEASES AT ROTHAMSTED AND WOBURN, 1938

MARY D. GLYNNE

GENERAL

The dry season of 1938 produced differences in the incidence of several diseases compared with the wet season of 1937. Thus Eyespot Lodging of wheat caused by *Cercospora herpotrichoides* Fron. was much less severe than previously and Brown Foot Rot of wheat caused by *Fusarium* sp. was more frequent than usual.

WHEAT

Eyespot Lodging (*Cercospora herpotrichoides* Fron.) produced no general lodging of wheat on Broadbalk in 1938 when the average percentage culms infected at harvest in the whole field was estimated as about 40 per cent. In 1937 lodging had been very severe with over 80 per cent. of the culms infected at harvest. In general, observations have indicated that serious lodging is caused by the disease only when about 80 per cent. or more of the culms are infected. Individually lodged culms could be seen lying criss-crossed in the otherwise apparently upright crop on Broadbalk in 1938 and these showed a high percentage infection while upright culms showed a low percentage. The disease was found in 1938 on Hoosfield on the Alternate Wheat and Fallow Experiment to a less extent than on Broadbalk. It also occurred, but on relatively few culms, on some of the wheat grown in rotation at Rothamsted.

"Eyespot Lodging" was approved in December, 1938 by the Plant Pathology Committee of the British Mycological Society as the common name of the disease caused by *Cercospora herpotrichoides* Fron.

White Straw Disease (*Gibellina cerealis* Pass.) was first found in 1935 on Hoosfield on the Alternate Wheat and Fallow experiment and to a very small extent on the adjacent plot of the Soil Exhaustion experiment. As the only other records of this disease show that it has occurred in Italy, Hungary and as a rarity in central France it has rather a special interest. It re-appeared in the Alternate Wheat and Fallow experiment in 1937 when the B series of plots cropped in 1935 again bore wheat, but none could be found in 1936 on the A series of plots. It was a little surprising therefore that in 1938 when the A plots were next cropped more diseased plants were found than in 1935 or 1937. The disease caused severe damage to the plants attacked but these formed only a small proportion estimated in 1938 as 1 to 5 per cent. of the total number.