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Rothamsted Report for 1936

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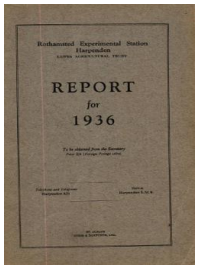

Insect Pests at Rothamsted and Woburn, 1936

Rothamsted Research

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INSECT PESTS AT ROTHAMSTED AND WOBURN, 1936

A. C. Evans

General

This year was notable for an infestation of the wheat plots on the Long Period Cultivation Experiment by the Wheat Mud-beetle which attacked the young plants so severely that resowing with spring wheat was necessary. Wheat Bulb-fly attacked the wheat after fallow on Broadbalk and Hoos field. Pigmy Mangold-beetle was not seen at all on the farm, a contrast to last year when so much damage was done on Barnfield.

Wheat

During February the wheat plots of the Long Period Cultivation Experiment were found to be very severely damaged all over by *Helophorus nubilus* F., the Wheat Mud-beetle. This insect is a comparatively new pest owing to a change in food plant in recent years and appears to be of increasing importance. It was considered advisable to resow the plots with spring wheat; this germinated well and was not attacked. Soil samples from the wheat and barley plots were examined at the end of September and no signs of the beetle was found. No attack was noted on the plots up to December. A general survey of the farm was conducted and one small infested patch was found on Great Knott and a few very small scattered patches in Winter Oats Variety Trial and Three Course Rotation Experiment. The remaining cereal areas were found to be free. The steady increase of the Wheat Blossom Midges (*Sitodiplosis mosellana* Géhin and *Contarinia tritici* Kirby) shown for the last three years was severely checked this year.

Number of Larvae per 500 *ears*

	1935	1936
C. tritici	4,289	708
S. mosellana	4,221	2,869

The relative parasitism this year was low, 12-13 per cent for both species and so a further increase was expected. Dr. Barnes attributes the fall to climatic factors occurring just before the peak of emergence; a day of violent thunderstorms followed by three to five hot days caked the clay-flint soil of Broadbalk and this caking brought about a high mortality.

A bad attack of Wheat Bulb-fly began to develop in March on that section of Broadbalk fallowed the previous year and by the end of

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April the plant was in an exceedingly poor state. A survey was carried out in May and it was concluded that the dunged plots 2A and B were in quite good condition being nearly as good as their unfallowed neighbours, plots 9 and 18 were rather more badly attacked while plots 5-8, 11-17 and 19 were very poor, plots 3 and 10 were in an exceedingly bad condition ; in some plots the individual plants appeared quite healthy but numerous bare patches existed. In the middle of June a further survey was made and the plots compared with their unfallowed neighbours. By this time the plant on the dunged plots was taller than on their neighbours and the relative appearance of the three sections was roughly of the same order as the resultant yields. The resultant yields were definitely depressed as a result of this infestation, some plots giving about one half to two-thirds of the mean of the four previous " after fallow" yields, others about one-third, while plot 10 gave only one-fifth (see p. 50). Wheat Bulb-fly also attacked the wheat on Alternate Wheat and Fallow.

KALE

Flea beetles (*Phyllotreta* spp.) completely wiped out the young plant on Fosters since the plants were unable to grow away from a moderate infestation during a prolonged spell of dry weather. The plant on Long Hoos was also badly attacked but eventually grew away successfully. The seed sown on Agdell was treated with a mixture devised by Dr. Walton of the Long Ashton Research Station to reduce attack by flea beetles during and immediately after germination. Germination was more successful here than elsewhere but a fairly severe attack developed later especially in an area adjacent to Harwood's Piece which contained much charlock. The field was dusted with light derris powder and the plant saved. Cabbage aphis (*Brevicoryne brassicae* L.) seemed scarcer than last year.

SUGAR BEET

Some gappiness on Six Course Rotation due to wireworm was found.

BEANS

Damage to the flowers by Bumble Bees was much less than last year. A severe infestation by Black Bean Aphid (*Aphis rumicis* L.) seemed likely in June but the heavy rains in July almost completely destroyed all colonies.

MANGOLDS

All seed was dressed before sowing with a mixture of phenol and magnesium sulphate. A detailed examination of Barnfield was made but no Pigmy Mangold Beetle (*Atomaria linearis* Steph.) was found. Some wireworm damage was noted on Long Period Cultivation.

WOBURN

The farm at Woburn was visited on June 4th. Some damage of Kale by flea-beetles had occurred on Lansome but this was corrected by transplanting. No Wheat Bulb-fly attack materialised on Stackyard after two years fallow.