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Insect Pests at Rothamsted and Woburn, 1937

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INSECT PESTS AT ROTHAMSTED AND WOBURN, 1937

A. C. EVANS

GENERAL

Little trouble has been experienced from insect pests this year. The severe attacks last year on wheat by Wheat Bulb-fly and Wheat Mud-beetle were not repeated.

WHEAT

The Wheat Blossom Midges (*Sitodiplosis mosellana* Géhin and *Contarinia tritici* Kirby) are increasing in number after last year's check.

	Number of Larvae per 500 ears	
	1936	1937
<i>C. tritici</i>	708	2,556
<i>S. mosellana</i>	2,869	3,409

Mr. A. G. Robertson has carried out a partial survey of the density of infection by the Eelworm (*Heterodera schachtii*) on Broadbalk. This survey is discussed below.

KALE

Flea beetles (*Phyllotreta* spp.) severely damaged the seedlings on Fosters as these were unable to grow away from the attack during the prevailing dry period. The crop in Little Hoos field was not damaged noticeably; seed was sown in June and so germinated when the adult beetles were decreasing in numbers.

BEANS

A severe attack by the Black Bean Aphis (*Aphis rumicis* L.) caused no obvious damage to this crop, the mean yield of the experimental plots being much higher than those of the preceding three years.

WOBURN

No serious pests were noticed. The damage to kale by flea-beetles was less than usual. The carrots were not affected by carrot fly (*Psila rosae* F.) although bad attacks have been reported in the neighbourhood.

EELWORM SURVEY

A partial survey of the density of infection on Broadbalk was carried out by Mr. A. G. Robertson in August. The population of eelworm cysts is not dense enough to cause damage in 1938 but since eelworm can multiply rapidly, attention must, in future, be paid to certain plots in the centre of the field. The eelworms are considered by Mr. W. R. S. Ladell to belong to the oat-strain. From a number of plots, 8 samples, each of 100 grms. of soil (gravel excluded), were examined. The results are given below.

No. of cysts per 800 grms. of soil in fallow Section II																		
Plot No.	2	3	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
Cysts.	8	3	1	4	8	13	7	9	33	19	18	5	3	12	7	8	13	

At present plot 11 has much the highest population, plots 12 and 13 being next in order of density; the plots on either side of these have an irregular but lower density. Samples were also taken from each of the fallow sections of plots 5, 11, 13 and 19. The results are given below, expressed as number of cysts per 800 grms. of soils.

Plot	5	11	13	19
Fallow Section				
I	0	18	16	2
II	1	33	18	13
III	0	28	16	4
IV	2	42	14	2
V	0	18	0	0

Considerable variation in cyst number is shown along the length of the field but the central plots 11 and 13 are consistently higher than the outer plots 5 and 19. There is no correlation between the density of infection and the yield either of grain or straw.

FUNGUS AND OTHER DISEASES AT ROTHAMSTED AND WOBURN, 1937

MARY D. GLYNNE

WHEAT

Cercospora herpotrichoides Fron. first recorded in this country at Rothamsted in 1935, caused lodging at Rothamsted and in a number of other localities in 1937. On parts of Broadbalk and on Pastures field where the wheat was very badly laid the disease was found in 80 to 95 per cent. of the culms. It was most abundant and lodging most severe in plots which had received nitrogenous manures and in the most recently fallowed sections of the plots; mineral manures appeared to have comparatively little effect. Wheat grown under different rotational and cultural conditions on other fields at Rothamsted showed much variation in disease incidence; Pennells Piece, adjacent to Broadbalk, was almost free from *Cercospora* and had a very upright and good crop. These differences suggest possibilities for control, which are under investigation. The disease was slight on wheat grown on lighter soil at Woburn. The fungus was found springing on stubble in the autumn on Broadbalk and Pastures fields.

White Straw Disease *Gibellina cerealis* Pass. seems likely to be of more academic than practical interest. It has been recorded in Italy since 1886 but does not seem to have been noted elsewhere till it was found at Rothamsted in 1935 on the alternate wheat and fallow experiment on Hoos field. It could not be found in the following year when the adjacent plot was under wheat. In 1937, a few diseased plants were found in about the same part of the same plot as it had occurred in 1935. We have no evidence regarding the source of infection. The disease causes considerable damage to individual plants but has hitherto spread so little that it is not at present regarded as of appreciable practical importance.

Wojnowicia graminis (McAlp.) Sacc. and D. Sacc., regarded abroad as a weak secondary parasite, was found in the autumn fruiting on stubble on Broadbalk. There have been two previous field records of it in this country, in Hants.

Mildew (*Erysiphe graminis* DC.), was slight at Rothamsted.

Ergot (*Claviceps purpurea* (Fr.) Tul.): one or two specimens were found on Broadbalk and Pastures fields respectively.

Take-all (*Ophiobolus graminis* Sacc.) was slight to moderate on winter wheat at Rothamsted and Woburn, being distinctly more