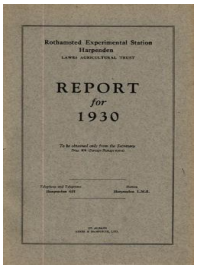
ROTHAMSTED RESEARCH

Report for 1930

Full Table of Content



Observations on Insects Attacking Farm Crops

Rothamsted Research

Rothamsted Research (1931) *Observations on Insects Attacking Farm Crops ;* Report For 1930, pp 63 - 65 **- DOI: https://doi.org/10.23637/ERADOC-1-63**

and in the other fewer plants were affected, but scattered plants were killed.

NET BLOTCH. [(*Pyrenophora teres* (*Died*) *Drechsler*. (*Helminthosporium teres*. *Sacc.*)] was present in varying amount on the barley fields at Rothamsted and Woburn.

LEAF BLOTCH. (*Rhynchosporium secalis* (*Oud*) *Davis*) varied very much in intensity from field to field. At Rothamsted on Long Hoos Rotation II, none was found, but on the Commercial Barley in the same field it was very common. On Hoos Permanent Barley it was very common, and on the Rotation Barley uncommon. At Woburn none was found on the Permanent Barley in Stackyard, but in Butt Furlong field it appeared to be present on nearly every plant.

YELLOW RUST. (*Puccinia glumarum*, (*Schm.*) *Erikss. and Henn*) varied in intensity from field to field, and was on the whole fairly common.

MILDEW. (*Erysiphe graminis*, *DC.*) was observed at Rothamsted, but was more common at Woburn, especially on the Rotation Barley in Stackyard.

RYE—ROTATION II

LEAF BLOTCH. (*Rhynchosporium secalis* (*Oud*) *Davis*) was very common on every plot.

BROWN RUST. (*Puccinia secalina*, *Grove*) was present but slight on every plot.

GRASS PLOTS

CHOKE. (*Epichloe typhina*) (*Fr.*) *Tul.* was very prevalent. It was found generally on Agrostis, but was also found on two plants only of Dactylis glomerata. The fungus was much more abundant on the unlimed than on the limed half of the plots, but this may be connected with the more frequent occurrence of Agrostis on the unlimed parts. The distribution of Epichloe, however, is not entirely dependent on the presence of Agrostis because on Plot 2 (unmanured after dung for the first eight years) Agrostis was plentiful and no Epichloe was found.

The fungus was most abundant on Plot 10 where potash is deficient, and on Plot 1, which receives ammonium salts alone.

OBSERVATIONS ON INSECTS ATTACKING THE FARM CROPS

MAY—SEPTEMBER, 1930

By H. C. F. NEWTON

WHEAT

THE WHEAT BULB FLY (*Hylemyia coarctata*, Fall*). Present on all plots on Broadbalk—worse after fallow, but damage estimated as small. Generally present on Fosters, Great Knott, Hoos Field alternate wheat and spring wheat plots, Long Hoos, variety trials, and at Woburn on Stackyard.

* (Note. Field inspections began after attack had been in progress 2 or 3 months.)

https://doi.org/10.23637/ERADOC-1-63

THE WHEAT MIDGES (*Sitodiplosis mosellana*, Géhin. *Contarinia tritici*, Kirby). Present on all plots on Broadbalk (attack estimated to be the worst in the last four years) and on all other wheat. Attack judged less on Hoos Field spring wheat, but heavy on Lansome at Woburn.

THE WHEAT LEAF MINER (*Agromyza* sp.). Attack rather severe on Broadbalk, especially at edges of plots and on Hoos Field alternate wheat; attack smaller on Great Knott, Fosters and Hoos Field spring wheat and Long Hoos variety trials; more severe at Woburn, on Lansome and Stackyard.

THE WHEAT STEM SAW-FLY (*Cephus pigmeus*, Linn). Generally present but damage insignificent.

BARLEY

THE GOUT FLY (*Chlorops taeniopus*, Meig). Attack very marked on all phosphate deficient plots on Hoosfield, but present on all plots. On the no nitrogen and no phosphate and unmanured plots, practically every plant was attacked, and in many cases to the extent of six or seven tillers. On the other plots attack was of the usual summer type present, but damage small. Attack general on Long Hoos barley plots, but not serious; rather severe at Woburn (examined July 2nd) on Stackyard field.

THE SADDLE MIDGE (*Haplodiplosis equestris*, Wagn). Slight attack noticed on Long Hoos and Stackyard (Woburn)—damage insignificant.

WIREWORMS (*Agriotes* spp.). During latter half of May slight attack on Long Hoos barley plots.

OATS

THE FRIT FLY (*Oscinella* (*Oscinis*) *frit*, Linn). General attack on Long Hoos variety trials; on entomology oat plots sown Feb. 29th., 22 per cent shoot attack; sown Mar. 30th., 37 per cent shoot attack; sown Apr. 29th., 30 per cent shoot attack.

WIREWORM. Patches rather badly attacked on two northern plots, Long Hoos, early in season (21.5 per cent).

THRIPS. Slight attack.

FORAGE MIXTURES

WHEAT BULB FLY. Slight but general attack on rye on pastures—damage small.

PEA AND BEAN WEEVIL (*Sitona lineata*, Linn, etc.). Small attack on pastures, rather severe in Great Harpenden where it was noticed that the nitrogen plots outgrew damage the best.

FRIT FLY. General attack on Great Harpenden—not severe.

MANGOLDS

THE PIGMY MANGOLD BEETLE (*Atomaria linearis*, Steph.). This beetle was generally present on Barnfield, and to some extent responsible for the gappy plant. It was less frequently found on the dunged plots. The Black Spring-tail (*Bourletiella hortensis*, Fitch) was also present, but there was no attack by the Mangold Fly (*Pegomyia hyocyami*, Panz.), or the Mangold Flea-beetle (*Plectroscelis concinna*, Marsh). At Woburn on July 2nd, the mangolds were well grown and except for the Black Spring-tail no other pests were noticed.

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SUGAR BEET

There was no significant insect attack on Long Hoos. At Woburn (July 2nd.) there was on Stackyard a poor plant made up by transplanting. Though the Black Spring-tail was present there was no evidence of attacks by the Pigmy Mangold Beetle, the Mangold Flea-beetle or the Mangold Fly. On Lansome there was a good plant; here the Black Spring-tail was frequent, and an occasional plant was attacked by the Mangold Fly.

CRUCIFEROUS ROOT CROPS

Attack by Flea-beetles (*Phyllotreta*, spp.) necessitated re-sowings both here and at Woburn.

POTATOES

No significant insect attack.

THE FARM REPORT

I. Weather.

The weather during the season 1929-30 was generally favourable to farm operations. The autumn was wet. After January, however, drier conditions enabled spring work to start early. The rainfall for October, 1929, to January, 1930, as compared with the 77 year average, was:

	October	November	December	January
1929–30	4.51	6.56	6.01	3.24
1853–4—1929–30	3.11	2.66	2.65	2.42

For the remaining months, however, the rainfall was not far from the 77 year average. Frost was rare, the average temperature for January, 41.3°F, being 3.9° above the 57 year average, but this did not prevent a good spring tilth, because all the land had been ploughed in good order during the early autumn. During the spring and early summer the rain was sufficient to encourage vigorous growth, and excellent hay crops were favourably secured during a spell of hot, dry weather. Immediately afterwards the weather broke, and several heavy thunderstorms laid most of our heaviest grain crops. The broken weather continued during the first fortnight of harvest and aroused some anxiety; later there was a marked improvement which lasted until after the winter oats and some of the wheat had been sown. The total sunshine for the year was very close to the 37 year average.

II. Farm Policy and Developments.

The laying down to grass was completed in 1929. In 1930 water was laid on from the old supply, which had to be enlarged for this purpose, and the fields were divided into fenced areas of 6 to 9 acres, each with water and some with shelters. In addition there are a few small paddocks.

The buildings were next improved and extended so as to bring them all, including the Dutch Barn, under one roof. The extension includes two cart sheds and one storage shed, two covered cattle

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