

8. N. J. G. SMITH, The parasitism of *Helminthosporium gramineum* Rab. Abs. in Rev. Appl. Myc. 3, 1924.
9. E. VOGT, Ein Beitrag zur Kenntnis von *Helminthosporium gramineum* Rab. Arbeiten a. d. Biol. Reichsanst. f. Land- und Forstwirtschaft, Bnd. XI, 5, 1923.

INVESTIGATIONS ON THE STRIPE DISEASE OF BARLEY.

(SUMMARY OF THE PRECEDING PAPER.)

Contradictory results have been obtained by previous investigators on the behaviour of *Helminthosporium gramineum* in nature and on that in pure culture. It has not yet been established whether this fungus forms both sclerotia and perithecia.

KÖLPIN RAVN never found perithecia and only observed sclerotia in pure culture. DIEDICKE, NOACK and VOGT claim to have found perithecia as well as sclerotia in nature, whereas in pure culture they only observed sclerotia.

The present author established the presence of sclerotia as well in nature as in pure culture; in the first case they were found on dead barley plants; in pure culture they were present on drying media. These sclerotia never developed into ripe perithecia, nor was this development observed after they had been exposed repeatedly to temperatures under zero. The identity of the sclerotia found in nature was proved by artificial infection on germinating barley seed with the mycelium developing from them.

It has been claimed in „Mededeelingen van den Plantenziektenkundigen Dienst”, no. 27, that perithecia develop on barley from an infected field after incubation in a moist chamber for 3 days. The present author has repeated this experiment with infected barley from different origin, but failed to observe any perithecia or bodies resembling them on this material.

With regard to the occurrence of conidia in pure culture, KÖLPIN RAVN and VOGT failed to find any; DRECHSLER observed a very small number of them; DIEDICKE and NOACK on the other hand found them in great numbers.

The present author never found them on the usual media, but they occurred in a roll-culture of wateragar, which was kept in a dark place at room temperature and which had become entirely dry. He did not observe them until a year had elapsed and believed that their development took place in the end of this period.

He succeeded in inoculating barley, the palea inferior of which

had been removed, to a percentage of 24 as became evident after germination.

In applying this method on varieties, whose susceptibility had to be investigated, a great difference in behaviour could be observed. Some varieties proved to be susceptible, other, to be resistant and these results agreed with observations in the field. In this way the degree of resistance can be determined in one year, while previously 2 years were needed for its establishment.

In Holland the Plantenziektenkundige Dienst (Phytopathological Service) recommends as the best seed treatment sprinkling with 100 gr. Germisan in 3 L. water for every H.L. of barley.

EXPLANATION OF TABLES.

Table I. Comparison of the rapidity of growth of healthy germplants of barley with that of the mycelium of *H. gramineum* at different temperatures.

Table II. Influence of sowing time on the disease. Column 1 sowing time, column 2 number of plants present in spring, column 3 number of diseased plants, column 4 percentage diseased plants.

Table III. Results of experiments with germinfections of barleyseeds, column 1 sowing time, column 2 number of artificially infected seeds sown, column 3 number of plants obtained, column 4 number of diseased plants.

Table IV. Also results of germinfections, first line number of artificially infected seeds sown, sec. line number of plants obtained, third line number of diseased plants, fourth line percentage.

IMMUNITEIT BIJ PLANTEN VOOR PARASITAIRE AANTASTING. WAAR HET WIJFJE VAN TORTRIX VIRIDANA HAAR EIEREN LEGT

DOOR

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Dat planten onvatbaar kunnen zijn voor infectie door microben, die hare soortgenooten aantasten, wordt thans wel vrij algemeen erkend. Minder is echter bekend het feit, dat planten van nature ook tegen aantasting door parasitaire insecten gevrijwaard kunnen zijn.