BRIEF ARTICLES

OBSERVATIONS ON SCLEROTINIA ROT OF FIELD BEANS IN SOUTHWESTERN ONTARIO AND ITS EFFECT ON YIELD

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Since 1923, cottony soft rot of beans caused by Sclerotinia sclerotiorum (Lib.) deBary has been reported from all provinces except Newfoundland (1). Most of the reports have been concerned with the presence of the disease on garden beans, but a few reports have been concerned with the disease on canning and field beans. Estimates of the number of infected plants ranged from a trace to 100%. Even total crop destruction has been reported.

In 1967, surveys during August of the field bean crop in southwestern Ontario showed that this disease was again present. At the time of inspection, pods were fully formed. Estimates of infected plants were made on 21 foundation plots ranging in size from 1 to 1.75 acres Two varieties, 'Sanilac' and 'Seaway', were involved.

Six plots on high well-drained land were free from S. sclerotiorum. Seven plots contained a trace of infection to 10% infected plants, and most of these plots showed infection in small shaded or low-lying areas. The remaining plots, which were mainly on low very moist land, contained up to 50% infected plants. The moist conditions resulted in dense foliage and a microclimate conducive to infection and spread of the pathogen

Disease intensity on individual plants did not vary greatly, and most pods on infected plants were a total loss.

Yields varied from 19.4 bu/acre in a plot in which 50% of the plants were infected to 35 bu/acre in one of the healthy plots. The average yield from the six healthy plots was 30.8 bu/acre compared with 24.3 bu/acre for the eight plots in which 10 to 50% of the plants were infected. Plots that contained a trace of infection to 10% infected plants yielded an average of 28.2 bu/acre.

Although plots varied as to soil type, available nutrition, and moisture, infection was general throughout the bean-growing area, and the results indicated that this disease was of considerable economic importance. Although the fungus does not damage the plant until pod formation, infected plants usually produce little or no seed because the pods become completely rotted.

Literature cited

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THE OCCURRENCE OF FUSARIUM YELLOWS OF CABBAGE IN ONTARIO IN 1967

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Apparently there are no recent records of the occurrence in Ontario of fusarium yellows of cabbage caused by Fusarium oxysporum Schlecht. f. conglutinans (Wr.) Snyd. & Hans. During extensive surveys of diseases on vegetable crops in this province in 1967, this disease was observed in 5 of 24 fields of early-heading cabbage. On June 15, in Norfolk County, one field was observed with a trace infection (10% of the plants affected). On June 22, in the Burlington area of Haltan County a severe infection (95% of the plants affected) was encountered in one field and a slight infection (15% of the plants affected) in two fields. On June 29, a slight infection was observed in one field in the Holland-Bradford Marsh.

According to growers, fusarium yellows has been present in the Burlington area for at least 5 years, but it has not been as widespread as noted this year. June was dry with daytime temperatures ranging up to 90°F. These weather conditions are considered to be favorable for the development of this disease.

The common symptoms of the disease were stunting, yellowing, and shedding of the leaves (Figure 1). Affected leaves were usually twisted and, when cut crosswise, a brownish discoloration of the vascular tissues of the midrib was observed. The causal fungus was readily isolated from these brownish vascular tissues.

Varieties affected included Market Topper, Wisconsin Golden Acre, Emerald Cross, Early Marvel, and Copenhagen Cross. Market Topper and Wisconsin Golden Acre are considered to be resistant to this disease.

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Figures 1 and 2. Symptoms of fusarium yellows in Wisconsin Golden Acre cabbage. Figure 1. Incidence of stunted plants in the field. Figure 2. Leaf symptoms. (Photographs by T.R. Davidson)