BRIEF ARTICLES

SUNFLOWER DISEASES IN MANITOBA IN 1968

J.A. Hoes[1]

Sclerotina sclerotiorum (Lib.) de Bary and Verticillium dahliae Kleb. were the most important pathogens of sunflower (Helianthus annuus L.) in Manitoba in 1968. The former caused both head rot and stalk rot but was especially prominent in the head rot phase (Table 1). Most heads affected by S. sclerotiorum were a complete loss and infection must have taken place early and been followed by rapid disease development. Usually the head rot phase of S. sclerotiorum is scarce or absent while the stalk rot phase is more prominent. Presumably the young plants emerging in June escaped infection because this month was relatively dry. Precipitation in July and August, however, was more than twice the long term average amount of 5.3 inches for the two months, while the respective mean temperatures were 2.3F and 5.7F below normal. The prolonged cool and wet weather favored the continued production and discharge of ascospores (3), which infected the young heads, but apparently not the stalks of the plants. Sackston (2) attributed the relative abundance of head rot in 1951, at least in part, to low temperatures and frequent rains during August and September. Head rot was also due to Botrytis cinerea Pers. but damage here was less conspicuous; it was not found in 12 fields, and in the 19 other fields it affected only 1-5% of the plants. Diseased heads were only partially invaded, and environmental conditions had apparently been less favorable to Botrytis than to Sclerotinia.

Table 1. Frequency of head and stalk rot phases of Sclerotina disease in 31 sunflower fields

Phase	No. of fields with affected plants in the following percentage classes: 0	1-5	6-10	11-40
Head rot	2	26	1	2
Stalk rot	16	14	1	0

Verticillium dahliae was as prominent as in other years even though the season was abnormally wet and cool. Of 31 fields, 10 showed not more than 1% infection, 15 fields had 5-20% infected plants, and three fields of 'Commander' had 50-75% diseased plants. The variety 'Peredovik' was generally more resistant than 'Commander', confirming previous observations (1). Downy mildew caused by Plasmopora halstedii (Farl.) Berl. & de Toni was found in only 2/31 fields, causing a trace of infection. Leafspot caused by Septoria helianthi Ell. and Kell. and rust caused by Puccinia helianthi Schw. occurred in all fields but infections were light and no damage was caused. The variety 'Peredovik' showed generally a much lower density of rust pustules than 'Commander' even though in greenhouse studies both are equally susceptible in the seedling stage; 'Peredovik' displays a certain amount of adult plant resistance. Light frost caused serious damage in early planted fields in the Carberry area. Top leaves turned brown and young affected heads showed brown discoloration just below the point of insertion of the florets. Affected heads did not develop.

1 Plant Pathologist, Research Station, Canada Department of Agriculture, Morden, Manitoba.

Literature cited

1. Hoes, J.A., and E.D. Putt. 1964. Diseases of sunflowers in Western Canada in 1964. Can. Plant Dis. Surv. 44:236-237.

2. Sackston, W.E. 1952. p. 37. In Conners, I.L. and D.B.O. Savile [Compilers]. Thirty-first Annu. Rep. Can. Plant Dis. Surv. 1951.

3. Walker, J.C. 1950. Plant Pathology. McGraw-Hill Inc. 699 p.

FIELD BEAN DISEASE SURVEY IN ONTARIO — 1968

V.R. Wallen[1]

In 1968, 13 foundation plots of 'Seaway' and 8 foundation plots of 'Sanilac' field beans were inspected for bacterial blights and other diseases, The various plots ranged between ½ and 2 acres and were located in western Ontario primarily near Hensall, Kippen, and Blenheim. In addition, 23 fields of first-generation and commercial beans were also inspected.

Infected plant tissues, primarily leaves and pods, were collected from infected fields and examined in the laboratory. Common blight caused by Xanthomonas phaseoli (E. F. Sm.) Dowson and fuscous blight caused by Xanthomonas phaseoli var. fuscans (Burkh.) Starr and Burkh. were differentiated by the formation of a brown diffusible pigment by cultures of the fuscous blight organism on nutrient agar.

1 Plant Pathologist, Cell Biology Research Institute, Canada Department of Agriculture, Ottawa, Ontario.