New and Noteworthy Diseases

Stem rust of wheat caused even less damage than the relatively slight amount observed in 1956. The amount of inoculum, measured by spore traps, was at about the same low level as in 1956 but caused a moderate amount of rust on susceptible wheat varieties and wild barley. The large proportion of resistant Selkirk wheat planted and warm dry weather that favored early maturity were more influential factors in reducing stem rust. Leaf rust of wheat was the most conspicuous cereal rust in the Prairies and elsewhere in Canada. Selkirk wheat had a moderately resistant type of infection. In southern Man. where infection was most severe, 20% of the crop was affected. Infection was lower in most other areas. Eastern Sask. and central Alta. areas that were affected by drought had only traces of leaf rust.

Septoria diseases affected wheat in most provinces. In Sask., where most leaf diseases were reduced by dry weather, speckled leaf blotch was unusually conspicuous. Both S. nodorum and S. avenae f. sp. triticea were identified in Man. Glume blotch and speckled leaf blotch were common in most provinces. Oats in Man. and eastern Canada were seriously affected by S. avenae f. sp. avenae which caused both leaf spot and stem break damage. Septoria occurred on barley and rye but damage was slight.

The most conspicuous Helminthosporium disease of cereals in western Canada was netblotch of barley caused by H. teres. H. gramineum was rare. H. sorokinianum contributed to the foot rot damage to wheat and barley. The average foot rot ratings for Sask. increased slightly to 10.7 and 14.5 from 9.1 and 11.2 in 1956 for wheat and barley respectively. New records for Canada are: H. triseptatum on Holcus lanatus, H. tuberosum on Secale cereale and H. dictyoides var. phlei on Phleum pratense.

Agropyron streak mosaic was found on A. repens, Triticum aestivum and Triticum x Agropyron hybrids in Ontario. The virus was transmitted by an eriophyid mite. This is the first record of the disease in Canada.

Aster yellows reduced the 12.6 million bu. flax crop 10-15% in Sask. Another detailed survey led to a conservative estimate of the loss in flax yield as 15% for Man. where 865,000 acres would yield an average of only 4 to 5 bushels per acre. Five percent of the Man. sunflower crop was affected but some varieties were free of aster yellow when grown next to diseased selections.

In south-western Ont. Phytophthora root and stalk rot caused the most severe damage to soybeans since 1954. Heavy rainfall in July and increased planting of the very susceptible Harosoy variety both contributed to the increased loss. The new variety Chippewa was susceptible but Harman exhibited tolerance to the disease. It was serious in 5/36 Harosoy fields. Yield was reduced 18-25% in the seriously affected fields through death of plants and reduction of vigor. A second record of Macrophomina phaseoli on soybeans in Ont. was established.

Bacterial ring rot of potatoes (Corynebacterium sepedonicum) increased in prevalence especially in Que. and in districts of Ont. where the use of custom planters is general. Fall weather conditions in eastern Canada were optimum for the detection of ring rot in the field. Black leg (Erwinia atroseptica) continues to be a serious problem in seed stocks in B.C., Alta., Que. and P.E.I. The use of whole seed appears to be of some value in reducing incidence of the disease. Rhizoctonia (Pellicularia filamentosa) was unusually severe in B.C., Sask. and some districts of Ont.

Late blight (Phytophthora infestans) did not cause appreciable losses on potatoes in Canada in 1957. Although generally present in fields, it was held in check by dry conditions in late summer and early fall. Little tuber infection was reported. Common scab (Streptomyces scabies) caused losses in the Interior of B.C., in some districts of Ont., and in the lower St. Lawrence districts of Que. Conditions on the east coast of Nfld. were favorable for the development of wart (Synchytrium endobioticum). Sebago continues to show a high degree of resistance to the disease. Purple top was unusually prevalent in western Canada and in Ont., its distribution being parallel to that of aster yellows in other crops.

Aster yellows was very destructive to carrots, celery and lettuce in the vegetable growing areas of Ont. The pin nematode (Paratylenchus sp.) again caused severe stunting of celery in southern Ont. Botrytis root rot was especially severe on lettuce on muck soils in western Ont. At Leamington, Ont. the bulb and stem nematode (Ditylenchus dipsaci) was heavy on onions grown on muck soil. This infestation presents a serious threat to onion production in Ont. Leaf spot (Alternaria sp.) is causing concern in areas devoted to pickling cucumbers in N.S. and P.E.I.

The presence of near wilt of peas (Fusarium oxysporum Schlecht. f. pisi (Lindford) Snyder & Hansen, race 2) in Ont. has been confirmed. A survey of the canning crop areas has shown it to be widely distributed. Another pea disease new to Canada is Wisconsin pea stunt which was observed in Man. Studies at London, Ont. show that the organism causing tomato

anthracnose in Ont. is Colletotrichum atramentarium (Berk. & Broom) Taubenh. rather than C. gloeosporioides Penz. (C. phomoides Chester) as previously assumed. The same organism has also been shown to be the cause of a field wilt of tomatoes. Gray mold rot (Botrytis cinerea) caused heavy losses in tomatoes in N.S. especially in crops sprayed with dithiocarbamate fungicides. Late blight (Phytophthora infestans) was more prevalent on tomatoes in southwestern Ont. than at any time in the past 10 years.

Fire blight (Erwinia amylovora) continues to be a major problem on apples and crab apples in Sask. and Man. Apple scab was generally well controlled in adequately sprayed orchards. Powdery mildew (Podosphaera oxyacanthae) has become serious in many cherry orchards in the Niagara Peninsula. Little cherry symptoms were unusually severe in the Kootenays and Creston Valley of B.C. Post-harvest losses from brown rot (Monilinia fructicola) and Rhizopus rot were heavy in processing varieties of peaches in Ont. Black knot (Dibotryon morbosum) has become a serious problem in plum production in N.S. Gray mold wilt (Botrytis cinerea) was severe on mulched raspberry plantations in N.S. Green petal of strawberry was found for the first time in Que. and B.C.

Root and collar rot (Phytophthora lateralis and P. cinnamomi) has increased greatly on Lawson's Cypress in B.C. Dutch elm disease (Ceratocystis ulmi) was reported for the first time from N.B. Aster yellows affected many herbaceous ornamentals in the Prairie Provinces, particularly Ageretum, Calendula, Callistephus, Cosmos, Petunia, Tagetes and Zinnia.