NEW AND NOTEWORTHY DISEASES

Leaf rust of wheat (Puccinia recondita) was severe in much of the wheat growing area of Western Canada. Losses in susceptible varieties and in late maturing 'Selkirk' were estimated at 20 percent. Race 15 constituted 90 percent of the isolates in the Prairie Provinces. The resistance to stem rust (P. graminis f. sp. tritici) possessed by the predominant wheat varieties grown in the west again prevented widespread and severe losses. Susceptible varieties were severely attacked in both Eastern and Western Canada. Oat stem rust (P. g. f. sp. avenae) caused losses in late fields in Manitoba. Race C10 continued to increase in the west and race C9 predominated in Ontario and Quebec. Both can attack all commercial oat varieties. Races of crown rust (P.coronata) virulent on 'Landhafer' and 'Santa Fe' made up more than half the population in Western Canada in 1965.

Common root rot (Bipolaris sorokiniana, Fusarium spp.) was less severe in both wheat and barley than in 1964. Some browning root rot (Pythium graminicola) of wheat occurred in Alberta. Late maturing wheat crops in Ontario were heavily infected with powdery mildew (Erysiphe graminis). Take-all (Gaeumannomyces graminis) caused some damage to wheat in Alberta and Saskatchewan. Speckled leaf blotch (Septoria avenae f. sp. triticea) and glume blotch (S. nodorum) of wheat were generally distributed throughout Saskatchewan. Speckled leaf blotch of oats (S. avenae f. sp. avenae) and of barley (S. passerinii) were common and sometimes severe in Ontario and Manitoba respectively.

Leaf blotch (Drechslera avenacea) of oats caused damage in Newfoundland and barley was affected by spot blotch (Bipolaris sorokiniana) throughout Manitoba. Few barley fields in north and central Alberta were free of net blotch (Pyrenophora teres) and scald (Rhynchosporium secalis).

Loose smut (Ustilago tritici) was common in durum wheats in Saskatchewan and Manitoba and loose smut of barley (U. nuda) was sometimes severe in north and central Alberta. Stem smut of rye (Urocystis occulata), rarely encountered in Canada, was seen in south Alberta. Considerable amounts of bacterial black chaff (Xanthomonas translucens) occurred in wheat fields in central Alberta. Some late crops of oats and barley in Western Canada were severely infected with barley yellow dwarf virus. A previously unrecognized, mechanically transmissible virus disease of oats caused stunting, blasting of florets and foliar necrosis in oats in Manitoba.

Alsike clover in eastern Quebec suffered damage from root rot caused by species of Fusarium and crown rot (Sclerotinia trifoliorum) caused heavy losses in clovers in Prince Edward Island. Bean yellow mosaic virus and pea streak virus were found to be widely distributed in red clover in Alberta.

Pasmo (Septoria linicola) caused heavy losses in flax in localized areas of Manitoba and stem rot (Sclerotinia sclerotiorum) was prevalent and destructive in rape fields in the same province. The oat-cyst nematode (Heterodera avenae) caused appreciable damage in some corn fields in west-central Ontario. This appears to be a new host record for North America. Black root rot (Thielaviopsis ~~cola~~) was responsible for considerable losses in flue-cured and burley tobacco fields in Ontario. Tobacco veinal necrosis virus was found, for the first time in Canada, in southwestern Ontario.

Root rots. caused by species of Fusarium and Rhizoctonia solani, were responsible for losses in snap bean crops in British Columbia and in field beans in western Ontario. The Ontario crop was further reduced by a high incidence of wilt and stem rot (Sclerotinia sclerotiorum). Bacterial blights, caused mainly by Xanthomonas phaseoli var. fuscans, were found in half the bean fields surveyed in Ontario. Broccoli crops in British Columbia and New Brunswick were affected by boron deficiency.

Losses in cabbage crops from bottom rot (Rhizoctonia solani) were high in some parts of Nova Scotia. Unsprayed celery in Nova Scotia was severely damaged by leaf spot (Cercospora apiicola). Cucumber crops suffered heavy damage from leaf spot (Alternaria cucumerina) in British Columbia and Nova Scotia and from scab (Cladosporium cucumerinum) throughout Eastern Canada. Mosaic was prevalent on cucumbers in western Ontario and in Quebec. Neck rot (Botrytis allii) caused losses in stored onions in British Columbia, Quebec and Nova Scotia and fusarium basal rot (Fusarium oxysporum f. cepae) was responsible for heavy losses in spring planted onions in the British Columbia interior. The area of infestation by white rot (Sclerotium cepivorum) in Quebec was greatly extended.

Wilt (Verticillium dahliae) continued to be a problem on eggplant, pepper and tomato in the British Columbia interior and in western Ontario. The rutabaga cultivar 'York' proved highly resistant to club root (Plasmodiophora brassicae) in Quebec and the Maritime Provinces. Losses from downy mildew

(Peronospora farinosa) were heavy in spinach crops in British Columbia. Early blight (Alternaria solani) of tomato was a problem in British Columbia, Quebec and the Maritime Provinces and gray mold (Botrytis cinerea) was more prevalent than usual in fall greenhouse crops in western Ontario. Leaf mold (Cladosporium fulvum) has become serious, since the introduction of susceptible cultivars, in greenhouse tomato crops in Ontario and Nova Scotia. Losses from tomato bacterial canker (Corynebacterium michiganense) were heavier than in 20 years in Ontario greenhouses. Injury from manganese toxicity was frequently encountered in tomato crops in western Ontario.

Bacterial ring rot of potatoes (Corynebacterium sepedonicum) increased in incidence in Prinoe Edward Island and was widespread and destructive in Newfoundland whereas the incidence of blackleg (Erwinia atroseptica) decreased in most areas. The golden nematode (Heterodera rostochiensis) was found infestingabout 100 acres of potato land on Vancouver Island, British Columbia. None was found on the mainland. Leak (Pythium ultimum) caused some losses in Quebec and Prince Edward Island. Losses from wart (Synchytrium endobioticum) were unusually high in Newfoundland.

Superficial molds, mainly Alternaria spp. and Aureobasidium pullulans caused losses through reduction in grade in stored apples in British Columbia and Quebec. Perennial canker (Neofabraea perennans) caused more than the usual amount of damage in British Columbia orchards but scab (Venturia inaequalis) caused no significant losses in any of the major apple producing districts in Canada. Low spring temperatures in British Columbia, Ontario and the Maritime Provinces were responsible for apple fruit deformities. The infestation of trellis rust (Gymnosporangium fuscum) of pears on the mainland of British Columbia appears to have been eradicated.

Bacterial canker (Pseudomonas mors-prunorum) of stone fruits was found, for the first time in North America, on sweet cherry trees in Nova Scotia. Necrotic ring spot virus continues to spread rapidly in sour cherry orchards in Ontario. Both crown and cane galls (Agrobacterium tumefaciens and A. rubi) increased in severity in highbush blueberry crops in British Columbia and crown gall was occasionally severe in British Columbia vineyards. Roesleria hypogaea was reported, for the first time in Canada, as the cause of a stem and root girdling of grapevines in Ontario. Fanleaf virus occurred in grapes in both British Columbia and Ontario.

Ascochyta chrysanthemi and Pectobacterium carotovorum f. sp. chrysanthemi were recognized as causing damage in chrysanthemum propagating beds in Ontario. Both are new to Canada. Curvularia trifolii f. sp. gladioli was responsible for heavy losses in some gladiolus plantings in western Ontario.

Blight (Endothia parasitica) was severe on sweet chestnut trees in western Ontario. Needle blight (Dothiostroma pini) damaged exotic pine species on Vancouver Island, British Columbia and brown spot needle blight (Scirrhia acicicola) was severe on pines in Manitoba. Anthracnose (Gloeosporium nervisequum) caused heavy defoliation of sycamore trees on Vancouver Island. Canker (Septoria musiva) was widespread on poplars in Alberta. Willow blight (Pollacia saliciperda) continues to be severe in many parts of the Maritime Provinces. Canker (Leucostoma massariana) was reported, for the first time in Canada, on mountain ash from Quebec. Phytophthora citricola caused a shoot blight of lilacs in Alberta. The known distribution of Dutch elm disease was extended in both Ontario and New Brunswick.