C. ROOT CROPS

SUGAR BEET

DAMPING OFF (Rhizoctonia solani) was slight in several fields at St. Thomas d'Aquin and moderate in one field at La Presentation, Que. (R. Crete). R. solani in conjunction with Phoma betae and Fusarium sp. caused severe damage to seedlings in hot beds at Barnwell, Alta. Loss was estimated as 80% (J.B. Lebeau).

BLACK ROOT (various fungi) was found in trace to slight amounts in 17/27 s. Alta fields. Fungi involved were Phoma betae, Rhizoctonia solani and Fusarium sp. Pythium sp. was isolated from only two fields (J.B.L.). However, Pythium sp. caused severe damage to small patches in one field at Coalhurst, Alta. during mid-summer. Surveys of beet storage piles in the fall revealed little or no damage to mature beets (J.B.L.).

D. MISCELLANEOUS CROPS

FIELD CORN

ROOT AND STALK ROT (Gibberella zeae) was found in trace amounts in several plots at Macdonald College, Que. (R.H. Estey).

KERNEL MOLD (various fungi). Flint corn was not mature in time for fall harvesting. It was gathered in December, but by this time the scutellum of all the seed was dark and rotted (K.A. Harrison).

MUSTARD

WHITE RUST (Albugo candida) was assessed 2-tr. 3-mod./16 fields in s. Alta. (J.S. Horricks).

ROOT ROT (Rhizoctonia solani) was found in 1/16 s. Alta. fields in trace amounts (J.S.H.).

TOBACCO

Tobacco Diseases

Z.A. Patrick and L.W. Koch

Seedbed Diseases

Blue Mold or Downy Mildew (Peronospora tabacina) was not observed in Ontario or Quebec in 1958. The recommended program for blue mold control (C.P.D.S. Ann. Rept. 34: 95. 1954 (1955)) is still carried on by most growers because it has been found to aid considerably in the control of damping-off diseases.

Damping-off or Bed Rot (Pythium spp. and Rhizoctonia solani) was the most common disorder in seedbeds. In most instances, however, it occurred only in small areas of the bed and did not cause much damage.

Yellow Patch (excessive nutrients) was also very common especially in the burley tobacco area where ground beds are still quite commonly used for growing the tobacco seedlings. The seedlings usually start well, then turn yellow and die. This condition is mainly due to over-fertilization but can also occur from poor drainage in the seedbed or from seeding too soon after steaming the soil.

Field Diseases

Blue Mold (Peronospora tabacina). There were a few outbreaks of blue mold in the field in the Delhi area. Fortunately the environmental conditions following the spore showers 20-25 June were not suitable for the fungus and the disease did not become established and damage was confined to a few necrotic areas on the leaves.

Brown Root Rot (Pratylenchus spp.). Brown root rot has become one of the most serious diseases of burley and flue tobacco. The disease was widespread, occurring in all the tobacco growing areas. It was most severe in light sandy soils following a rye rotation. In many fields where large populations of the root-lesion nematodes were found many of the growers are contemplating soil fumigation as a remedial measure.

Black Root Rot (Thielaviopsis basicola). Most of the tobacco varieties used in Canada are moderately resistant and this disease was confined to low lying parts of the field where, due to poor drainage, the growing conditions are unfavorable for tobacco. The damage due to this disease was negligible.

Soft Rot (Pythium spp.) and Sore Shin (Rhizoctonia spp.). In the early part of the season these diseases caused moderate losses in the new transplants. This was especially serious in 1958 because of the widespread occurrence of the seed corn maggot which, through its feedings on the roots and stalk, provided additional infection courts for these two pathogens.

Frenching (? soil toxins). This disorder was confined to fields where the soil type is marginal and unfavorable for growing tobacco. In such instances the losses can amount to as much as 50% of the crop.

Wildfire and Angular Leaf Spot (Pseudomonas tabaci and P. angulata). These two diseases, which cause large irregular brown and black lesions on the leaves, were found in a number of fields at the end of August. Only one or two leaves were affected on each plant and damage was slight.

A number of tobacco leaf samples which were sent from Kentville, N.S. by Dr. J.F. Hockey also appeared to be affected by these diseases. This could not be definitely established, however, because the tobacco was killed by frost before additional leaf samples could be obtained.

Brown Spot (Alternaria longipes) was especially serious on flue-cured tobacco in 1958. Although this disease is usually confined to maturing tobacco, this year it occurred early and persisted throughout the whole growing season. In many areas the leaves were completely covered with large, circular brown spots and yields and quality were greatly reduced.

Frogeye (Cercospora nicotinae) was also widespread in 1958 and damage in terms of quality and value of the leaf, was moderate.

Weather Fleck (non-parasitic). Although this condition was again widespread in most of the tobacco growing areas of Ontario the damage was only slight. The reduction in severity of the disease appears to be mainly due to the widespread use of the variety Delcrest which has a thicker leaf than the varieties White Gold or Hicks both of which are especially susceptible to this disorder.

Mosaic (virus). Injury from TMV was widespread throughout the burley and flue-cured tobacco growing areas of Ontario and Quebec. Only a few plants in each field were affected, however, and the damage was slight.

Etch (virus). Damage from the etch virus was especially severe on burley tobacco in the Leamington-Harrow areas where many crops were a total loss and were disced under. Some etch was also noted on flue-cured tobacco in this area but the symptoms were very mild. In a survey carried out along the north shore of Lake Erie no cases of etch were found east of the Harrow-Leamington areas of Essex County.

Other Virus Diseases. The 1958 season appeared to be especially favorable for the development and spread of many virus diseases. Of these, ring spot, streak, vein banding, cucumber mosaic and the potato viruses were especially prevalent and caused slight to moderate damage.

Other Observations

CHEMICAL INJURY (Chlordane). Chlordane dust was applied to seedlings to control ants. The leaves became puckered, and distorted and the base of the hypocotyl became enlarged. About 20,000 plants were discarded in s. Ont. (R.W. Walsh).

E. CULTIVATED AND OTHER GRASSES

AGROPYRON REPENS

Mildew (Erysiphe graminis) was present in an orchard in Kings County, N.S. (R.G. Ross).

Culm smut (Ustilago spegazzinii was found at Trout Creek Point, B.C. The disease has been noted for several years and is gradually spreading (G.E. Woolliams).