FIELD CORN DISEASES IN SOUTHWESTERN ONTARIO IN 1964

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The corn disease situation in Essex and Kent Counties was aggravated by cool spring weather with delayed seedling emergence, severe wind damage to seedlings, and a midsummer drought. Leaf diseases were present but were not severe enough to cause yield reductions. Most losses could be attributed to drought. Sunscald was widespread in July, appearing on flag leaves shortly before tassel break. Seed-rots and damping-off, although largely controlled by seed treatment, were found in few instances. In the Harrow selection 632-335, which was extremely susceptible to seed rot, kernels were found to be heavily infested with Fusarium graminearum Schwabe (F. roseum Lk. f. cerealis (Cke.) Snyd. & Hans.).

Northern corn leaf blight (Bipolaris turcica (Pass.) Shoem.) which reached epidemic proportions in 1961 and 1962, has been virtually absent in 1963 and 1964. Two factors responsible for the decline of this disease may have been the absence of prolonged wet periods in August during the past two years, and the increased sales of blight-resistant hybrids to growers.

A new leaf spot characterized by circular or oblong spots with brown margins and gray, almost transparent centres was observed in a few fields during the latter part of the growing season. It occurred mainly on lower leaves. Its cause is not get known.

Corn smut (Ustilago maydis (DC.) Cda.) was found in most fields visited. Significant levels of infection were observed in only one field,, near Tilbury, where about 50% of the plants had smut galls on the lower stalks. Rust (Puccinia sorghi Schw.) was rarely found and was not severe in any field where it was observed.

Considerable barreness, with accompanying ear proliferation, was observed during the autumn, In one field at Ridgetown, approximately 70% of the plants were barren. Affected plants were usually damaged by the corn leaf aphid (Rhopalosiphum maidis). The midsummer drought probably contributed to this situation.

Also prevalent in 1964 but not seen in previous years was a longitudinal red striping of kernels. Kernels near the tip of the ear were most intensely colored. The condition varied from plant to plant but it was found in all fields visited. The cause is under investigation.

Ear and kernel rots were more prevalent than in other years. Much of the kernel rot (Fusarium moniliforme Sheldon) was associated with bird damage, Considerable superficial growth of Fusarium moniliforme was also seen on cobs of late maturing hybrids. This presents a threat to safe storage of grain, especially where the corn has been harvested too early.

Stalk rot was serious in fields where susceptible hybrids were planted, approaching 100% by harvest time in some fields. In 60-90 per cent of the affected plants stalk-rot could be traced to previously rotted roots. The remainder of the infections were associated with above-grow nodes (5-20%) and corn borer tunnels (2-10%). Fusarium graminearum was again associated with stalk-rot, as in 1963. Stalk breakage was further augmented by heavy frosts during tho first week of October.

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