BRIEF ARTICLES

Disease survey of registered bean fields in Ontario 19

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During the latter part of August, an extensive disease survey was made throughout the main field bean growing areas of southwestern Ontario. Two general areas were inspected: north of London in the Exeter, Hensall area and the Chatham, Blenheim area. Some fields were inspected between these two major areas. As this was the first year that Michigan breeder seed had been grown in Ontario, following an agreement between the Canadian Seed Growers' Association and the producers of Michigan breeder seed, the survey was made primarily to compare the incidence of bacterial blights in the fields produced from Michigan-grown and Ontario-grown seed.

A total of 61 fields were examined representing the following grades of seed: breeder, foundation, 1st generation registered and 2nd generation registered. Twenty-four fields from Michigan-grown seed and 37 fields from Ontario-grown seed were inspected representing four varieties: Sanilac (1192 acres), Seaway (434 acres), Saginaw (27 acres) and Michelite 62 (1 acre).

Of the 61 fields inspected, 27 were infected with bacterial blight, three of 24 fields from Michigan-grown seed and 24 of 37 fields from Ontario-grown seed. The degree of infection ranged from trace amounts in some fields to a 130-acre field of Sanilac in which all plants were infected. Yield in this particular field could be reduced by as muchas 50 percent as the crop was five weeks from maturity. Eighty percent of the fields planted with Ontario-grown Seaway were infected in varying degrees. In contrast, 20 percent of the fields sown to Michigan-grown Seaway were infected in trace or slight amounts. Fields of Saginaw and Michelite 62 from Michigan-grown seed were free from blight. Only one field of Ontario-grown Saginaw was inspected and a trace amount of blight was located in this field.

Infected plant material was collected from diseased fields and bacterial isolations were made. Following isolation, the cultures were tested for their pathogenicity. The results of this test showed that 19 fields were infected with fuscans blight (Xanthomonas phaseoli var. fuscans); 12 fields were infected with common blight (Xanthomonas phaseoli) and three fields were infected with haloblight (Pseudomonas phaseolicola).

Sclerotinia wilt appeared to be the most important disease in the bean crop this year. Of the 61 fields inspected 25 were infected. Both of the main varieties, Sanilac and Seaway, were infected. Thirty fields of Sanilac were inspected and 10 were found to be infected. Twenty-six fields of Seaway were inspected and 13 were infected. From a few plants to 50 percent of the plants were infected in the various fields. Most plants infected were almost a total loss as the stem, petioles and a high percentage of the pods were rotting. With continued wet weather this disease could lower yields considerably in the bean crop this year.

Root rot, (cause undetermined) but probably fusarium dry root rot because of symptomatology, was present in 11 of 61 fields inspected. The disease appeared primarily in patches in fields and the disease severity was generally low. However, some plants were affected severely and yields in certain fields will be reduced. The disease was present in Seaway and Sanilac but not in Saginaw or Michelite

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Diseases of grapevine in Ontario

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A preliminary survey of grapevine viruses was made in late spring and summer of 1965. Fanleaf-like symptoms, mainly leaf mottle or mosaic and leaf deformitywere observed in some vines of 'Agawam', 'Delaware', 'Elvira', 'Pinot Chardonnay', 'Seibel 10878' and 'Seibel 14660'. Characteristic symptoms of fanleaf were observed in some plants of the rootstock V. riparia x rupestris '3309' importedfrom France.

The indexing method consisted of mechanical inoculation of Chenopodium amaranticolor and C. quinoa with sap from young grape leaves. Fanleaf virus was isolated from 2 out of 62 vines of '3309' tested. Similar attempts to transmit virus from suspect plants of the other varieties to herbaceous hosts all failed.

Leaf roll symptoms were often observed in the variety 'Veeport', but to what extent the leaf roll virus is involved is not yet known. No symptoms of Pierce's disease, yellow mosaic, yellow vein or corky bark were observed in the surveyed vineyards. Work is now in progress to establish an indexing program using 5 indicator varieties to detect grapevine viruses in Ontario and to evaluate their economic importance.

Xiphinema index Thorn & Allen, the vector of the soil-borne grapevine viruses, was not found in soil samples from the different vineyards whereas X. americanum Cobb was present in all samples.

A root disease problem was found in 3 vineyards in Ontario. Vines showed a gradual decline in vigor, sudden collapse and subsequent death as a result of either girdling of the underground stem or death of the larger roots. The disease appears in spots in vineyards with wet heavy soils. Spread to neighboring plants was apparent. Fructifications of a Roesleria sp., possibly & hypogaea (Thum. & Pass.) were found on all dead roots and stems. Whether the fungus is a real parasite in grapes in Ontario or whether it is a saprophyte on tissues affected by other root fungi is not yet known.

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