

DISEASE SURVEY OF REGISTERED FIELD BEANS IN ONTARIO - 1964M. D. Sutton and V. R. Wallen<sup>1</sup>

A disease survey was conducted in the main bean-growing areas of southwestern Ontario in the latter part of August. The survey was divided into three areas: in the north, the Kippen, Hensall and Zurich area; in the central part, Strathroy and adjacent areas, and in the south, the Blenheim and Chatham area. Particular attention was paid to the incidence of "fuscous" blight (Xanthomonas phaseoli (E.F. Sm) Dows. var. fuscans (Burkh.) Starr & Burkh.).

In 1964 more of the acreage was sown to "disease-free" seed produced in Michigan under the supervision and inspection of plant pathologists. Formerly, breeder seed was produced in the Ridgetown area of Ontario where environmental factors were conducive to fuscous blight. Recently, however, the Canadian Seed Growers' Association has entered into an agreement with the producers of Michigan foundation seed to provide Ontario growers with a certain amount of Michigan foundation bean seed in 1965. This influenced many growers to use Michigan seed in 1964.

A steady increase in the incidence of fuscous blight in the bean crop has been observed since 1957, and in 1961 and 1962 it reached epidemic proportions. The prime purpose of this survey, in addition to determining the incidence of fuscous blight and common blight by field inspection, was to compare the incidence of bacterial blights in Ontario-grown and Michigan-grown seed.

Twenty-seven fields, approximately 385 acres, representing four bean varieties were examined. The number of fields and the acreage of each variety examined were as follows: Sanilac, 10 fields, 181 acres; Seaway, 12 fields, 170 acres; Saginaw, 3 fields, 32 acres and Michelite, 2 fields, 1 acre. Of the total acreage examined 44.4% was sown with brooder and foundation seed from Michigan and 37.1% with similar seed from Ontario. The balance of the acreage, 18.5%, was produced from Ontario-registered first generation seed.

Bacterial blight was found in trace amounts in only 3 of the 27 fields examined. Specimens of infected plant material were taken and the pathogens isolated and identified by laboratory methods. One field grown from Michigan breeder seed was infected with the fuscous blight pathogen, X. phaseoli var. fuscans. The other two fields, which were sown with Ontario-grown foundation seed, one of Saginaw and one of Sanilac, were infected with the common blight pathogen, X. phaseoli. Discrete loci of infection apparent in all three of the above-mentioned fields indicated that the infections were of seed-borne origin. It was not possible to make a comparison of the health status of Michigan and Ontario seed with regard to bacterial blight as a result of the small amount of infection observed in the 1964 bean crop.

Sunscald and moderate to severe damage to the foliage by the green clover worm, Plathypena scabra Fabr. were general throughout the area examined. The development of both sunscald and the heavy infestation of the green clover worm were favoured by the climatic conditions in the area. One of the fields of Saginaw infected with bacterial blight was also infected with sclerotinia wilt.

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