

A SURVEY FOR BACTERIAL BLIGHT IN REGISTERED FIELD BEAN CHOPS
IN SOUTHWESTERN ONTARIO

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Thirty-five bean fields, representing 540 acres grown for registration, were inspected twice during the summer of 1961. The first inspection was made early in July to estimate the prevalence of seed-borne infection in the crop and to distinguish, if possible, the symptoms of halo blight from common blight in the field. The second inspection was made in late August to determine the extent of infection in the crop before harvest. The percentage of pod infection was used during the second inspection as a criterion for disease diagnosis. Twenty-one fields of Sanilac, 9 fields of Michelite and 5 fields of Seaway were represented in the survey. Infected leaves and pods were excised during the second inspection for bacteriological examination in the laboratory.

Sixteen of the fields selected for inspection were sown with the growers' own registered seed from the 1960 crop; eight were sown with seed imported from the United States, and eleven fields with seed purchased from seed merchants in the district. Five lots in the last category were breeders' stock produced at the Ridgetown Agricultural School.

The results of the survey indicate that there has been a build-up of seed-borne inoculum of both Xanthomonas phaseoli (common blight) and Pseudomonas phaseolicola (halo blight) in southwestern Ontario. Of the fields examined, 6 were healthy; 8 had leaf and stem infection but no pod infection, and the remaining fields all contained infected pods. Of the 8 fields' sown with imported seed, 4 were free of bacterial disease and the remaining fields, showed only a trace of infection. Of the 5 fields sown with breeders' stock, only 2 had slight infection. All 16 fields sown with growers' own seed contained pod infections ranging as high as 25 per cent.

Bacteriological examination of plant material from 15 fields, chosen at random, produced 4 isolates of Ps. phaseolicola and 7 isolates of X. phaseoli. The pathogens were detected and identified by the rapid phage plaque count method. The application of this method confirmed the field diagnosis that both pathogens were present in the crop.

Other bean diseases were noted in the course of the survey. A trace of fuscus blight, Xanthomonas phaseoli var. fuscans was seen in a field of Sanilac and common and yellow mosaic were prevalent in many of the fields. Anthracnose, Colletotrichum lindemuthianum, was not observed.

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