

The occurrence of the lambda race of bean anthracnose in Ontario¹

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Seven isolates of *Colletotrichum lindemuthianum* collected in 1977 during a survey of pedigreed field beans for anthracnose have been determined as belonging to the lambda race. This is the first report of this race in Canada.

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Sept isolats de *Colletotrichum lindemuthianum* prélevés en 1977 au cours d'une enquête sur la fréquence d'anthracnose chez les haricots secs de catégorie généalogique ont été rattachés à la race lambda. Il s'agit de la première mention de cette race au Canada.

In 1976, during routine inspections for purity and freedom from disease of white bean Select plots, a pod with anthracnose-like symptoms was located in one of the Sanilac plots near Staffa, Ontario. As the principal cultivars of white beans, Sanilac, Seafarer and Kentwood were resistant to the prevalent races of anthracnose in Ontario at that time, it was suspected that a new race of the organism *Colletotrichum lindemuthianum* (Sacc. and Magn.) Bri and Cav. was present in the bean growing areas. A second inspection revealed that two additional fields were infected with the organism. Subsequently, using the differential bean cultivars, Widusa, Kaboon, Cornell 49-242 and Dark Red Kidney for the identity of races of *C. lindemuthianum* it was determined that the fungus isolated from the Select plot belonged to the delta group (2).

With the knowledge that this new race was present in Canada and the immediate danger to the bean crop, as the three principal bean cultivars, Sanilac, Seafarer and Kentwood are susceptible, a large comprehensive field survey was carried out in 1977 by a combined team of Plant Products and Plant Quarantine Division personnel, Food Production and Marketing Branch and Research Branch personnel, Agriculture Canada. All pedigreed fields in Ontario were inspected in this survey, conducted during the last week of August and the first week of September. Over 60 isolates were obtained from infected bean leaves and pods from infected fields

located in this survey and subsequently race determinations were made. The results of this survey will be reported later.

In preliminary tests for race determination, it became apparent that although most of the isolates tested were of the delta race, seven isolates did not fit into the delta category because of their ability to infect the differential cultivar, Kaboon. The differentiation between races "delta" and "lambda" is dependent on the reaction to the cultivar Kaboon which is resistant to delta and slightly susceptible to lambda, according to Hubbeling (1) who isolated a deviating mutant alpha race and named it lambda.

The occurrence of the lambda race in Ontario does not warrant additional concern to the bean industry as the delta and lambda races are closely related and incorporating delta resistance will also include lambda resistance. Studies for anthracnose resistance are now being carried out at a number of establishments in Ontario.

Literature cited

1. Hubbeling, N. 1974. Resistance in beans to the lambda race of *Colletotrichum lindemuthianum*. Proc. 19th Int. Hort. Congr. 1A:293.
2. Wallen, V.R. 1976. Anthracnose on field beans in Ontario. Can. Plant Dis. Surv. 56:109.

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