## Distribution by Provinces of Physiologic Races of Phytophthora infestans in Canada in 1958

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The Fredericton Laboratory conducted for the fifth consecutive year a survey to determine the races of the late blight fungus occurring in the country during the growing season of 1958. A summation to November 18 reveals that 273 collections were examined and 363 isolates identified as to race from seven provinces. The collections obtained were in the form of leaves, tubers, potato balls and tomato fruits. The results of the survey are presented in Table.

Table 13

| Physiologic Race | Provinces | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Nfld. | P.E.I. | N.S. | N.B. | Que. | Ont. | B.C. | Total |
| 1 | | 4 | 17 | 2 | 4 | | 3 | 30 |
| 2 | | | | 1 | 2 | | 1 | 4 |
| 3 | | 1 | 25 | 3 | 13 | 2 | 4 | 48 |
| 4 | 2 | 7 | 82 | 8 | 44 | 6 | 4 | 153 |
| 1.2 | | | 2 | | 1 | | | 3 |
| 1.3 | | 2 | 13 | 1 | 7 | | 1 | 24 |
| 1.4 | | 4 | 38 | 10 | 20 | | | 72 |
| 2.3 | | | | 1 | | | 1 | 2 |
| 2.4 | | | | 1 | 3 | | | 4 |
| 3.4 | | | 8 | 4 | 6 | | 1 | 19 |
| 1.3.4 | | | | 1 | 1 | | | 2 |
| 1.2.3.4 | | | 2 | | | | | 2 |
| | 2 | 18 | 187 | 32 | 101 | 8 | 15 | 363 |

The results are based mainly on a single determination on the differential hosts. Race 4 appears to be the common race encountered but this may be due to the possible masking of race O. Race 1,4 is the second most prevalent form. The field records of this survey reveal several inconsistencies with regard to the race involved and the variety attacked In this compilation it was noted that the more specialised races of the fungus tended to develop in areas where blight resistant potatoes were

being tested. The two collections of race 1,2,3,4 were received from Nova Scotia in March. One of these races was isolated from tomato and the other from potato. These collections were misleading in that they registered as race 1,2,4 when received but in subsequent tests they registered on all the genotypes as a severe form of race 1,2,3,4.

LEAK (Pythium ultimum) affected 3 crops in central B.C. and 3 in the Pemberton district. All crops examined in s.e. B.C. were infected and some had as many as 5% of the tubers affected (N.M.). In Sask. the absence of a killing frost before 15 Sept. resulted in the harvest of many poorly matured tubers in the late varieties. There was considerable early storage breakdown. Five cases were investigated and in each case Pythium sp. was isolated (R.J. Ledingham). Early harvested crops in Man. had 2-5% infected tubers in the bin soon after harvest (D.J.P.); from 1/2-2% of the tubers of early varieties at the University of Man. were infected (W.C.McDonald). At Ste. Anne de la Pocatiere, Que. it was sev. on Irish Cobbler in loamy soils. Teton, grown in sandy soil, was free of infection at harvest but was 10% infected after 1 week in storage (H. Genereux). A 10% infection in Cherokee was recorded at Merigomish, N.S. Pythium sp. was isolated from diseased tubers (K.A.H.).

POWDERY SCAB (Spongospora subterranea). Trace infections on Netted Gem at Cedar, B.C. lowered the grade of tubers (W.R. Orchard). Sl.-mod. infections were seen in 8 bin lots inspected in Que. (B.B.). A tr. infection was seen on Bliss Triumph at Glenmont, N.S. (K.A.H.), and a light infection occurred on Fredericton seedlings at St. John's West, Nfld. (O.A.O.).

COMMON SCAB (Streptomyces scabies) caused damage to white-skinned varieties in B.C. but Netted Gem was little affected (N.M.). It was present in some seed stocks in n. Alta. and in some instances affected even the normally resistant Netted Gem (E.C.R.); sl. infections were seen on some smooth skinned varieties in s. Alta. (R.P.S.). In Ont. District #3 the incidence of scab was slightly lower than in 1957. It was observed causing superficial lesions on the resistant Huron variety in the Lafontaine area (H.W.W.). Sl. infections were general in s.w. Ont. (J.T.McK.). Common scab is one of the commonest troubles in Bruce, Grey, Dufferin, York, Waterloo and Wellington counties in Ont. The pH of the soils is high and sl. scab averages 20-25% and sev. scab 10-15% (W.L.S.K.). It was prevalent in Renfrew Co., Ont. Little or no scab was seen on Rural Russet and Huron (E.H.P.). Scab was reported in 315 bin lots inspected in Que. in the fall of 1958. It was mostly confined