

THE SUSCEPTIBILITY OF POTATO VARIETIES TO STORAGE ROTS CAUSED  
BY FUSARIUM SAMBUCINUM F6 AND FUSARIUM CAERULEUM AND TO WILT  
CAUSED BY VERTICILLIUM ALBO-ATRUM IN 1961

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The susceptibility of twenty-one potato varieties and seedling lines to rots caused by two species of *Fusarium* (*F. sambucinum* f. 6 and *F. caeruleum*) and of eighteen varieties and lines to wilt caused by *Verticillium albo-atrum* was tested at Charlottetown in 1961. The tests for susceptibility to *Fusarium* rots were made by immersing artificially wounded tubers in spore suspensions (1000 spores per cc) of the respective pathogens. Tuber lots were inoculated with *F. sambucinum* f. 6 on January 9 and examined for decay on May 15. Similar lots were inoculated with *F. caeruleum* on February 20 and examined on May 25. The test for susceptibility to *Verticillium* wilt consisted of a pre-planting immersion of seed pieces in a spore suspension of *V. albo-atrum*. The relative susceptibility of the tested varieties to the three pathogens is shown in Tables 1-3.

Table 1. Relative susceptibility of twenty-one potato varieties to tuber rot caused by *F. sambucinum* f.6 - 1961.

<u>Variety</u>	<u>Average percent rot</u>	<u>Converted averages</u>
F 3324	89.0	70.75
F 4724	84.8	68.00
F 5561	81.5	64.71
F 5649	81.2	64.44
Sebago	80.6	63.97
Keswick	78.7	63.20
F 4913	78.1	62.41
Kennebec	78.0	62.67
F 5510	75.6	60.85
F 5611	75.4	60.46
F 5143	72.5	58.84
Fundy	72.0	58.22
F 5317	64.9	54.00
F 4834	63.8	53.11
F 5459	62.6	52.53
Norgleam	59.6	50.60
Hunter	58.4	49.71
F 4519	53.3	46.86
F 5669	52.6	46.53
Green Mountain	51.2	45.69
Irish Cobbler	28.4	32.16
N. D. S. at P=0.05		6.65

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Table 2. Relative susceptibility of twenty-one potato varieties to tuber rot caused by *F. coeruleum* - 1961.

<u>Variety</u>	<u>Average percent rot</u>	<u>Converted averages</u>
<b>F</b> 5459	45.0	42.13
<b>F</b> 5649	41.9	40.32
<b>F</b> 5669	37.7	<b>37.89</b>
<b>F</b> 5561	33.8	35.42
<b>F</b> 5510	30.6	33.55
<b>F</b> 4834	30.4	33.38
Fundy	29.6	32.87
<b>F</b> 5317	26.3	30.69
Keswick	25.2	30.02
<b>F</b> 4519	<b>24.4</b>	29.34
Hunter	23.8	29.15
<b>F</b> 3324	18.3	25.14
<b>F</b> 4913	17.9	24.60
<b>F</b> 4724	17.7	24.64
<b>F</b> 5143	15.2	22.58
Sebago	11.6	18.54
<b>F</b> 5611	11.5	19.75
Norgleam	9.0	17.33
Green Mountain	8.1	15.48
Kennebec	5.8	12.92
Irish Cobbler	4.1	10.93
N. D. S. at <b>P=0.05</b>		5.61

Table 3. The relative susceptibility of eighteen potato varieties to wilt caused by *Verticillium albo-atrum* - 1961,

<u>Variety</u>	<u>Percent wilt<sup>1</sup></u>
Norgleam	62.5
<b>F</b> 5284	43.0
Irish Cobbler	35.5
<b>F</b> 5247	34.5
<b>F</b> 5609	32.0
Kennebec	26.5
Norland	26.0
ND 3324	23.0
<b>F</b> 5669	23.0
Fundy	17.0
<b>F</b> 5649	17.0
<b>F</b> 5611	14.5
<b>F</b> 5350	12.5
<b>F</b> 5570	10.5
<b>F</b> 5459	10.0
<b>F</b> 5113	3.5
<b>F</b> 5559	3.0
<b>F</b> 5561	0.5

<sup>1</sup> Based on 4 replicates, 50 plants per replicate.

On the basis of the known susceptibility of the varieties Sebago and Keswick to F. *sainbucinum* f.6 the results of the trials in 1961 indicate that at least ten other varieties and lines are equally or only slightly less susceptible to this organism. Relative resistance was noted in tuber stocks of Irish Cobbler, Green Mountain, F5669, F4519 and Hunter,

In several years of screening for resistance to F. *caeruleum*, consistent resistance has been found in stocks of Irish Cobbler, Sebago, Green Mountain and Kennebec. A high degree of varietal susceptibility has been more difficult to estimate because of the variability in results from year to year. It is felt that a minimum of three years testing is required for a true appraisal of high susceptibility. Using Keswick as a known standard of high susceptibility to F. *caeruleum*, the data obtained in 1961 appear to indicate that several Fredericton seedlings are quite susceptible to decay from that organism.

Several potato lines appear to be highly susceptible to *Verticillium* wilt when Irish Cobbler is used as a standard of known reaction. The variety Norgleam in particular showed severe symptom development. Fredericton seedlings F5561, F5559 and F5113 showed a high degree of resistance.

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