

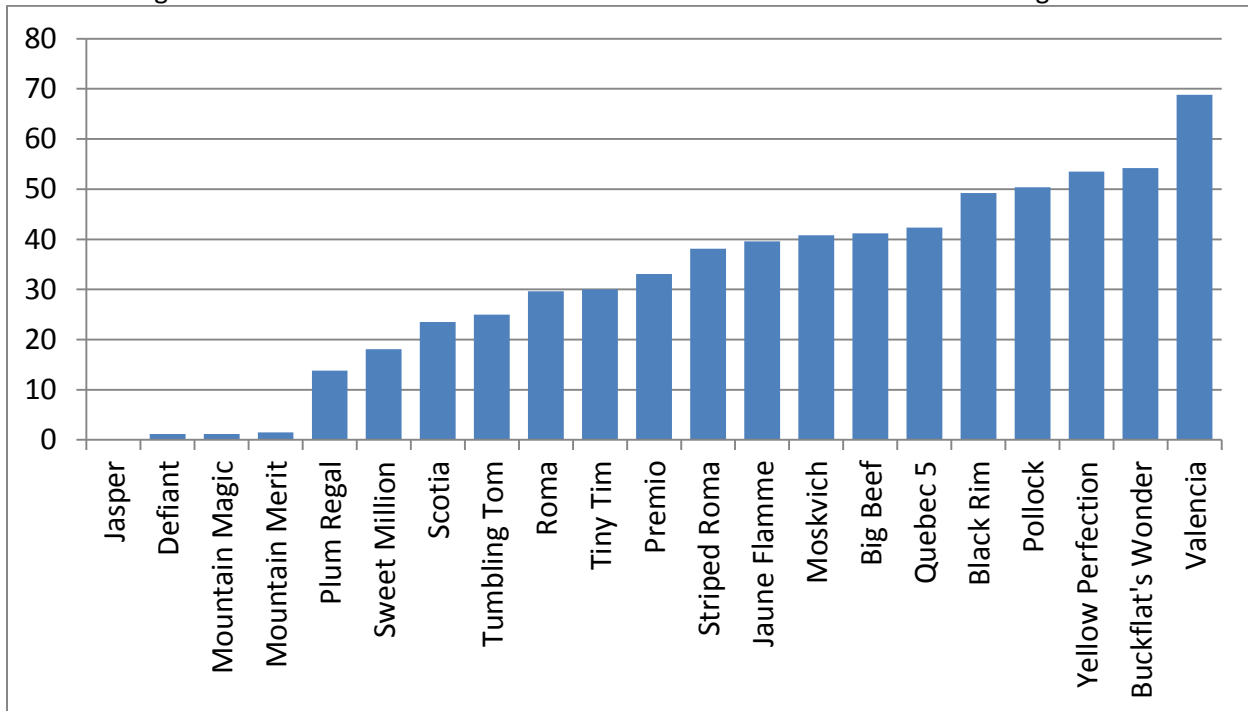
## PROJECT SUMMARY

### LATE BLIGHT IN HERITAGE TOMATO SELECTIONS

Eight heirloom tomato selections from two certified organic farms that had exhibited traits of resistance to late blight (*phytophthora infestans*) were introduced into the late blight resistance screening trials at Agriculture & Agri Food Canada (AAFC) led by Dr. Rick Peters.

The trial was initiated in February 2017, under controlled greenhouse conditions, with six (6) plants from each of the 8 heirloom selections; as well as, five (5) standard varieties (to serve as control) with known resistance (Jasper, Defiant, Mountain Magic and Mountain Merit) and susceptibility (Scotia). This ensured a valid screen. Upon reaching a uniform growth stage (approximately 6" in height) and adequate leaf canopy, plants were inoculated with the US-23 strain of late blight (the predominant strain on PEI). To create conditions ideal for the infection and spread of late blight, the plants were enclosed under plastic and misted regularly. This same inoculation process will be repeated for US-8, US-24 late blight strains.

The following chart summarizes the results of the inoculation of tomatoes with late blight strain US-23:



The varieties are on the x-axis and the percent of foliar lesions/damage caused by late blight is found on the y-axis



The numbers on the y-axis (from 0 – 80) represent ‘percent necrosis’ – in other words the percentage of the inoculated plant that is showing lesions, decay and brown necrosis due to late blight. Jasper, Defiant, and Mountain Magic are highly resistant to late blight (US-23). Plum Regal would be considered moderately resistant. Scotia is typically a susceptible standard (of course there is some variability in response from trial to trial). As can be seen, the majority of varieties are susceptible to US-23.

There appear to be significant differences among varieties, especially between those with excellent late blight resistance (Jasper, Defiant, Mountain Merit and Mountain Magic) and the others.