

Objective 1i. Develop leaf spot resistant tart cherry cultivars.

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Seven MSU seedlings selections have been identified that have *P. canescens*-derived resistance to cherry leaf spot (CLS). The level of resistance exhibited is extremely promising as the fungus is not able to sporulate on these selections and therefore the leaves do not yellow or abscise. These selections are currently being used in the breeding program to transfer this high level of resistance into commercially acceptable cultivars.

Table 1: Dew chamber observations for reaction to cherry leaf spot (CLS) infection for 27 selections derived from GI 148-1.

MSU Selection	Number of times screened with <i>P. avium/ cerasus</i> ^A	Dew chamber results
23 22 (03)	1	Atypical CLS lesions
23 23 (01)	1	Atypical CLS lesions
23 23 (02)	2	No CLS lesions
23 23 (11)	2	Few spots, not typical of CLS
23 23 (13)	3	Few spots, not typical of CLS
23 23 (14)	1	No CLS lesions
23 23 (20)	1	No CLS lesions

^ANumber of times selections were inoculated in the dew chamber.

Five selections in the MSU tart cherry breeding program exhibit tolerance to CLS that is derived from sweet cherry and/or the tart cherry cultivar Northstar. However, it is not known how this increased CLS tolerance would translate into a reduced spray program. Therefore, these selections were planted at the North West Station in Spring 2006 to provide the opportunity to utilize a reduced spray program to determine the potential pesticide savings that would be realized with tart cherry selections exhibiting differing levels of CLS tolerance. The acceptable fruit quality of these selections indicates that achieving superior fruit quality characteristics along with CLS tolerance is an achievable goal.

Table 2: Cherry leaf spot (CLS) ratings and sources of tolerance for Montmorency and five tart cherry selections planted at the North West Station in Spring 2006

Selection	CLS rating ^x	Source of tolerance
Montmorency	4	-

26e 11 (27)	3	Sweet cherry
26e 17 (29)	2.5	Northstar and sweet cherry
40-19 UK	2.5	Sweet cherry
26e 13 (59)	2	Northstar and sweet cherry
27 27 (44)	1	Northstar and sweet cherry

^xRating scale is 0 = no infection to 5 = defoliated.

Figure 1. MSU selection 27 27 (44) planted at MSU's Clarksville Horticultural Experiment Station and not sprayed with any insecticide or fungicides. The photo was taken August 25, 2006.

