2001 Sweet Cherry Variety Trial on Gisela 5 and Gisela 6 Rootstocks

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A dwarf sweet cherry orchard (98 trees) was planted in Spring 2001 at the UMass Cold Spring Orchard Research & Education Center (Orchard Block A15). Included are 16 sweet cherry cultivars, including: Cavalier, Chelan, Jubileum (tart cherry), Rainier, Regina, Sweetheart, Lapins, Royal Ann, Sandra Rose, Black Gold, Hartland, Hedelfingen, Sam, Schmidt, Ulster, and White Gold. All are on Gisela 5 and/or 6 rootstocks, which provide app. 50% and 70% (respectively) dwarfing, compared to standard cherries on Mazzard or similar rootstock(s).

Objectives of the research include are to 1) evaluate the overall performance of sweet cherries grown on dwarfing rootstocks under Massachusetts growing conditions; 2) identify obstacles and solutions to sweet cherry production, such as birds, cracking, and canker; and 3) evaluate sweet cherry varieties for harvest date, fruit size, fruit sugar content, cracking susceptibility, and marketability.

Tree growth has been excellent for most cultivar/rootstock combinations. Emphasis was placed on growing and training the trees to a modified 'Vogel' central-leader. Data collected to date includes trunk circumference at planting and at the end of the each growing season (2001-2004). Preliminary statistical analysis of the data (Table 1) has shown that in terms of trunk cross-sectional area, trees on G.6 were larger than those on G.5, and that there was a significant difference in size between cherry cultivars. There was also a significant interaction between rootstock and cultivar. Several years of growth data will be necessary before final conclusions can be made but it is safe to say Gisela 6 will make a significantly larger tree than Gisela 5 with any cultivar.

In 2003, a light crop of cherries was harvested, too few to collect any data. It was expected that the trees would begin cropping more heavily in 2004, however, low temperatures of -12 F. in January 2004 killed all of the fruit buds on most cultivars. The sweet cherry variety Chelan and sweet-tart cherry Balaton were notable exceptions. About 15 pints of cherries from both were harvested in 2004. Chelan was susceptible to cracking and was well-liked by a flock of cedar waxwings that moved in just as they were ripening. This bird species is going to be a challenge to manage in the future. Balaton has some very positive traits for a sweet-tart cherry and is already recommended for planting. As of this writing, there are many fruit buds on the trees for 2005, and barring spring frost, there should be a good crop of fruit in 2005 to harvest and collect data.

Table 1. Trunk cross-sectional area at the end of the 2004 growing season for selected sweet cherry cultivar/rootstock combination

Cultivar/Rootstock	Trunk cross-sectional area 2004 (cm^2)
Chelan/Gisela 5	25.3
Chelan/Gisela 6	98.1
Ranier/Gisela 5	41.4
Rainier/Gisela 6	72.2
Regina/Gisela 5	23.7
Regina Gisela 6	59.9
Jubileum/Gisela 5	69.8
Jubileun/Gisela 6	109.8

Significance
Cultivar *** ($P < 0.001$)
Rootstock ***
Cultivar x rootstock * ($P < 0.05$)

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