

Preliminary Research with Continuous Mechanized Harvesting Systems for Tart Cherry.

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Research was conducted in 2008 and 2009 to test the potential of using an over-the-row commercial berry harvester to harvest sour cherries. At present, the prevalent mechanical harvesting system was developed in the 1960s and used a trunk shaking mechanism, thereby requiring large trees that limit early yield potential and orchard management efficiency. Studies in other crops have demonstrated that productivity and profitability of are directly correlated with plant density. The current tart cherry mechanical harvesting system consists of a trunk shaker and fruit catching frame that restricts plant density by requiring widely-spaced rows (5 to 7 m) and trees (at least 3 m). This arrangement restricts tree density. The project was initiated to integrate key mechanical, genetic, and horticultural tart cherry production components into a technologically innovative and economically sustainable system suitable for continuous mechanized harvest. In 2008, a pilot project was initiated to examine the feasibility of using a commercial “over-the-row” (OTR) blueberry harvester (Oxbo/Korvan Model 7420 with a dual drum spindle harvest mechanism) for tart cherry harvest. Preliminary results were promising for rapid, continuous harvest of good quality fruit from untrained trees of ‘Montmorency’ as well as several MSU tart cherry breeding selections. More trees and testing was implemented in 2009 using an Oxbo/Korvan 9000. Such an OTR blueberry harvester has been tested commercially in Poland and Serbia, and experimentally in Saskatchewan in recent years. This paper will present preliminary findings regarding the effectiveness of these harvesters and the adjustments in equipment and canopy training to make the system effective and efficient. A new Continuous Harvest Orchards are being developed to accommodate more testing in the future using Montmorency (industry standard) and elite scion selections from the MSU tart cherry breeding program which are compact and more conducive to closer tree spacing.

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