

# Benefits of mechanical grape crop thinning

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Research associate James Taylor talks about the grape yield monitor at the 2013 Lake Erie Grape Summer Grower Conference. Credit: Terry Bates

Concord grape growers in western New York expanded the use of mechanical crop thinning techniques this season to maximize the value of an abundant harvest in what started as an uncertain year. By removing up to one-third of their crops in late July and early August using mechanical grape harvesters, growers met maturity standards and avoided millions of dollars of crop losses.

Farm business management specialist Kevin Martin of Cornell Cooperative Extension's Lake Erie Regional Grape Program (LERGP) estimates that growers in the region will see an overall economic benefit of \$9.6 million to \$15 million in the estimated 50 percent of vineyards that were mechanically thinned this year.

Widespread frost damage in early 2012 reduced the Concord grape crop

by about half and left a surplus of buds going into this year's growing season. The reduced crop also led many growers to retain more buds than normal during pruning in hopes of a better yield in 2013. Ideal weather conditions early this year resulted in increased numbers of larger-than-normal berries that were not going to ripen on overloaded vines.

At least half of the western New York Concord grape growing region was significantly overcropped in 2013, according to LERGP specialists. "Many vineyards were carrying up to 15 tons per acre before thinning," said Luke Haggerty, extension viticulture specialist.

"Managing overcropped Concord vineyards by midseason mechanical thinning is based on a long-term effort by Cornell scientists to understand the relationship between leaf area, sunlight interception, cropping levels and ripening in Concord grapes," said Tim Martinson, senior extension associate in Cornell's Viticulture and Enology Program.

Mechanical thinning in overcropped blocks paid off for growers in several ways. They were able to get their grapes ripe enough to meet processor standards and harvest them earlier in this record crop year. Growers will have healthier vines with adequate reserves to produce a good crop next year. According to Martin, growers who thinned overcropped blocks will also see an uptick in 2014's revenue and possibly beyond.

Many years of field research, dating back to Nelson Shaulis' pioneering work in the 1960s on canopy management, laid the foundation for this practice. Bob Pool continued the work with his studies on "minimal pruning." Over the last 15 years, the techniques for mechanical crop estimation and thinning were honed by horticulture department senior research associate Terry Bates and a team of CCE specialists.

The success of crop thinning can be contributed to the strong

relationships among Bates, CCE specialists and Lake Erie regional [grape growers](#). Through multiyear research projects, Bates and his colleagues have successfully collaborated with extension and industry to distill years of practical research into steps that maximize grower yields while minimizing costs.

Provided by Cornell University

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