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RESEARCH UPDATE

THE TRUE COST OF MECHANIZATION

Oregon State University economist [Dr. Clark Seavert](#) recently completed a study, funded by the Washington State Wine Commission and Erath Family Foundation, comparing the profitability of mechanizing routine vineyard tasks with using hand labor in vineyards of varying sizes. He found that, with only one exception, net cash flow (a measure of profitability) increases when production is mechanized.

Entitled "Developing Economic and Financial Benchmarks for Mechanizing Northwest Vineyards," Clark's study sought to assess the profitability and feasibility of current labor-saving machines and also understand the significance of preserving and enhancing fruit and wine quality while using automation. Breaking this down into discrete project objectives, he wanted to identify the vineyard tasks that would generate the highest return on investment when mechanized. And he aimed to determine, by farm size, the financial requirements to purchase machines and the minimum acreage required to make the investment feasible.

"Everybody says, 'I can't afford to [mechanize]," Clark said. "That's all you hear." But the results of his study prove to him that growers must look beyond the pricetag of expensive equipment when deciding whether they can actually afford mechanization. They must evaluate profitability over time as much as the financial feasibility right now.

Rather than focusing only on how long it takes to pay equipment off, Clark compared projected net returns of tasks over 10 years on case-study vineyards of 20 acres and 40 acres in Oregon and 100 acres and 500 acres in Washington, taking scale and relative impacts into account. To determine profitability, he calculated the net present value of mechanizing each task—that is, the net (or difference) between cash coming in and cash going out over time—10 years in this case.

He found that growers who purchase machines to mechanize common tasks will see savings compared to those who rely on hand labor. Not surprisingly, mechanized harvesting was the clearest winner with profitability of more than \$1,200 per acre per year, whether employed in a vineyard of 500 acres or 40.

Cane pruning was the lone task not suited to mechanization. It was the only example in which net cash flow per acre per year ended up higher when mechanized.

Trying to figure out if mechanization will work for you? As part of this research, Clark has developed an online tool called [AgBiz Logic™](#) with which growers can calculate the economic feasibility of investing in mechanization in their own vineyards. The decision-support tool is offered free of charge, via Oregon State University.

Portions of this story were excerpted from an article in Good Fruit Grower entitled "The Margins of Mechanization," by Ross Courtney, published May 22, 2019.