



# Proper Vineyard Equipment Enables Successful Vineyard Management

By: Gerald Dlubala

**W**hether we're considering leaf pullers, harvesters, sprayers or some other piece of machinery, good vineyard management starts with the right equipment. Properly matched vineyard equipment helps necessary tasks get completed on time, and are crucial to running and maintaining the efficient operation and growing conditions that lead to a successful harvest. Additionally, having the proper vineyard equipment available saves time and money by reducing the number of working hours while contributing to larger, more bountiful harvests and heartier crops.

However, the proper vineyard equipment, (including the amount you're willing to spend on them), can be subjective, so it's always recommended that you research and get the equipment that's best suited for your specific situation.

## Labor And Resource Saving Spray Systems

"The right equipment for your vineyard always comes down to your needs," says Willie Hartman, President and owner of Oregon-based **On Target Spray Systems**, a manufacturer of next-generation electrostatic sprayers. "Your most used, and subsequently, most needed, vineyard equipment indicates how important the task is to you and your vineyard. So, in our case, we ask how important spraying is compared with the other tasks in your vineyard management process."

The answer depends on the amount of time and money spent on spraying throughout the production cycle. A significant issue over the past couple of years, especially on the East Coast, has been



the need for more disease and pest control, and vineyards have increased their spraying to combat these issues. Vineyard managers have been tasked with finding the most efficient way to achieve consistently better coverage with the least cost. On Target electrostatic sprayers can provide just that, leading to better results than standard sprayers.

“Now, more than ever, it’s extremely important that you use a sprayer that provides complete over-all coverage,” said Hartman. “It’s easier to control mildew early on when you’re able to apply spray coverage both over and under leaves while also wrapping around the vines themselves. When you spray with electrostatic sprayers, you’re using less water while saving time and money. A standard sprayer will typically use one hundred gallons per acre sprayed, whereas our electrostatic sprayers will only use twenty gallons over that same area. We can spray ten acres versus a standard sprayer’s two acres using the same two-hundred-gallon tank. That’s an opportunity to immediately reduce your tank fills by 80%. Add in the time lost because of return trips to refill the tanks, and you can see that valuable time can be recovered using electrostatic sprayers. Less overall material to spread means less time spent on the tractor, saving money on fuel and man-hours. By using less water, we concentrate our spray, resulting in less runoff, minimal drift, and improved chemistry coverage. This increased performance is especially important in having the ability to move away from systemic treatments and stay with contact treatments such as those needed in the organic farming industry.”

Along with the extended use available with electrostatic sprayers, Hartman tells *The Grapevine Magazine* that it’s vital to perform an exact application when spraying, so from their largest to smallest sprayers, they all leave the shop with rate controllers.

“The most important maintenance issue for sprayers is rinsing after use,” said Hartman. To make this as easy and economical as possible, his sprayers all have onboard rinsing tanks that are accessible with the flip of a switch. Additionally, all of the components needed for droplet charging in electrostatic spraying are separately enclosed, including liquid,



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“And now, we’re making our sprayers smaller, lighter and even more economical,” says Hartman. “This is great news for smaller growers because our three-point trailed electrostatic sprayers can be used with smaller tractors. A very popular model is our one-hundred-gallon trailer that only requires 20 horsepower to operate. And when you use smaller, less expensive tractors combined with smaller sprayer units, you get the additional benefit of less ground compaction.”

### Multi-Use Equipment For Efficiency And Cost Savings

Bill Reiss, owner of **BDI Machinery Sales Inc.**, has seen it all. So he knows that there’s a lot that goes into the management of a vineyard, including the inherent belief that when it’s all said and done, it’s always the vineyard manager’s personal decision on how best to run their vineyard. Reiss doesn’t want to sell anything that won’t help the vineyard manager improve the land.

“It’s not just about the right equipment, it’s about the equipment that’s available to you,” says Reiss. “The equipment that you want may not be economically feasible if you are a small vineyard. You won’t have the spending money to invest in a lot of specialty equipment, so it’s imperative as a supplier to always be looking for time and labor-saving ways to get things done. Some vineyard equipment may be good in one region but not useful at all in another growing region. Most decisions are made based on the timing of the growing and harvesting

process. There may be tasks that you’re willing to do by hand, but is that going to put you behind on other critical tasks? Can you get it done on time? Are there better ways to get that task done and stay on the critical timeline of your vineyard management?”

Reiss and BDI Machinery stay focused on tools that have multiple, useful functions for vineyard owners. Their leaf pullers come as attachments, hooked onto a frame that can be attached to a tractor.

“The latest trend in leaf pullers has been to use the air impulse pruners,” says Reiss. “A controlled blast of air shatters the leaves away from the plant. These have been around since the nineties, but better technological developments have made them trendy now, especially on the East Coast. Earlier models included a simple fan that used velocity to suck leaves into an impeller blade to be chopped up, and the double drum leaf pullers, still being sold and in use today.”

With additional attachments available that can be attached to the same frame, a single tractor can now be used for hedge clearing, pruning and suckling removal. Once these implements are hooked up to a tractor with hydraulic capacity, they’re controlled with a joystick for safety and comfort.

“Now you’re helping your clients have access to more machinery at less cost,” says Reiss. “They’re only having to buy the attachments that they need for their specific vineyard process. This is good for immediate tasks, but also future planning.

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Additional attachments can be purchased later on an as-needed basis, knowing that they already own the base frame and tractor needed to use them."

Reiss tells *The Grapevine Magazine* that rather than concentrating on one single piece of equipment, BDI is always on the cutting edge of new technology regarding all vineyard machinery. They are continually looking for new ways to be economically and environmentally friendly while creating the ideal tool for grape growers and wineries.

### Whether Large Or Small Operation, Grape Harvesters Save Money And Time

Jesse Willms, Operations Manager, and Duarte Oliveira, Sales and Customer Relations for **Lakeview Vineyard Equipment Inc.**, know the importance of keeping costs down in the vineyard. Anchored in this knowledge is the belief that every vineyard, no matter the size, should look to mechanical harvesting as a way to reduce labor costs and increase the quality of their harvest.

"Mechanical grape harvesters perform great for all grape varieties," says Willms. "Some adjust-

ments need to be made depending on the grape that is going to be harvested because each variety does pick differently and at different stages of ripeness. With the correct setup, modern harvesting machines can provide 100% picking rates and zero loss.

"With the increased potential of finding quality used harvesters, as well as the many choices when buying new, there are reasonable options for all sizes of wineries and growers to take advantage of mechanical harvesting machines," says Oliveira.

However, before choosing a grape harvester, consideration has to be given to a vineyard's unique set up and layout. There are different machines to handle the different growing styles, including Geneva Double Curtain, Smart-Dyson or Vertical Shoot Positioned. The terrain and landscape slope of a vineyard will dictate the need for a two-wheel or four-wheel-drive system. The correct choice of harvester for a vineyard will also be determined by the width of the rows, as there are different sized harvesters made for both wide and narrow spacing needs.

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“Once the size of the grape harvester is determined, look for a harvester with on-board destemming and sorting,” says Willms. “On-board sorting equipment has evolved recently and continues to be a focal point of the mechanical harvesting function. With on-board sorting, you lower the amount of interaction between material other than grapes (MOG) and recently harvested fruit. Just as importantly, the sticks, leaves and stems are left in the vineyard to be worked back into the soil. Providing MOG free grapes with low maceration is the goal, even in challenging post-frost or rotten fruit conditions. Ultimately, with the ability to automatically remove the MOG, you increase the ability to deliver your harvest in a more efficient and timely manner.”

“Adding to their affordability and usefulness factor, harvesters can often be used as over-the-row tractors as well, making them functional for year-round use,” says Oliveira. “The picking head can be removed from the tractor base of the machine and be replaced by different attachments like a pre-pruner, leaf remover or multi-use sprayer.”

Oliveira tells *The Grapevine Magazine* that new developments have shown up in automatic steering and on-board yield mapping as well. The automatic steering is guided by a vineyard’s physical layout and landscape properties, while on-board yield mapping provides the grower with comparative, year-to-year data identifying the parts of the vineyard that are cropping heavier than others. Vineyard managers then use this information to make well-informed decisions about pruning, thinning and fertilizing for the following growing season.

Owning and running a harvester does require a bit of maintenance simply because of the number of moving parts involved, and since harvesting is a time-sensitive task, you don’t want to run the risk of breakdowns. Seasonal maintenance is always recommended, including belt and chain tightening, greasing all bearings and bushings, and annual maintenance of the on-board engine.

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