



Food Industry



Vinewood Acres Picks Eriez® SuperBrute Plate Magnet to Remove Metal Contaminants from Grape Harvest

One of the oldest grape growing regions in the world—and the largest area of grapes east of the Rocky Mountains—is the Lake Erie Concord Grape Belt, a 60-mile narrow ribbon of land spanning from North East, Pennsylvania, to Dunkirk, New York.

This fertile region is home to more than 500 grape growers with about 32,000 acres of grapes, most of which are Concord and Niagara juice grapes. This is where the Welch family launched America's first commercial non-alcoholic fruit beverage industry and today is home to several dozen juice processing plants.

Nestled within this rich area is Vinewood Acres Fruit Farm, which grows and harvests 650 to 700 tons of Concord and Niagara grapes each season and provides a custom harvest operation for several neighboring farms, bringing the total harvest operation to about 1,000 to 1,200 annually. To meet quality control standards from the very beginning of the harvesting process, Vinewood Acres now uses an Eriez® SuperBrute Plate Magnet to improve the removal of magnetic material from the machine-harvested grapes.

"The challenge we faced was to reliably remove all metal from a three-and-a-half inch deep, thirteen-inch wide pile of newly-harvested grapes that were being conveyed through our grape harvesting machine at speeds of three to five miles per hour," says Andrew Putnam, owner of Vinewood Acres. "Eriez designed a thirteen-inch square SuperBrute Rare Earth Magnet and custom mounted to the harvest machine prior to the 2020 grape harvest season. The magnet was produced in August and installed in September as we were getting ready for the upcoming season."

Preventing downstream equipment damage

Founded in 1998, Vinewood Acres employs 10 to 12 seasonal workers during the grape harvesting season, typically from mid-September to late October. The

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National Grape Cooperative—which includes Welch Foods—and Westfield Maid Cooperative are two of Vinewood's largest customers. Both the National Grape Cooperative and Westfield Maid Cooperative operate several juice processing plants in the area.



Eriez SuperBrute Plate Magnet

“The grapes we harvest are delivered to the local processing plants on flat semi-trailers in 23-ton increments and are offloaded at the plants. There, they press and concentrate the grapes into 68-brix grape juice concentrate,” explains Putnam. “Our season can stretch as long as eight to 10 weeks, so we need to be efficient in our harvesting methods and also make sure the grapes from the field are contaminant-free.”

According to Putnam, stray metal can be introduced when harvesting grapes in a vineyard. Contaminant sources often include grape staples that hold the trellis to the grape posts, tools that workers have inadvertently left in the vineyard and metal parts that break loose from harvesting equipment.

“The most damaging effect of undetected metal in harvested grapes is when the imbedded metal flows through the grape receiving equipment at the plant and makes its way into the extraordinarily

expensive grape pressing equipment,” Putnam notes. “Bottom line is the more equipment we have in the field on the grape harvester to remove stray metal, the better the probability that stray metal never reaches the press.”

Magnetic separation increases safety in the field

Another reason aside of product purity that factored into Vinewood’s decision to select the SuperBrute magnet centers on worker safety. Prior to installing the Eriez magnet, the process to locate and remove stray metal relied on a worker riding on a separate harvest wagon which moved down an adjacent row with the grape harvester. As the grapes were conveyed from the harvester to the moving wagon, the worker would visually check for any stray metal and attempt to remove it.

“Having a worker riding on the harvest wagon was a rather serious safety challenge,” Putnam recalls. “Since that approach was not as effective in the consistent removal of metal from the newly-harvested grapes, we began shopping for a rare earth magnet for the grape harvester in the summer of 2020.”

That search led Vinewood to Eriez. “The sales and engineering personnel at Eriez came to the rescue and did a phenomenal job of listening to the requirements for the application and the problem we were trying to solve,” Putnam says. “The custom-made SuperBrute magnet was installed approximately six inches above the grape harvester’s final conveyor belt

upon which all of the harvested fruit flows. Approximately 10 tons of grapes flow over this chute and under the magnet during each hour of the harvest operation.”

Following installation of the SuperBrute magnet, workers at Vinewood Acres noticed a substantial uptick in the amount of metal being discovered and removed during the two-month harvesting season. “We were typically pulling out a one-inch deep pile of metal in a 5-gallon bucket each week with the new Eriez magnet,” Putnam explains.

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“Prior to the magnet, none of our workers ever removed a grape staple from the newly-harvested grapes. The magnet was able to remove those small staples before they had a chance to reach the processing plant,” he says. “Based on the vast and surprising amount of metal now being captured by the Eriez SuperBrute magnet during the past harvest season, I believe that our all our requirements are being met and our expectations are being exceeded.”



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Eriez is recognized as the world authority in separation technologies. The company’s magnetic separation, metal detection, material handling, fluid recycling and advanced flotation technologies have application in the mining, processing, packaging, food, recycling, aggregate, plastics and metalworking industries. Eriez designs, manufactures and markets these products through 13 international subsidiaries located on six continents. For more information, visit www.eriez.com or contact Eriez World Headquarters, 2200 Asbury Road, Erie, PA 16506 USA at +1 814 835-6000 or eriez@eriez.com.

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