



ag management strategies

FIELD REPORT

OAKCREST FARMS

BLUEBERRIES

OVERVIEW

When Lee Rain and its agricultural analytics division Earthtec Solutions approached Carmen Merlino Jr., President of Oakcrest Farms, in 2011 about implementing plant-triggered irrigation methodologies on his Hammonton, NJ blueberry farm, Merlino was initially attracted to the idea mainly as an issue of convenience. Automating irrigation and fertilization in the field furthest from his main facility would save time and effort. For Lee Rain, it was an important opportunity to test and prove its plant-triggered irrigation methodologies could optimize efficiencies and resource use throughout the growing cycle.

The plan was straightforward enough: install remote monitoring instruments in the field and use Earthtec Solutions' Adviroguard® software to analyze the data and turn it into an **Ag Management Strategy** that Merlino could use to improve his operations. The multifaceted sensor technology would gather real-time information from the plants, soil, and environment, providing a more complete and accurate view of how the plants were utilizing resources.

REFINING THE APPROACH

One of the early discoveries of the study revealed that the blueberry type became an important factor for irrigation. In the field, planted with several different varieties of blueberry, it soon became clear that the water needs of one variety of plant were not necessarily the same for another. While one plant required more water to produce good quality berries, the same amount of water on another variety yielded soft berries. The varieties needed to be analyzed separately. It was an important lesson about the dangers of generalizing, even among different varieties of the same species.

Lee Rain is already asking new questions about the growing process. Based on its findings at Oakcrest Farms, Lee Rain is taking a closer look at the factors controlling the overall health of the plant, bud set and plant growth.

Studies like the one at Oakcrest Farms are providing data-driven solutions growers can rely upon to optimize the efficiency of their operations and lead the way to a more productive and prosperous future.

“ The improved quality and size of the blueberry was consistent with each picking, which was good for production —from our packers, to our brokers, from our retailers to our consumers.”

Carmen Merlino, Jr.
Carmen Merlino, III
Oakcrest Farms
3214 Nesco Road
Hammonton, NJ 08037

DISCOVERIES

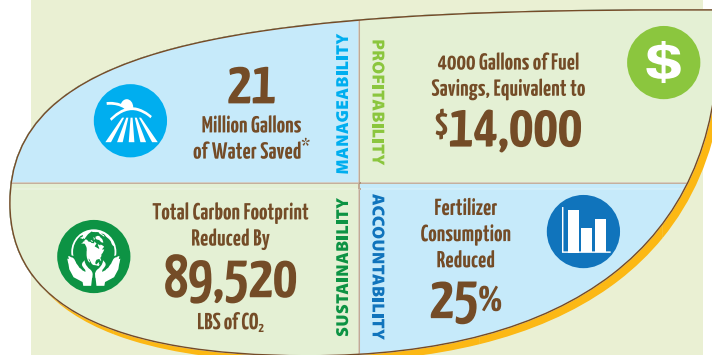
Even the Lee Rain research team, who believed in the promise of plant-triggered methodology in terms of significant water savings and reduced fertilizer consumption (see graphic), was surprised by some of the positive outcomes of the first season of the study.

The biggest surprise was the consistency of the berries from the beginning of the season to the end. Typically, the season runs with larger berries in the beginning to smaller at the end, but when Lee Rain adjusted the irrigation based on the recommendations of the Adviroguard software, the quality and size remained consistent through the entire harvest season.

THE FUTURE

Oakcrest Farms, pleased with the results achieved to date, is looking to expand the use of Earthtec Solutions technology to all of its blueberry fields and further invest in Lee Rain's Ag Management Strategies.

OAKCREST FARMS — OUTCOMES WITH IMPACT



- **MANAGEABILITY.** Using Ag Management Strategies, 21 million gallons of water were given back to the community when compared to data from the USDA Census of Agriculture.*
- **PROFITABILITY.** Giving back 21 million gallons of water reduces energy consumption by 4,000 gallons of fuel = \$14,000.
- **ACCOUNTABILITY.** Ag Management Strategies significantly increased fertilizer use efficiencies, reducing fertilizer usage by 25%.
- **SUSTAINABILITY.** Reducing fuel consumption by 4,000 gallons reduces the carbon footprint by 89,529 lbs of CO₂.



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Ag Management Strategies are driven by the individual objectives of each customer. Results may vary according to a range of factors including, but not limited to, the kind and variety of crop, soil type, and environmental conditions.

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