

CASE STUDY PRECISION AGRICULTURE

Precision irrigation for wine production

Optimized irrigation management for improved grape quality and production

Precision irrigation is an increasingly important management process for high-value crop growers, across the globe. With high demand for both crop quality and yield, along with market volatility of chemical input availability, growers are looking to optimized solutions for irrigation and fertigation processes on their fields.

Verdi developed a modernized solution to irrigation optimization, by developing micro-irrigation management zones to prevent over and underirrigation across a field.

Vineyards are often found on sloping hills, of gravelly mineral rich soils. These soils offer unique profiles of the terroir, but often are lacking in soil moisture retention ability and drain to lower ground.

"Growers are able to gain control of irrigation, and benefit from reduced risk of irrigation induced disease."
Roman Kozak, Verdi



"Sensoterra sensors are built for the field. The sensors are solid, sturdy, and the industrial design is perfect for scalable field application."
Roman Kozak, Verdi Expeditions Inc.

HIGHLIGHTS

In 2022, Verdi saved more than **7,000,000 liters of water with precision irrigation**

PARTNER

Verdi Expeditions Inc.

DATA INTEGRATOR

Smart Farm Control Systems

CONNECTIVITY

The Things Network

Precision irrigation

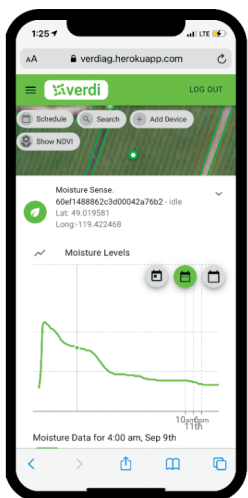
Growers frequently irrigate to maintain plant growth and quality, but without key data insights, this can be a challenge to perfect.

"We often see that the vines are growing over-vigorously, with the fruit being very large, and the suboptimal sugar content too high," explains Roman Kozak, Co-founder & CTO at Verdi.

This would require a reduction of irrigation and fertigation to specific field zones, and a redirection of inputs and irrigation to zones which are too dry, which inhibits plant growth.

By limiting water availability to areas which are over-irrigated, there is a reduction of water waste, and an improvement of fruit quality. Breaking up irrigation from one centralized system to smaller management zones allows growers to monitor and optimize activities on a much more precise level.

"We don't want to give growers more work, having to monitor more irrigation zones, and one of the ways we're combatting this is with basic automation of those additional zones."



Data driven field management

Verdi combines daily satellite with real-time Sensoterra soil moisture data, to provide accurate indications of irrigation requirements and high and low vigour areas on a farm.

"Based on the relative NDBI imaging and soil moisture data we're able to then figure out how much water each zone should get, which greatly reduces the workload of the grower."

Without the data integration, growers would have to set irrigation levels for each zone and take manual measurements, much more frequently.

The complete system is linked to smart valve hardware, which automates irrigation based on the set threshold for each micro-zone.

"We can see when irrigation actions happen and the coordination of the smart valve opening and closing."

This allows for immediate insights for when the system is working correctly, or when troubleshooting is necessary. For instance, when a valve does not open, this could indicate that an irrigation line was broken.

Sensoterra solution

Sensoterra soil moistures integrate seamlessly within third-party systems.

"We wanted a sensor that we could put in the field, and that would immediately collect and send data to be onboarded to our dashboards."

It's a simple, and elegant solution, with growers already seeing significant improvements.

"One of our customers reduced irrigation by 80%. This improved grape quality, resulting in a marketable price increase three-fold of that of the previous season."

Precision irrigation not only gives improved uniformity, quality and vigour of fruit yields, it also reduces the occurrence of powdery mildew, which can spread rapidly in an affected crop.

7 Million liters of water saved

No less, with the data insights and optimized irrigation, Verdi has helped their growers conserve more than 7 million liters of water in 2022.



ABOUT VERDI EXPEDITIONS INC.

Founded in March 2020, Verdi is modernizing farm control systems to customize water and nutrient delivery for every plant. Learn more at www.verdiag.com

ABOUT SENSOTERRA

Sensoterra, established in 2015, with its headquarters in Houten, The Netherlands, develops water management solutions for agriculture & horticulture, smart city management, and water governance. Sensoterra has more than 12,000 sensors in the ground globally, and generates hundreds of thousands of data points for smart water management, daily.

IN PROUD PARTNERSHIP WITH

