




# SENSOTERRA

We make sense of water

## CASE STUDY

# Precision irrigation for wine production

Optimized irrigation management for  
improved grape quality and production

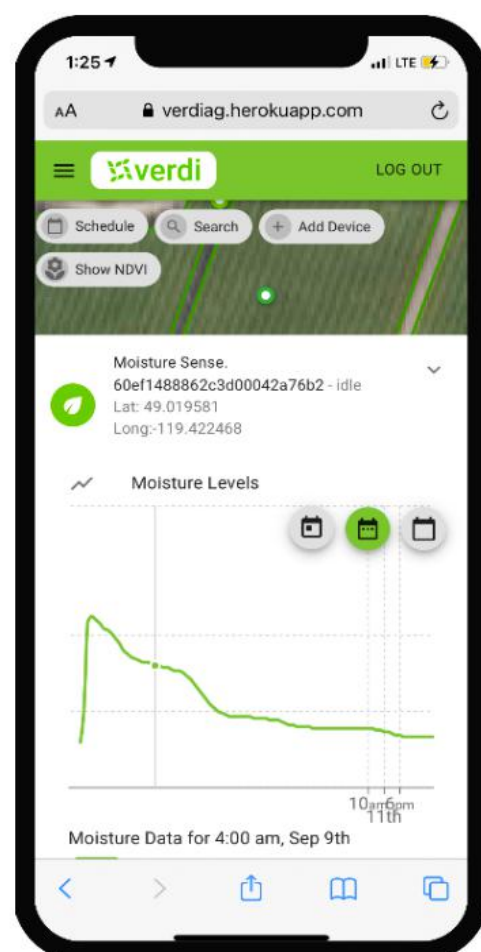


Precision irrigation is an increasingly important management process for high-value crop growers, across the globe. With increased demand for both crop quality and yield, along with the increasing market volatility of chemical input availability, growers are looking to optimized solutions for irrigation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

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

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

*Roman Kozak, Verdi Expeditions Inc.*



## The need for precision irrigation

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 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 sugar content too high,"* explains Roman Kozak, Co-founder & CTO at Verdi Expeditions Inc.

*"This would require a reduction of irrigation and fertigation to specific field zones which are growing too fast, and a redirection of inputs and irrigation to zones which are too dry, inhibiting 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. By breaking up irrigation from one centralized system to smaller management zones, growers can 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 NDBI imagery 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 manually take measurements, much more frequently.

The complete system is linked to Smart Valve hardware, which upon moisture thresholds set for each zone, automate the irrigation system. *"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.

Currently, the system requests permission from the grower to start an irrigation event.

## 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."*

With improved uniformity, consistency of quality and vigour of the vineyard, optimized irrigation also reduced the likelihood of powdery mildew, which can spread rapidly in an affected crop. Helping growers gain control of irrigation, benefits the crop and reduces risks of irrigation induced disease.



*"Sensoterra sensors are built for the field. The sensors are solid, sturdy, and the industrial design is scalable for field application."*

ROMAN KOZAK,  
CO-FOUNDER & CTO VERDI



### 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 [verdiag.com](https://verdiag.com)



Sensoterra, world leader in wireless soil moisture sensor solutions, provides data-driven solutions for optimizing land and freshwater resources for agriculture/horticulture, smart resilient cities, and water governance. Empowering better decision making for land management through smart soil moisture measurements. Sensoterra was founded in 2014 and is based in Utrecht, the Netherlands. Today there are more than 12,000 sensors in the ground, globally.

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