Precision Agriculture on Any Scale
Optimize production and increase yield predictability with wireless sensor networks

Why invest in precision agriculture?

- MAXIMIZE YIELDS for each crop by understanding site specific micro-climates and historical trends.
- MINIMIZE IRRIGATION, and nutrient/pest control with need-based application instead of at fixed intervals
- REDUCE LOSSES, and inform critical harvest timing with real-time environmental condition alerts
- Use for MANY APPLICATIONS including; conventional crop and livestock monitoring, aquaculture, greenhouses, hydroponics, orchards, vineyards, composting, and more

LORD MicroStrain wireless sensor networks:

- Allow CENTRALIZED MONITORING of dispersed crop cultivation, livestock facilities, fields, processing, and storage sites
- MEASURE REAL-TIME environmental conditions such as air/water/soil temperature, humidity, soil moisture and conductivity, solar irradiance, water level, wind metrics, and more
- SCALABLE for any size enterprise
- SIMPLE integration with plug-and-play usability in a complete system from sensing to data analysis
REAL-WORLD APPLICATION:
Vineyard health management with wireless sensor networks and SensorCloud™

Challenge:
Vineyard health management is a complex science, with individual grape varieties exhibiting preferences and sensitivities to a wide range of environmental conditions. In-situ trends in temperature, humidity, light intensity, precipitation, soil moisture, and leaf wetness are all intricately linked in plant health models that inform decisions on usage and timing of irrigation, fertilization, and pest control.

Crop productivity monitoring - Precision agricultural requires understanding soil and micro-climate conditions of dispersed cultivation sites. Using the SensorCloud platform with a scalable wireless sensor network allowed this vineyard to remotely monitor growing conditions and respond accordingly.

Solution:
Since 2011, Shelburne Vineyard has relied on a LORD MicroStrain wireless sensor network and the SensorCloud data aggregation and analysis platform as part of its arsenal for vineyard health management, driving decisions that optimize yield, minimize resource consumption, and allow it to reliably produce high quality and specialty products.

Connect: Shelburne Vineyard deployed wireless environmental sensor networks across multiple sites with varied micro-climates and terrain. Data from each environmental wireless sensor networks is collected by the wireless sensor networks and synchronized with SensorCloud over a cellular link.

Monitor: Vineyard managers set up custom SMS and email alerting that notify staff when critical environmental thresholds have been reached, warranting preventive or pro-active measures. Additionally, certain wines require exact conditions to optimize grape sweetness at harvest. Monitoring temperatures during extremely narrow seasonal windows allows them to produce a consistent and unique product.

Analyze: Using the MathEngine data analytics embedded in SensorCloud, vineyard scientists are able to collaborate with academic colleagues - fine tuning pest risk and soil nutrient models for specific sites and unlocking key insights for optimizing vineyard health.

All solutions are backed by LORD MicroStrain’s world-recognized Support Staff.
For pricing and ordering information, contact LORD MicroStrain Sales: 800.449.3878