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Shaping Lives...
Empowering Communities...

DIFFERENT INSTRUMENTS USED IN GRAPES



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Courtesy of Mark Holler, Camalie Vineyards

Wireless sensors in grape

- Leaf temperature.
- Transpiration loss.
- Soil moisture.
- Disease incidence.
- Air pollution.
- Relative Humidity.



Courtesy of Mark Holler, Camalie Vineyards



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Fruit Canopy sprayers

- **Reduction of pesticides in fruit growing.**
- **Introduction of tree-specific management for inputs and yield.**
- **Dose and place of spraying depend on leaf mass and tree shape.**



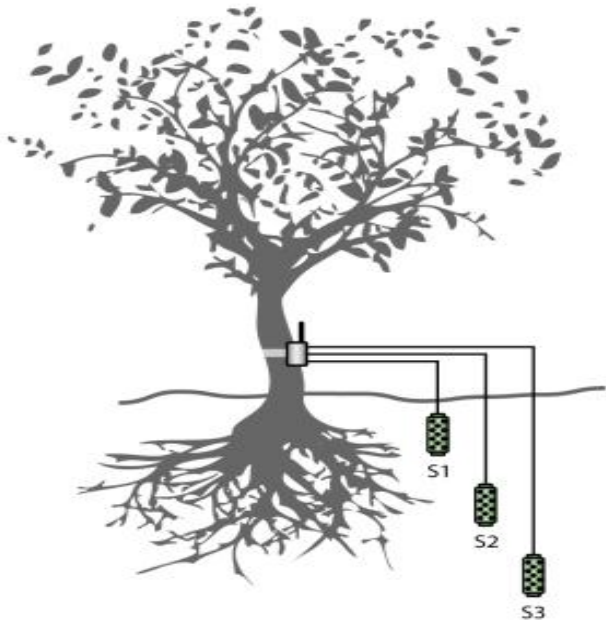


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Agriculture Sensor Board

- Air temperature
- Air humidity
- Soil temperature
- Soil moisture
- Leaf wetness
- Atmospheric pressure
- Solar radiation
- Trunk/stem/fruit diameter
- Wind speed/direction
- Rainfall





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Hydraulic Conductance Flow Meter

- Perform quantitative root and stem analysis without digging roots.
- Analysis of a sample root or shoot is completed in a 10 minutes.



Root Scanner

- Scan living roots in the soil.
- High resolution image of the soil and roots.



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Crop Scout -Field Robot

- Weed and disease detection.
- Navigates autonomically.



Photosynthesis measurer

- Measure Photosynthesis, transpiration, stomatal conduction
- Internal CO₂ concentration.



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Non contact optical sensor

- **Leaf or fruit Auto-fluorescence measurements**



Plant Canopy Imager

- **Capture and analyze images**
- **Consists of an image-capturing probe**



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Nitrogen tester

- **Measures chlorophyll content.**
- **Automatically calculates amount of nitrogen that is needed.**



Dendrometers

- **Measure the growth and size of plant stems and fruits.**



THANKS