

SapIP-SMART Orchard System

Plant Bio-Sensor Monitor



Sap Flow
Soil Moisture
Fruit Growth
IR Temp
Weather

Water Cycle
Plant & Soil Sensors
Provide water status and predictions



Dynamax

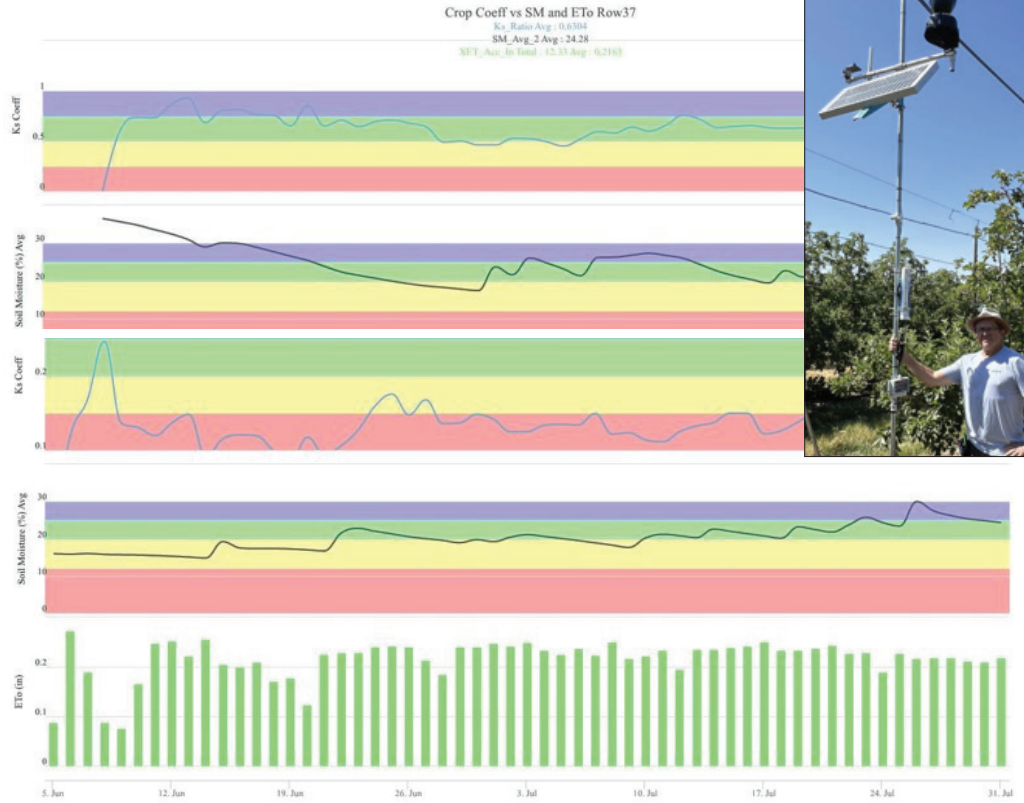
Sap Flow and Weather -ETo ratio Kc and stress Ks

Top chart are the Ks for Row 37 (lower block) is well watered, over 20% SMV during June and July. Ks range average is 0.63.

Middle chart are the Ks for Row 46 which is always stressed due to lack of growth and poor soil moisture application.

SM average is below 20%, with spray emitters (no drip), during June and July. Ks range average is 0.10.

ETo is on the bottom and averages 5.3 mm.



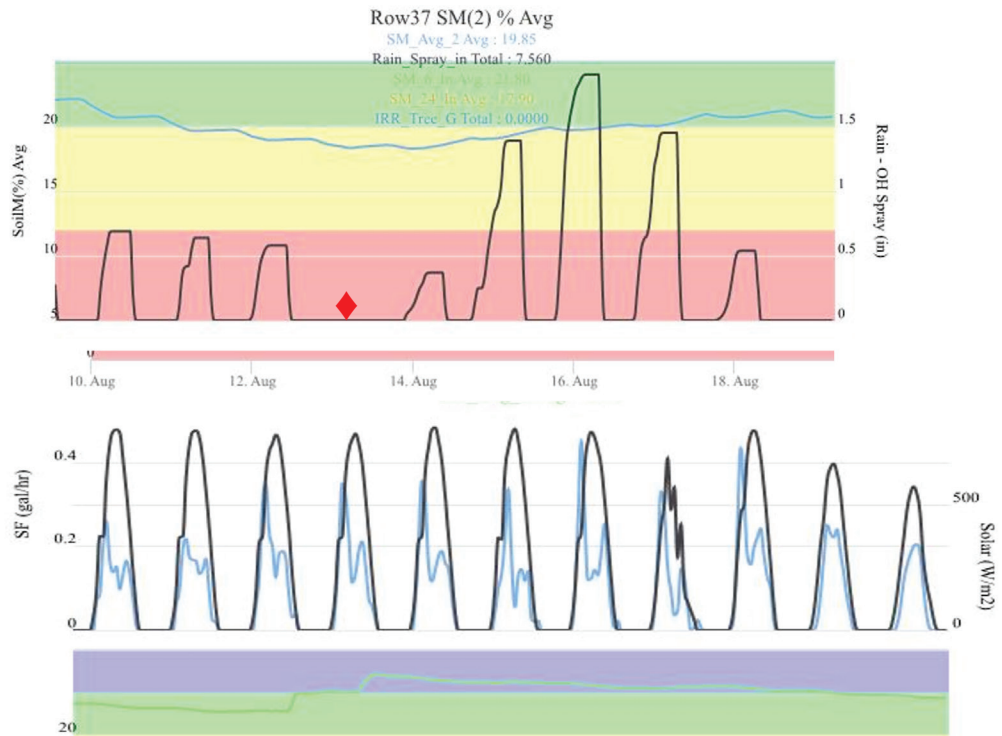
Counteracting stress with misting / no irrigation

As shown VPD increased 15-17th, however more misting was added with temp over 30° C.

Sap Flow already shows signs of temperature stress for example the 13th had no misting, Ks was low. ♦

Misting was 5-6 hrs from 10-12th. On the 15-17th applied ten hrs misting.

Soil is already saturated / or at FC (green line on blue background.)



Fruit Growth with Combined SPIP-CS17 System

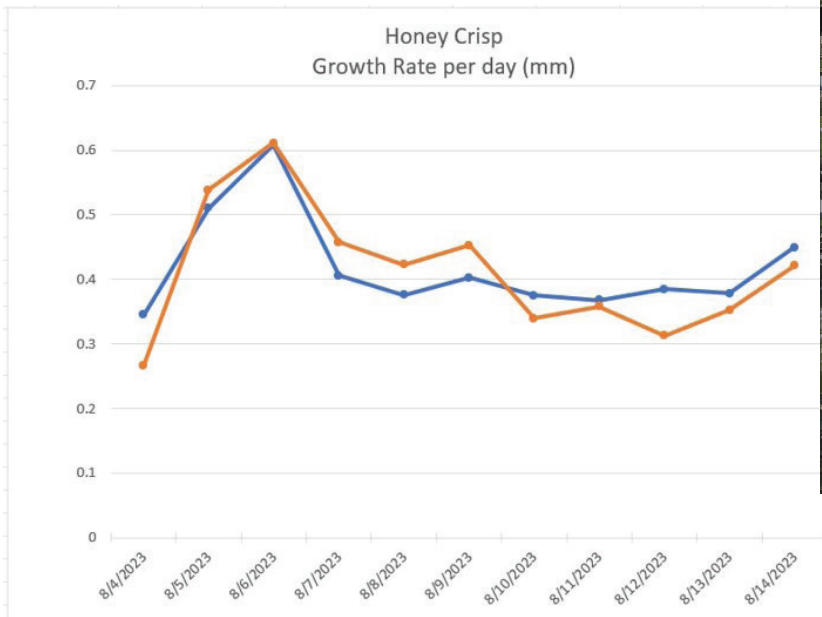
Final analysis is the production and forecast when the apples will reach 75 mm, a minimum target.



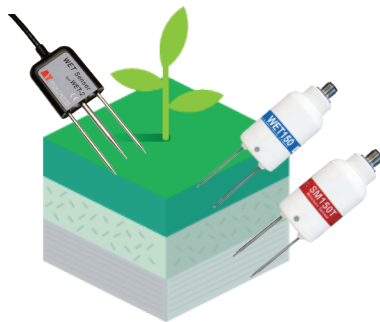
Two Fruit monitored in Row 37, and both agreed within 0.5 mm.

The difference applied into excel to give predictions. Importing to a more advanced Cloud system would yield the same functions.

Based on the growth of 0.41 mm/day, the projected harvest is August 30. At this pace the sugar and color would need to be evaluated.



Sap Flow Sensors



Soil Moisture Sensors



Weather Stations

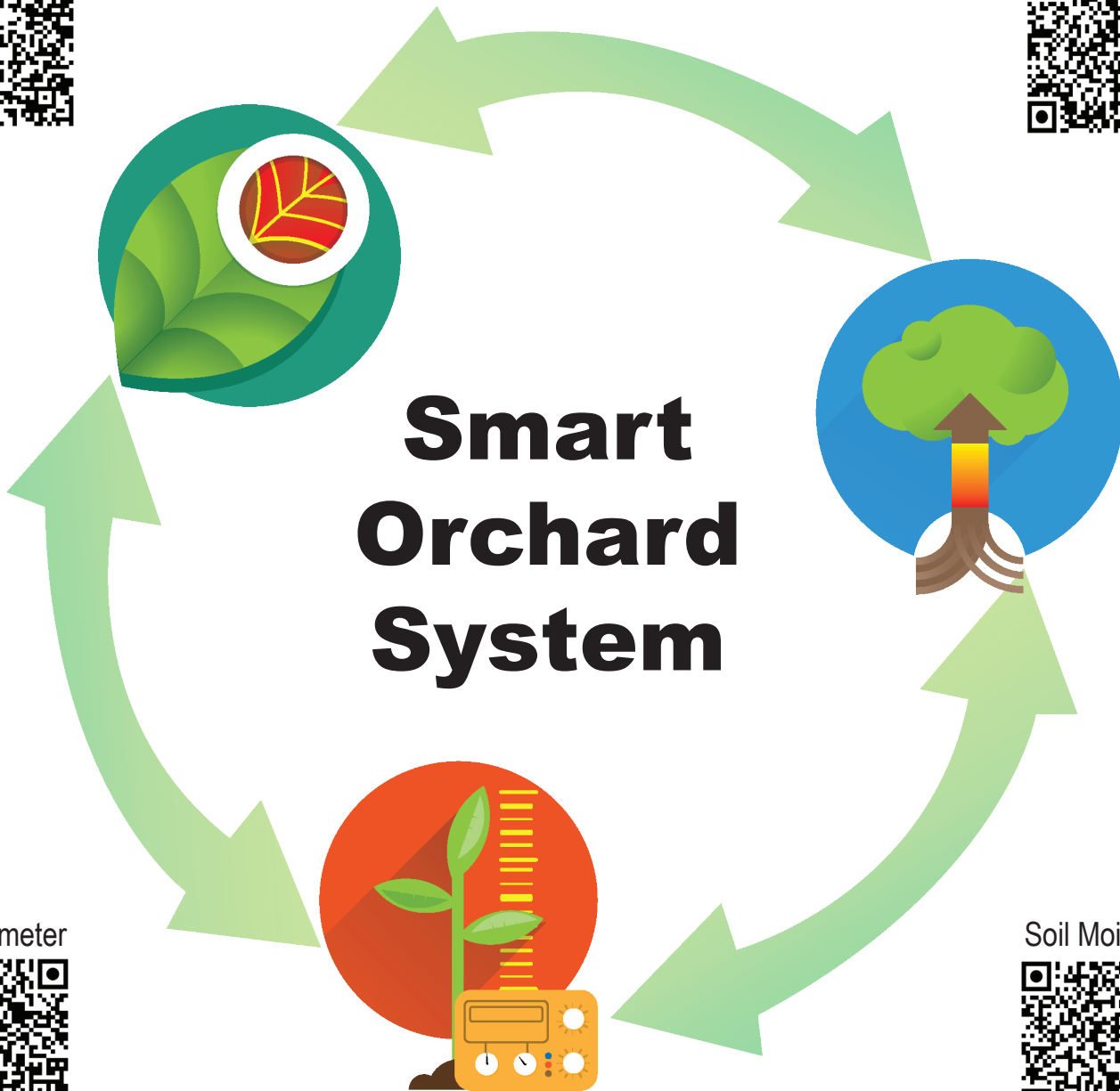


Infrared Temp. Sensors

Grower Services



Sap Flow



Smart Orchard System

Dendrometer



Soil Moisture



Dynamax

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