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Using Smart-Irrigation Apps for Irrigation Scheduling in Citrus

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01

Smart Ag

Using Soil Moisture Sensors

02

Irrigmonitor

Who can use this smart irrigation system?

03

How to use the graphs for irrigation management?

Or verify it is correctly installed

04

How to interpret readings

What else is required to make a decision

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Citrus App

This app is designed to help citrus producers in Florida, USA to generate irrigation schedule recommendations based on real-time weather and short-term forecast to better meet water needs of a given period, conserving water while also minimizing nutrient leaching from the root zone due to excessive irrigation.

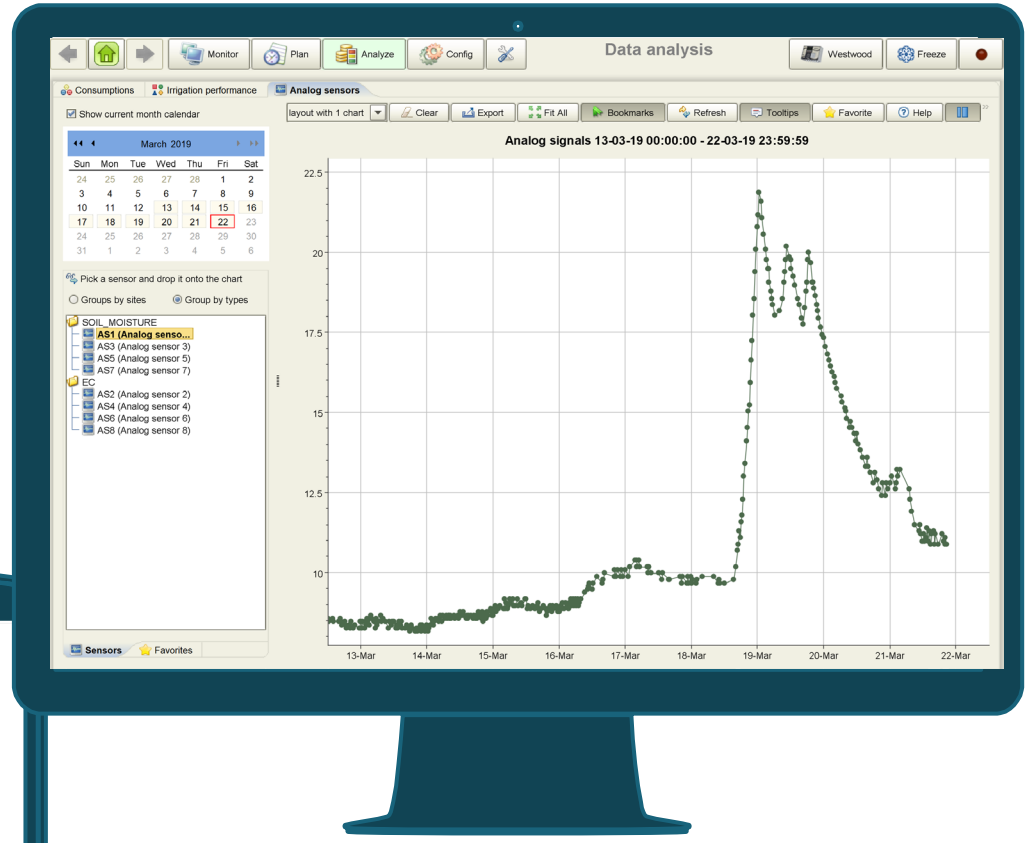
Producers can register fields in the app and receive notifications regarding irrigation schedule changes due to differences in the expected evapotranspiration for the next few days.

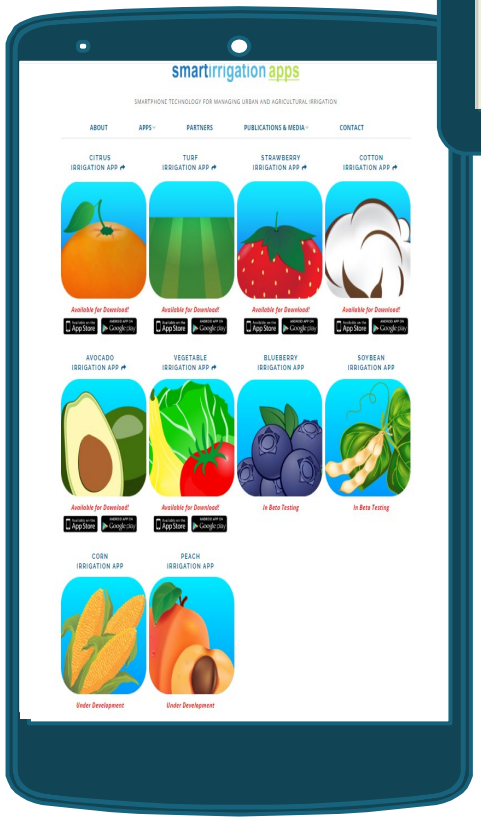
Download on the App Store

GET IT ON Google Play

https://smartirrigationapps.org/citrus-app/

https://fawn.ifas.ufl.edu/tools/irrigation/citrus/scheduler/





Smart Irrigation allows automatic water management in the field

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Irrigmonitor: An Irrigation Manager for your Orchard

1

Users with sensors in the field but not telemetry systems

Users that want a centralized system to manage multiple sensors

2

Users wanting to personalize their irrigation schedule

We add recommendations based on each field

3

Users looking for more technical assistance

With personalized displays the user can select the most appropriate features for scheduling

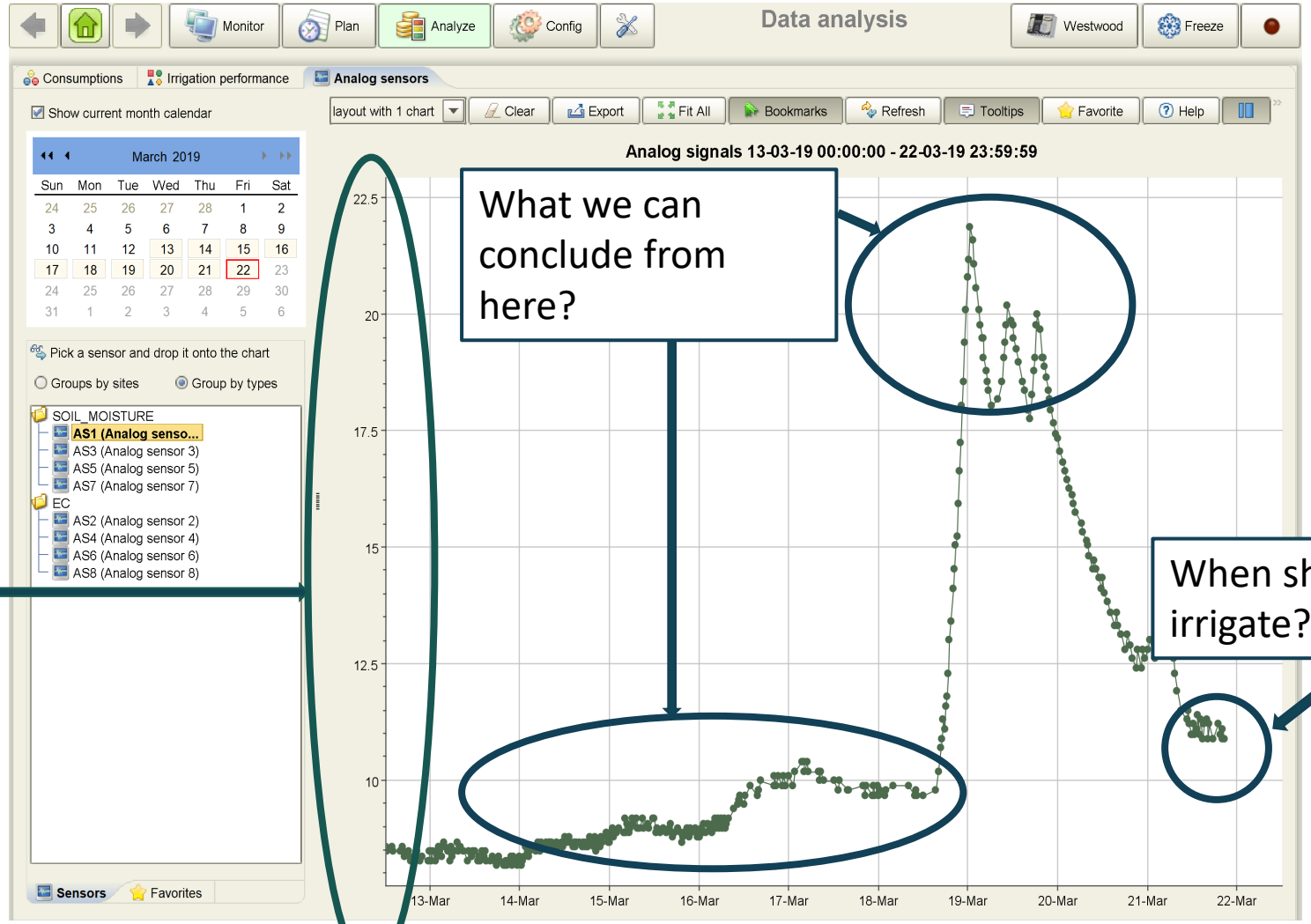
4

Users with sensors that have not a data visualization software

We can connect any SDI-12 sensor

Find us on YouTube: ***Cropmonitor UF*** https://www.youtube.com/watch?v=qOhfxNQ9BkQ

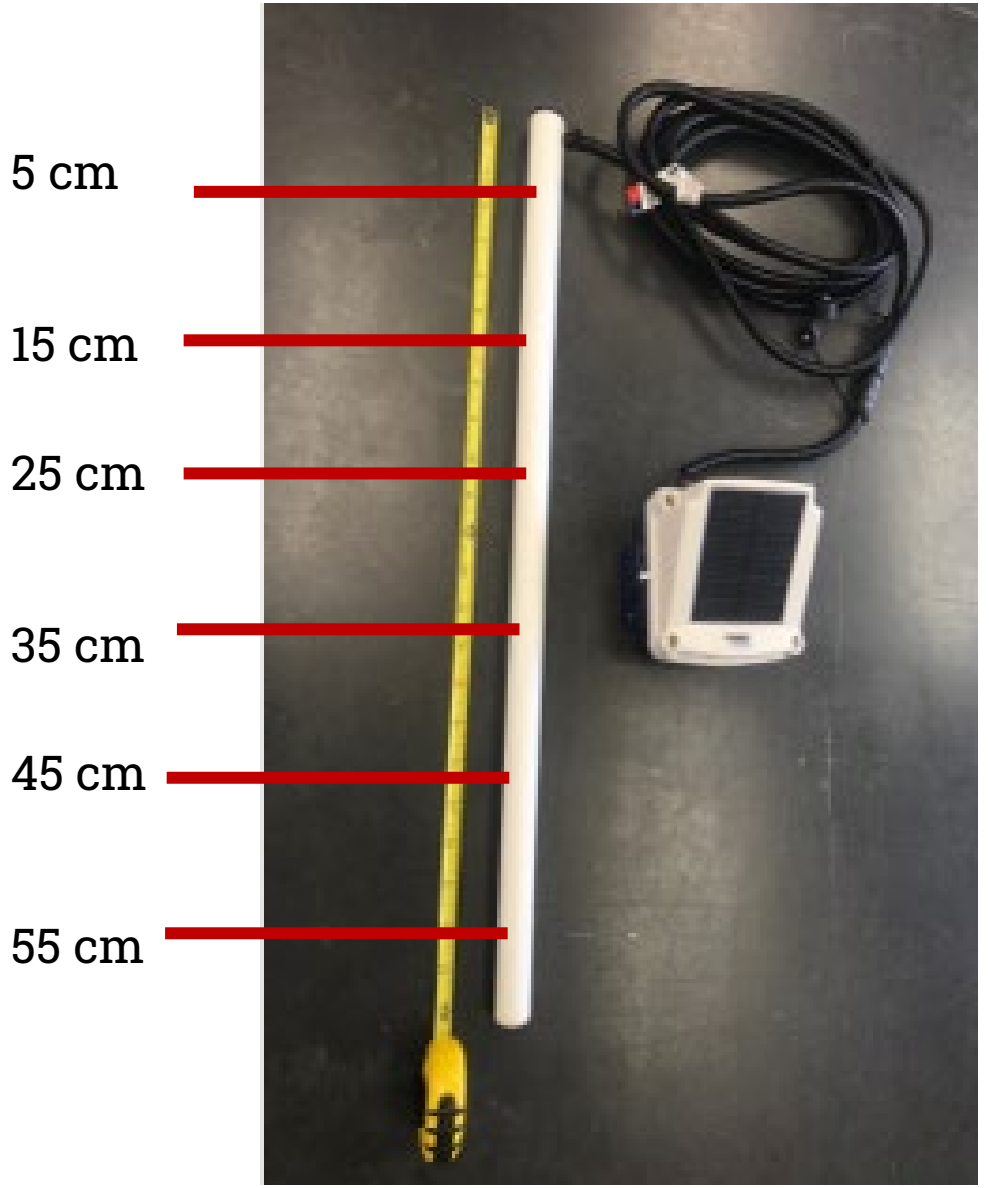
Location: St. Lucie county FL
Soil: Riviera fine sand
Crop: citrus (orange)
Irrigation system:
Microsprinkler, 7.7 GPH, 360°,10.5 feet Diameter

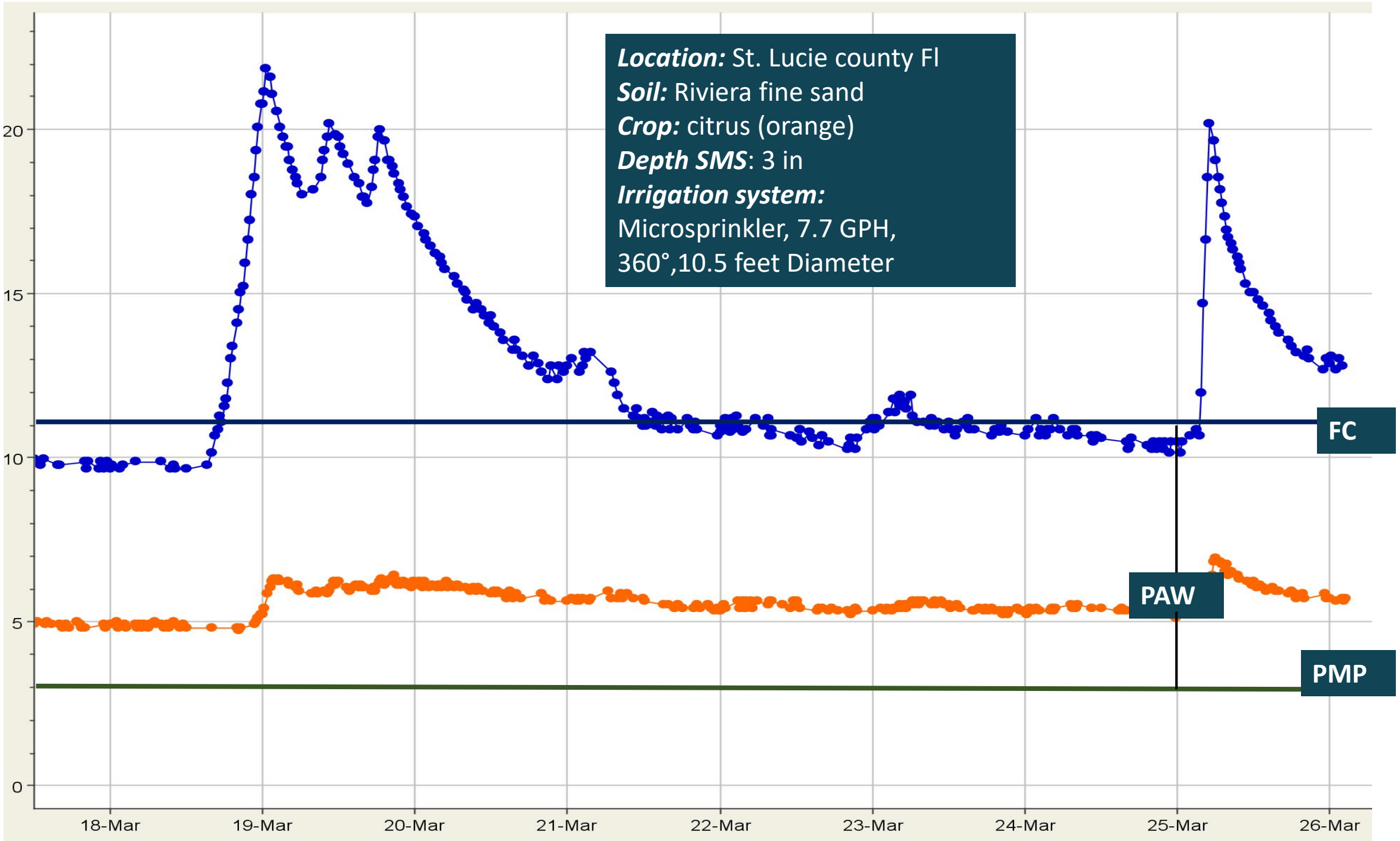


This is soil moisture but what it means?

Data Required to set irrigation schedules with SMS data

- Minimum information required to set irrigation timing:
  - Field capacity
  - Root depth
  - Permanent wilting point
- Other important information
  - Weather (Pr, SR, T°)
  - Irrigation system conditions



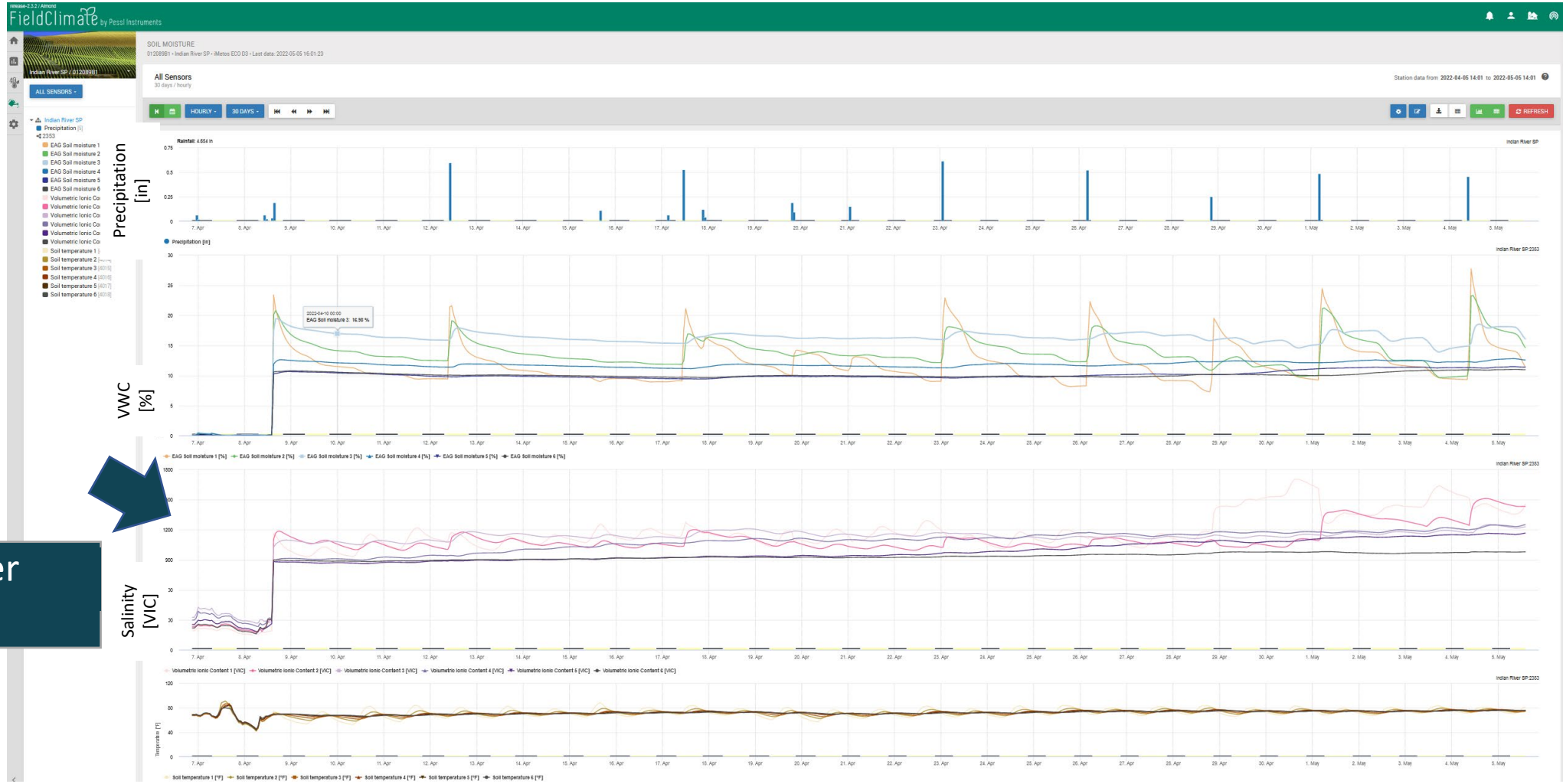

Location: St. Lucie county Fl
Soil: Riviera fine sand
Crop: citrus (orange)
Depth SMS: 3 in
Irrigation system:
Microsprinkler, 7.7 GPH,
360°,10.5 feet Diameter
FC
PAW
PMP
20
15
10
5
0
18-Mar
19-Mar
20-Mar
21-Mar
22-Mar
23-Mar
24-Mar
25-Mar
26-Mar

Soil moisture probe display

Display of SMS values per sensor in inches (2,6,10,14,18,22”)

Color-based display to show irrigation thresholds

Electrical Conductivity- Volumetric Ion Content – Salinity



1

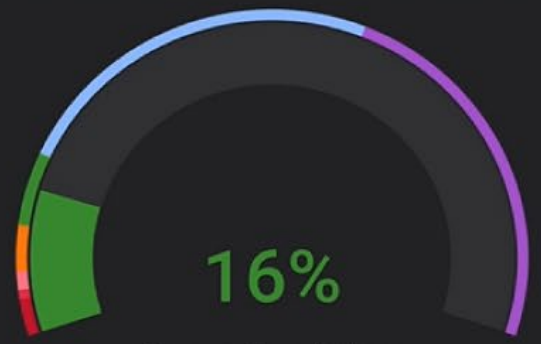
Display VIC values per sensor

Find us on YouTube: ***Cropmonitor UF*** https://www.youtube.com/watch?v=qOhfxNQ9BkQ

Let's practice:

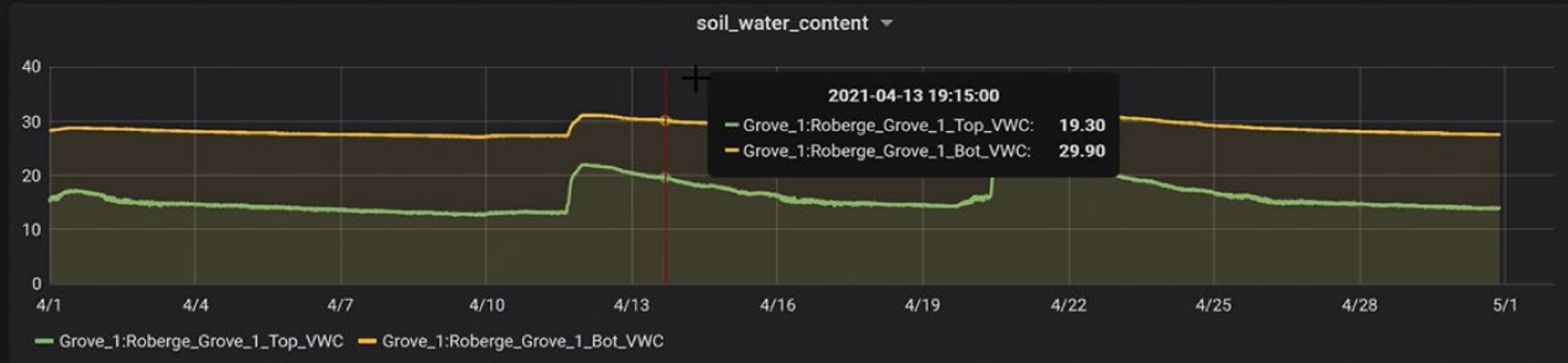
1. Using the displays how much water should be applied ?
2. Can we use soil moisture displays with manual irrigation? what about automated?
3. Can we use the VIC- EC data?

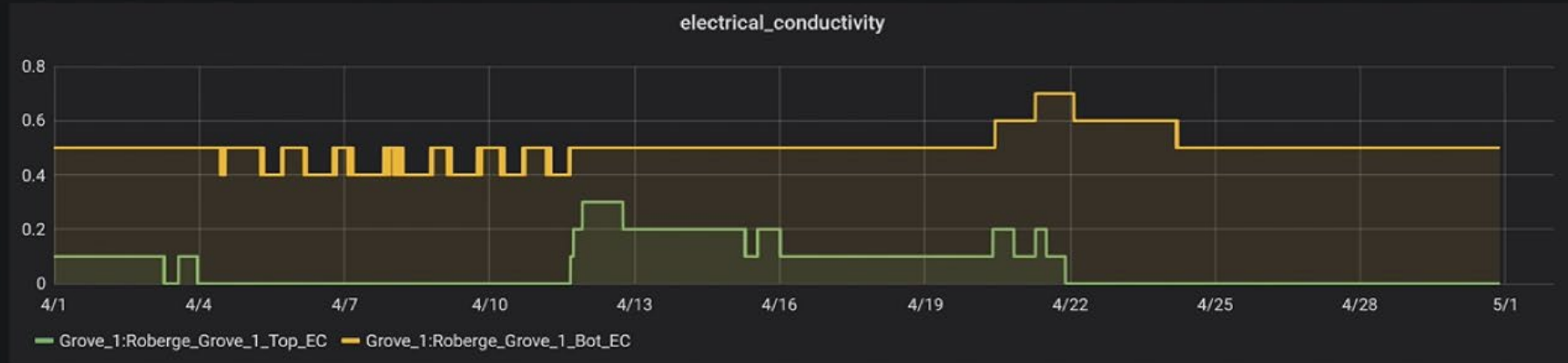
IrrigMonitor

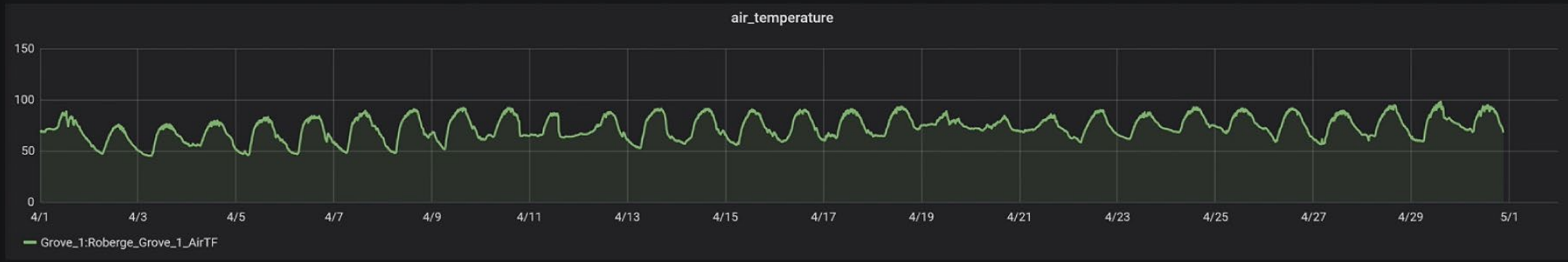


Top soil moisture

Bottom soil moisture







More information:

- **Common Questions When Using Soil Moisture Sensors for Citrus and Other Fruit Trees** https://edis.ifas.ufl.edu/publication/AE551
- **Soil Moisture Sensor Q/A:** https://citrusindustry.net/2021/04/12/soil-moisture-sensor-qa/
- **Minimum Number of Soil Moisture Sensors for Monitoring and Irrigation Purposes:** https://edis.ifas.ufl.edu/hs1222
- **Calibrating Time Domain Reflectometers for Soil Moisture Measurements in Sandy Soils** http://edis.ifas.ufl.edu/ae519
- **Automatic Irrigation Based on Soil Moisture for Vegetable Crops:** https://edis.ifas.ufl.edu/ae354
- **Citrus Irrigation Management:** http://edis.ifas.ufl.edu/ss660

Thank you
Questions?

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