Open Data Challenge
The GROW Observatory

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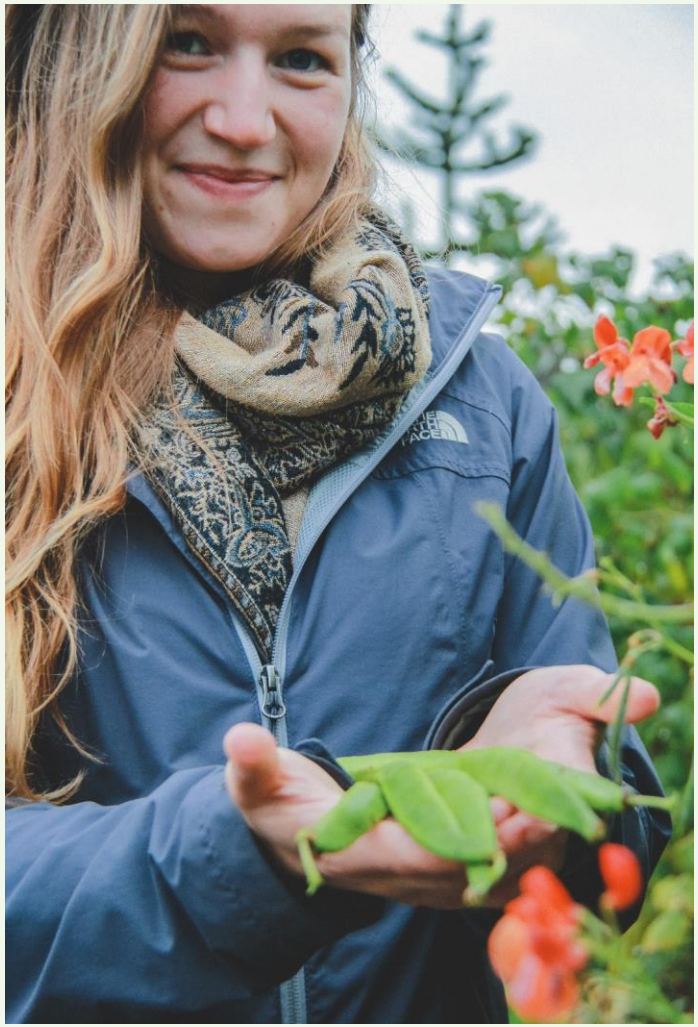
GROW OBSERVATORY

This project received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 690199.



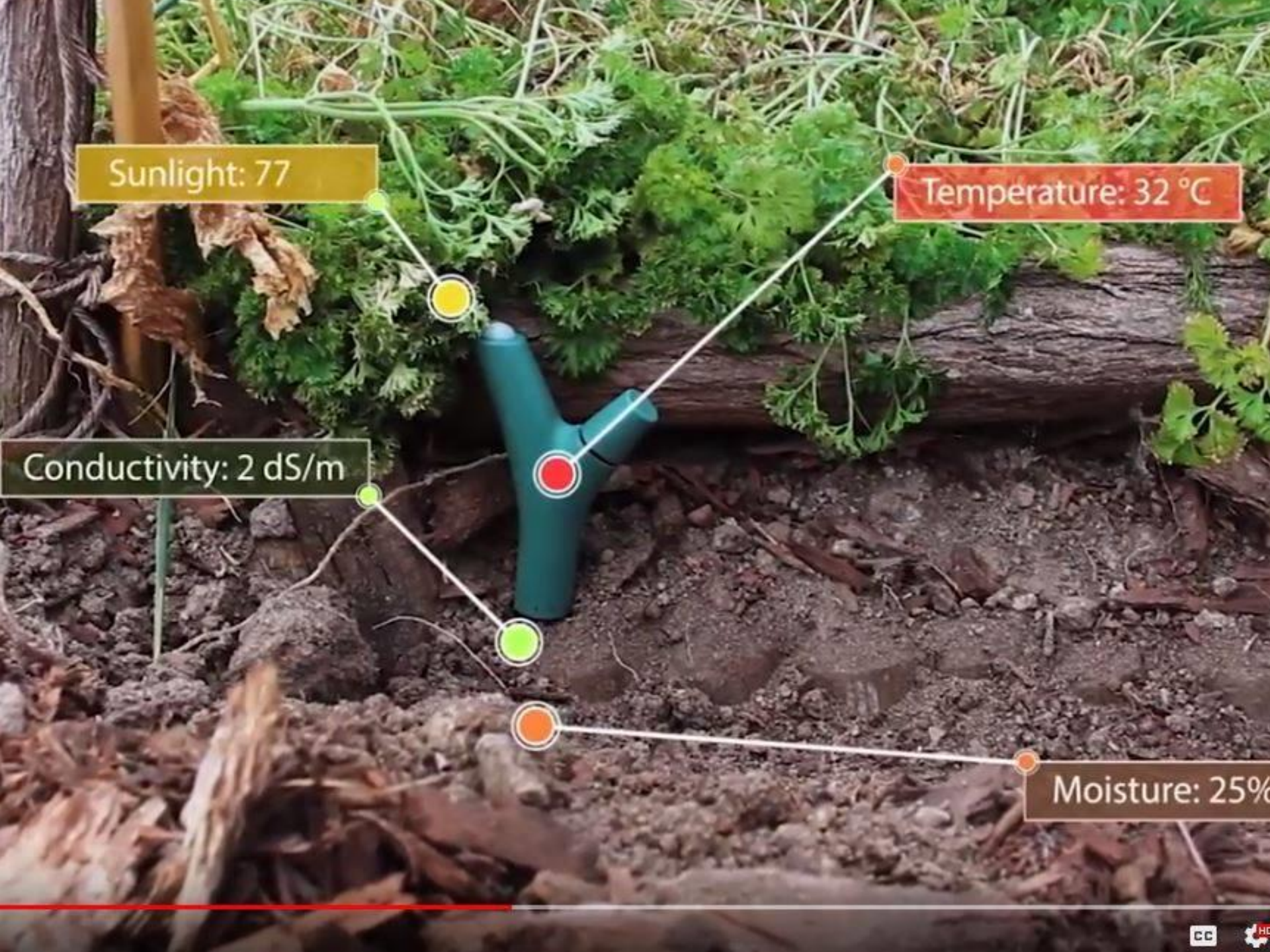
The GROW Observatory

To support a movement of citizens generating, sharing and using data and information on **soil, growing and land practices**.

To address urgent climate challenges for science and society.

Background / Soil Moisture

- Soil moisture is a pivotal element regulating water, energy and carbon fluxes
- Key for land use and food production
- Monitoring soil moisture is challenging because of its high spatial and temporal variability
- In the last decades, microwave sensors onboard satellites have proven capable to estimate soil moisture globally

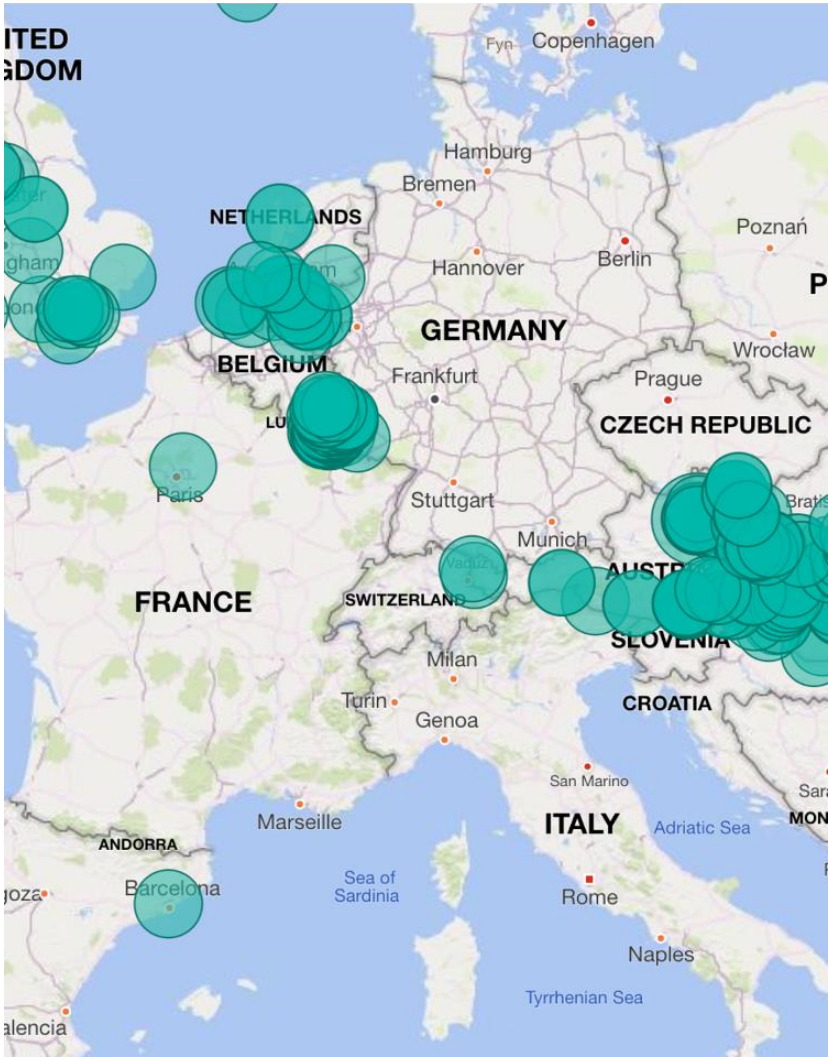

Sunlight: 77
Temperature: 32 °C
Conductivity: 2 dS/m
Moisture: 25%

GROW / Soil Moisture Data

6502 sensors in the ground (2019)

- 24 geographic dispersed GROW places
- Over 500 million rows in the GROW database.
- 4 Parameters: Soil Moisture, Temperature, Light Level, Battery Level
- Time Span: Oct 2016 - Nov 2019

https://growobservatory.org/grow-observatory-sensor-location-map/



GROW / Soil Moisture Data

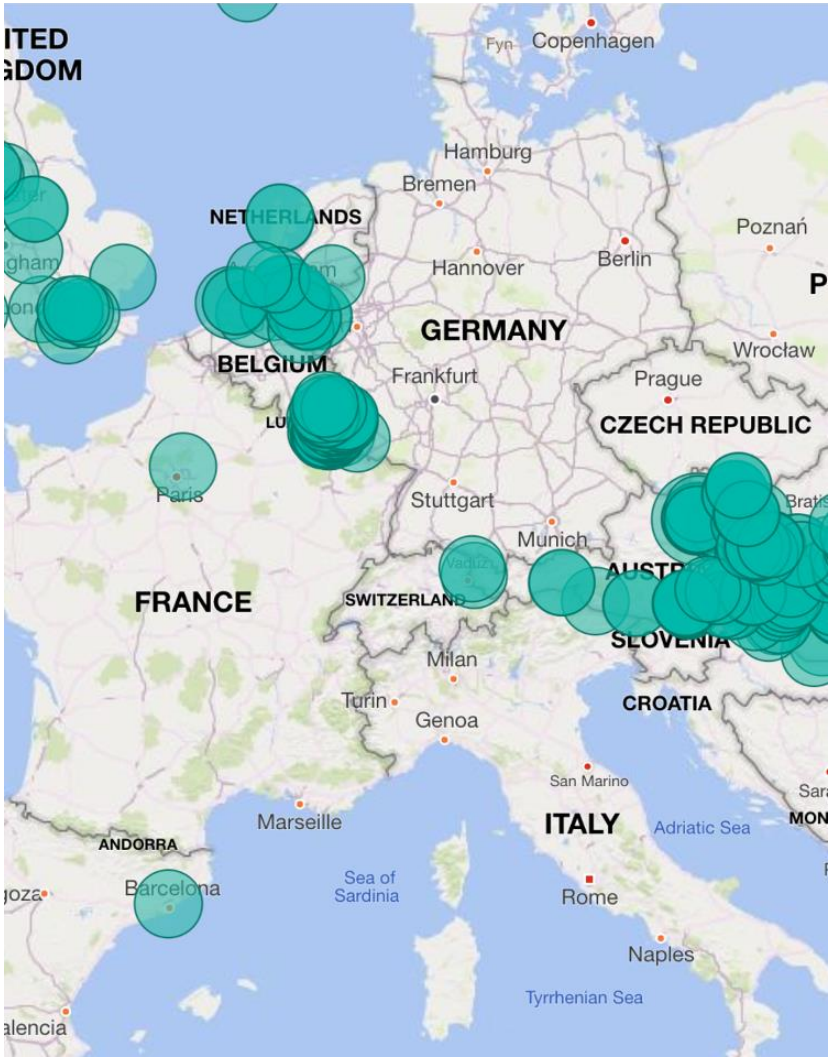
Overall datasets are 14.4 GByte.

You can not view it in Access

It is not normalized so will shrink if done so

Best results if transferred to a Database

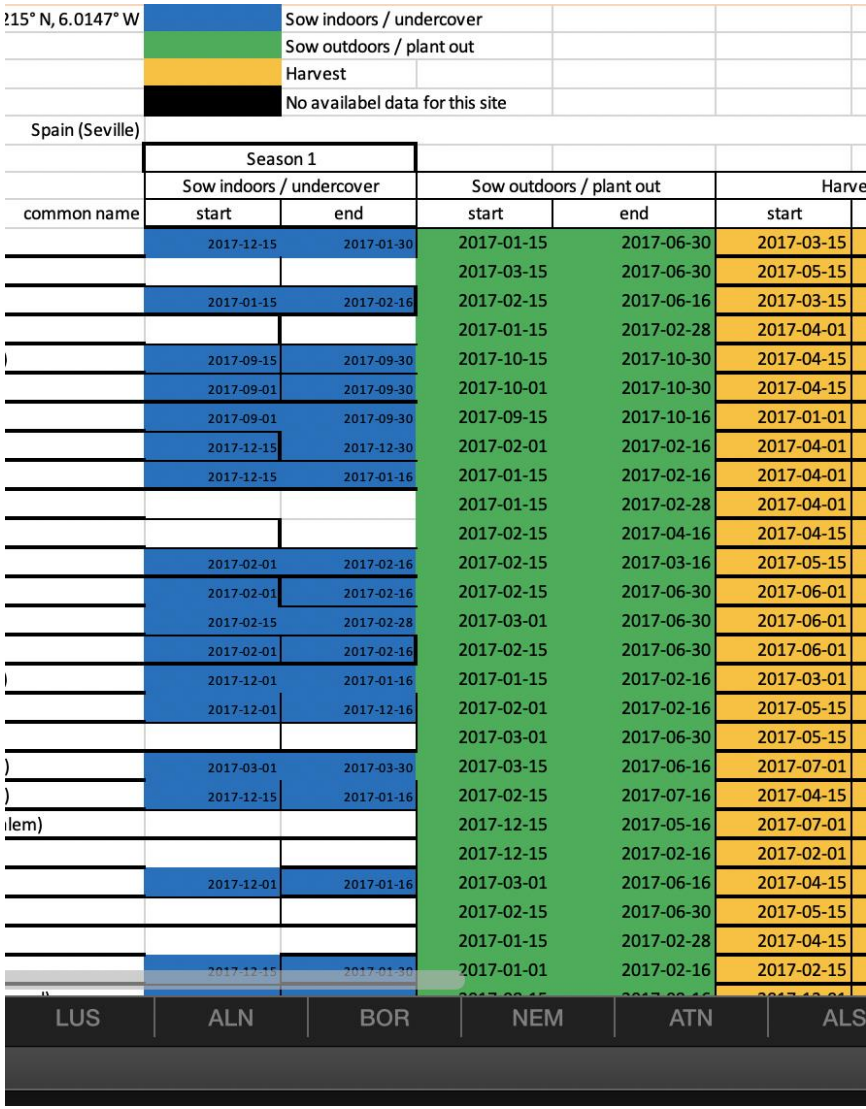
Can be viewed from the command line



GROW / Edible Plant Database

Overview

- 146 edible plant species
- 15 growing parameters
- 12 European climate zones
- Data includes:
  - Planting dates,
  - Harvesting dates,
  - Two planting date seasons for Spain, France and Greece
  - Dates for indoors or outdoors



GROW / Edible Plant Database

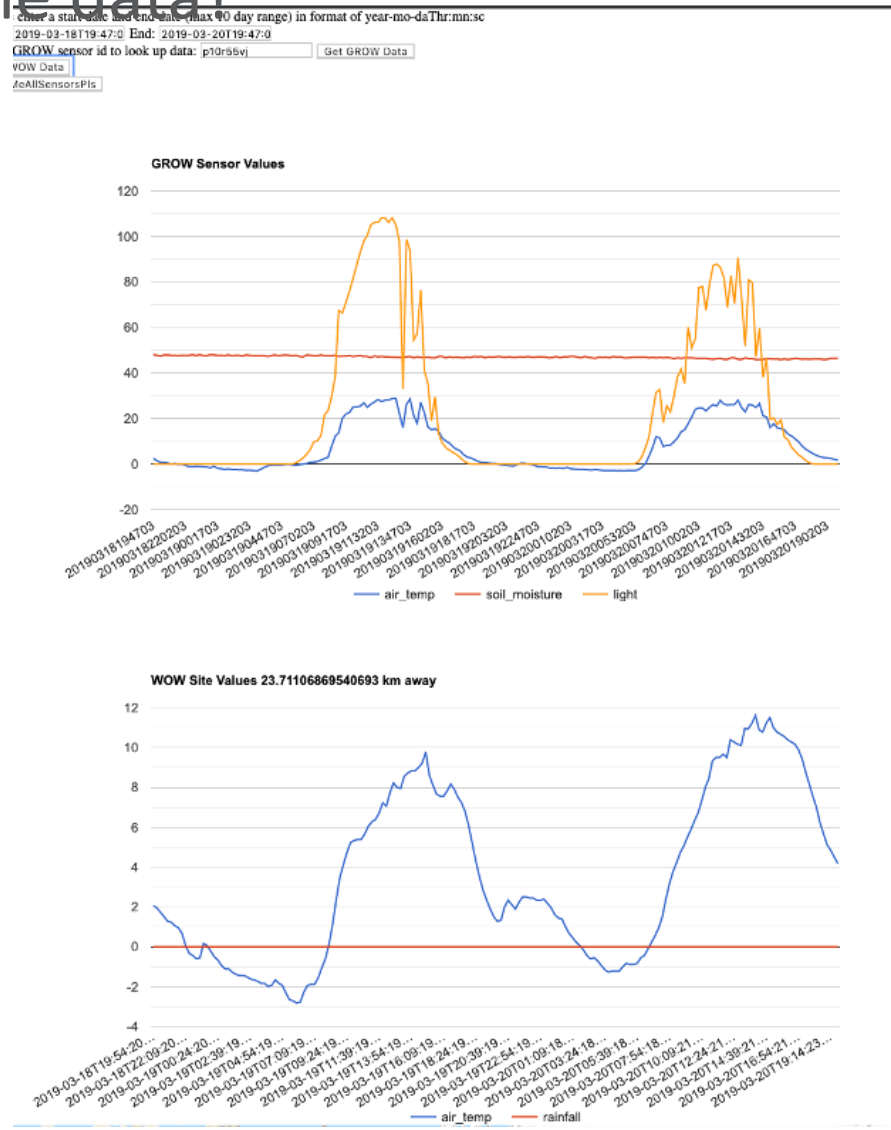
Using the data

- Data about the plants is in access database
  - Can be viewed in access
  - Or a Viewer on a Mac
- Planting dates are in an Excel spreadsheet
  - Can be viewed in Excel or Numbers.
  - Multi-tabbed. One tab per climate zone.
- Data may need to be extracted for your purposes

GROW / What Can I do with the data?

Soil Moisture

- It is a static data set
- In this picture we have combined soil moisture and rainfall
- Combine it with other data:
  - Air quality
  - Land cover



GROW / What Can I do with the data?

Edible Plant Data

- Static dataset

- Can be used standalone to answer questions such as:
  - ”What can I plant today”
  - “When will the harvest be ready?”

- Can be combined with other data

- Weather data and the EDP
  - There is a frost coming, cover your crop
  - We’ve not had rain for days, you might need to water your crop.

THANK YOU!

Any Questions?

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