Analyzing Data to Characterize Onion Decay

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Problem

Farmers experience rot in their field of onions that may be able to be prevented with phenomics
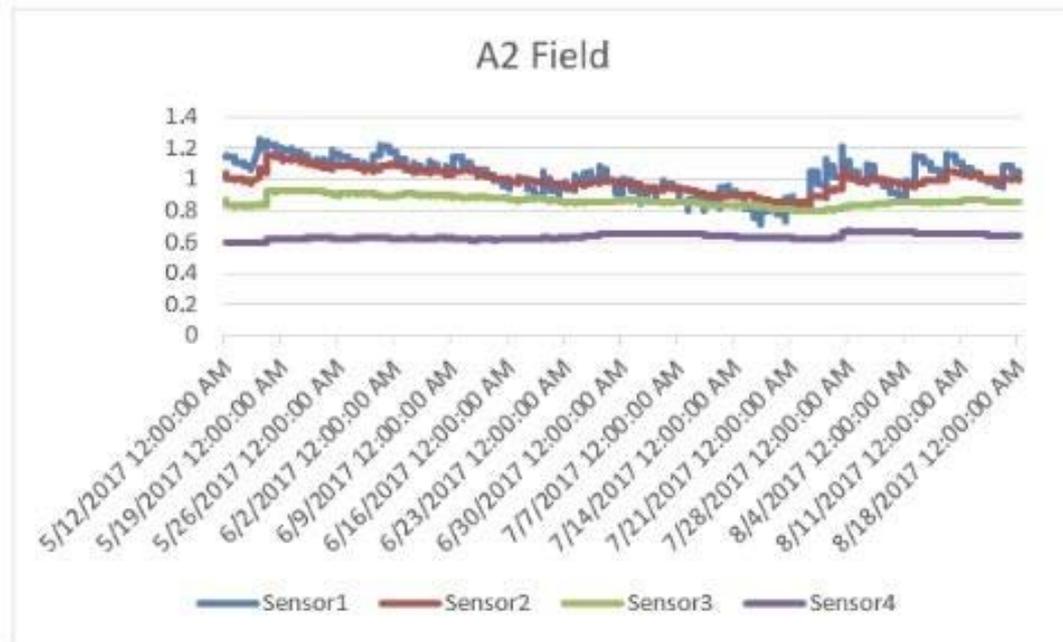
Hypothesis:

1. Soil variables such as soil moisture have a role to play in the onion rot on the field,
2. Such a role could vary by field as influenced by irrigation practices on the field.

Sensor 1	Top soil
Sensor 2	Close to top
Sensor 3	Closer to bottom
Sensor 4	Deep soil
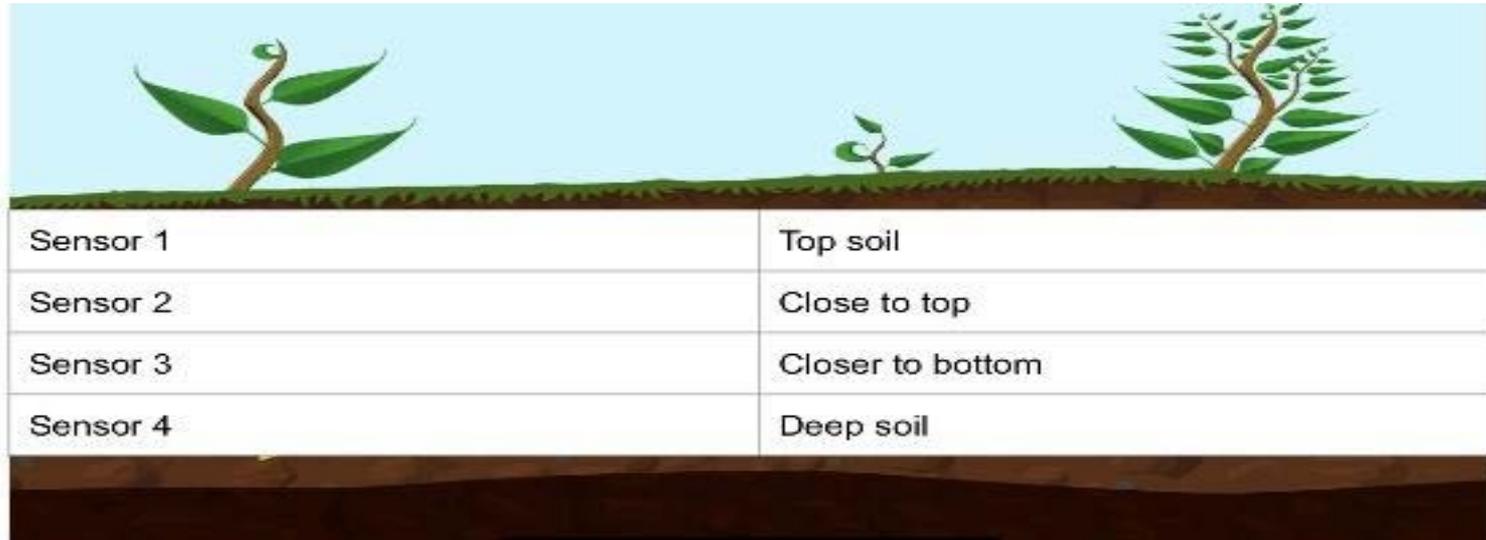
Results of Data Analysis
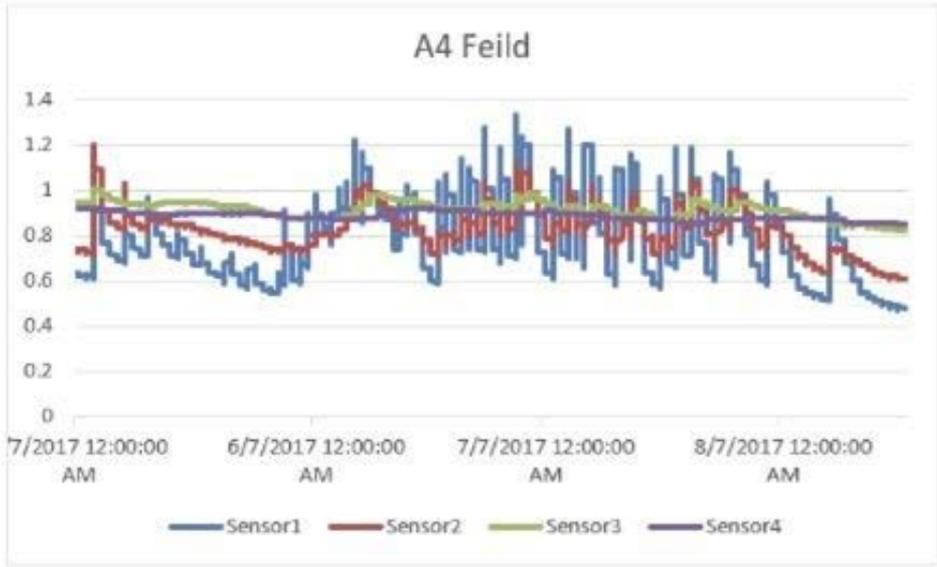

Field 2

A2 Field

BEST

Round 1500

1.9% decayed outside
3.2% decayed inside

Results of Data Analysis

Field 4

A4 Feild

WORST

Total under 1000

11% decayed outside

24% decayed inside

Future

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Soil moisture may have a large correlation for onion decay.

:

Lack of samples of rot and needing more and different fields data; But usually farmers are hesitant to do give data making it hard to get larger samples.

Coding on Linux

Taking data from text files and reorganizing

Field trips

Apple and cherry field trip had data logging of every Apple to sort into price ranges

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FACT: Research Experience for Undergraduates on Phenomics Big
Data Management

USDA

United States Department of Agriculture
National Institute of Food and Agriculture

Thank you!