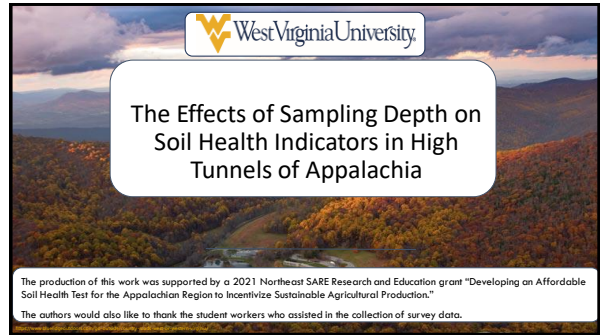
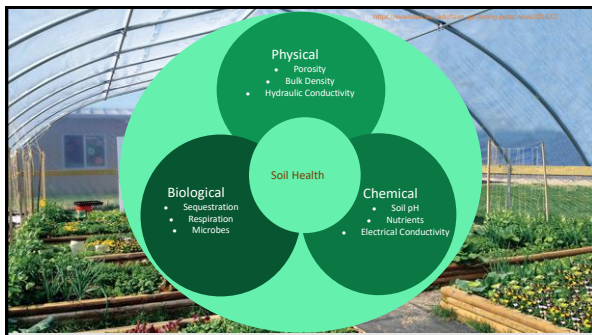


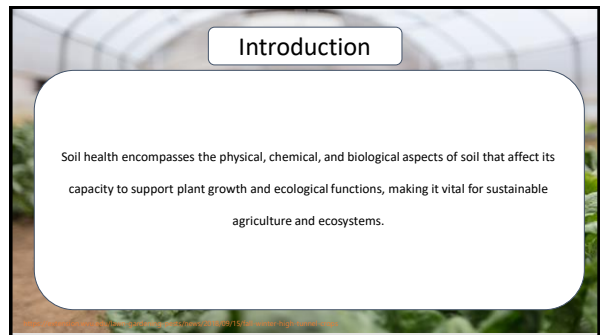
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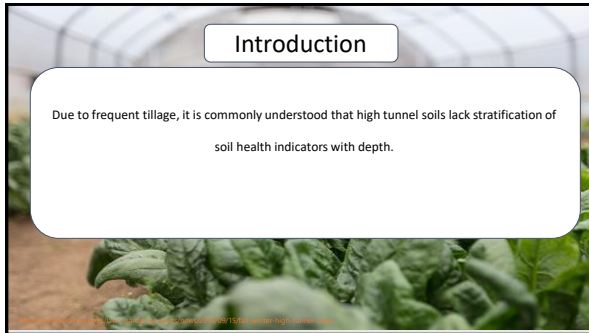
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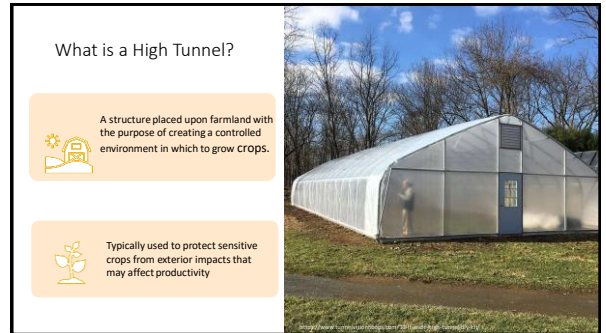
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Introduction

Due to frequent tillage, it is commonly understood that high tunnel soils lack stratification of soil health indicators with depth.

5

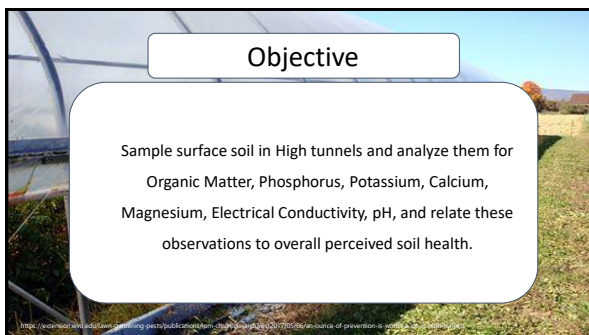


What is a High Tunnel?

A structure placed upon farmland with the purpose of creating a controlled environment in which to grow crops.

Typically used to protect sensitive crops from exterior impacts that may affect productivity

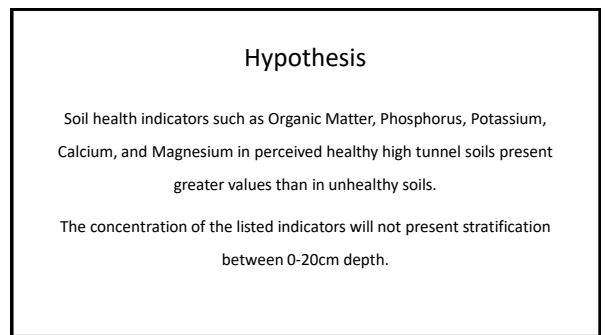
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Objective

Sample surface soil in High tunnels and analyze them for Organic Matter, Phosphorus, Potassium, Calcium, Magnesium, Electrical Conductivity, pH, and relate these observations to overall perceived soil health.

7



Hypothesis

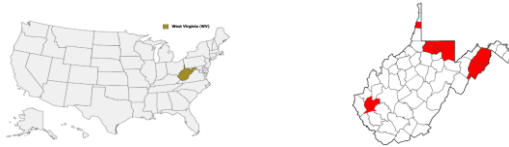
Soil health indicators such as Organic Matter, Phosphorus, Potassium, Calcium, and Magnesium in perceived healthy high tunnel soils present greater values than in unhealthy soils.

The concentration of the listed indicators will not present stratification between 0-20cm depth.

8

Materials and Methods

- Samples were taken at four differing depths from 0-20 centimeters using soil probes
- Sampled from high tunnel farms in West Virginia



9

Materials and Methods

- **Sampling:** High tunnels based on Health Perception (6HT, 96 samples)
 - Stratified sampling 0-20 cm in 5 cm increment (composite sample 7 pt)
- **Sample Analysis:**
 1. Available Nutrients (Mehlich 3)
 2. pH and EC 1:1 water
 2. Organic Matter Loss by Ignition
- **Stats Analysis:**
 - Analysis of Variance (factors: Soil Depth (4 levels) and Soil Health (2 levels))
 - Mean separation (t Tests (LSD), Alpha 0.1)

10

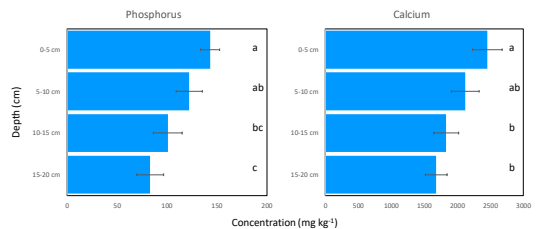
Results



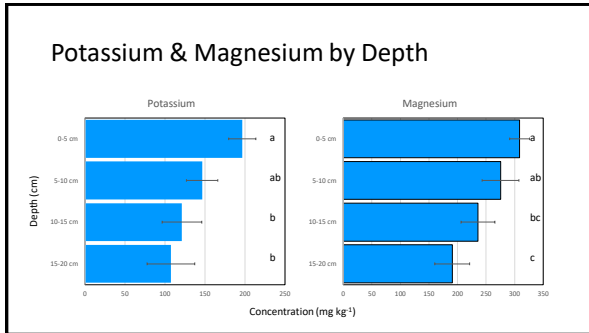
- The data collected show stratification with depth as soon as a two months post-tillage.

11

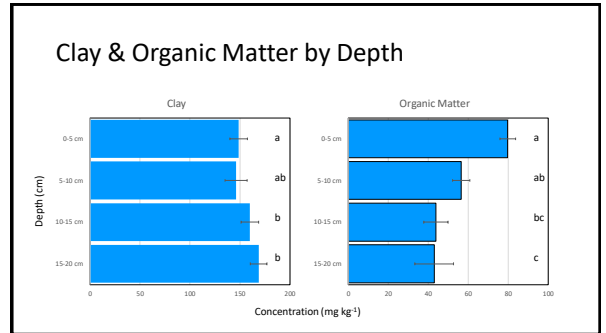
Phosphorus & Calcium by Depth



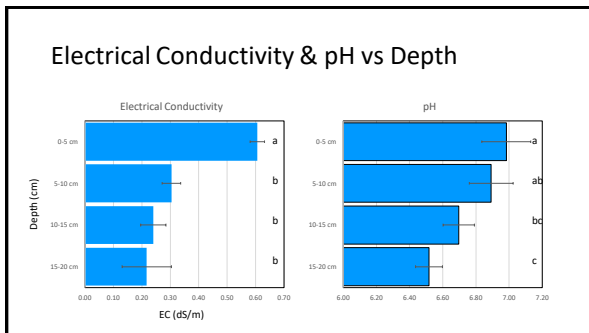
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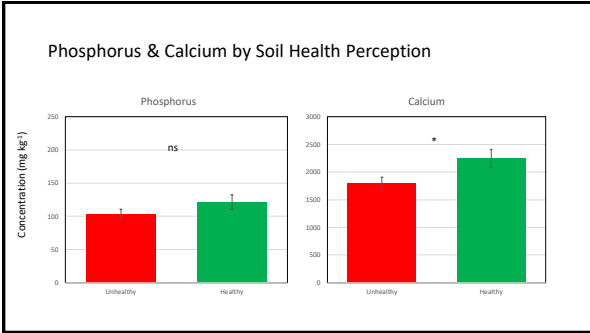
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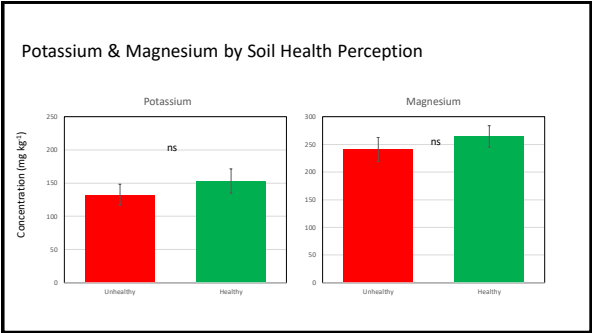
Results

- Some of the indicator data show relationships with perceived soil health.

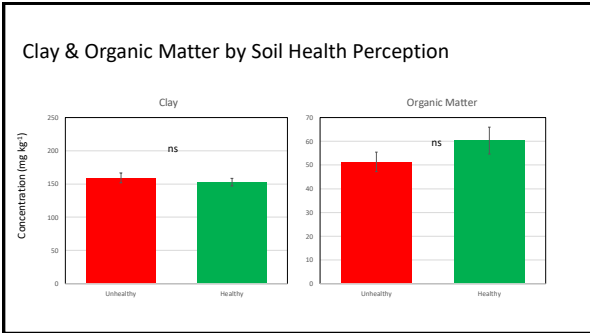
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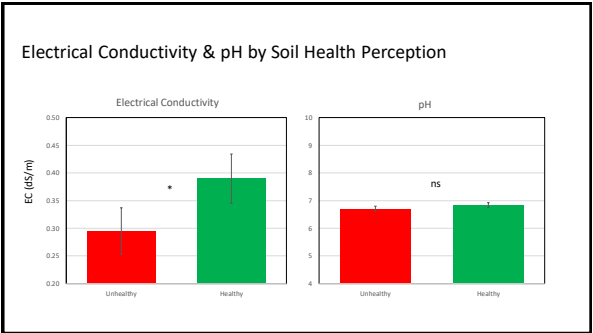
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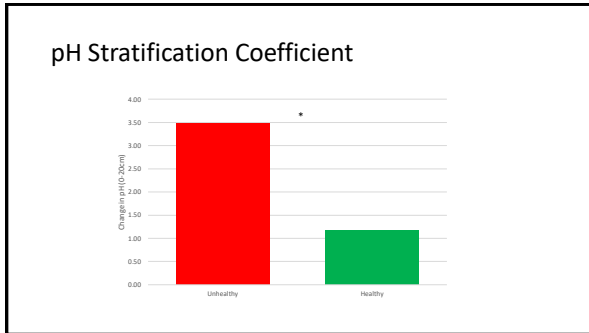
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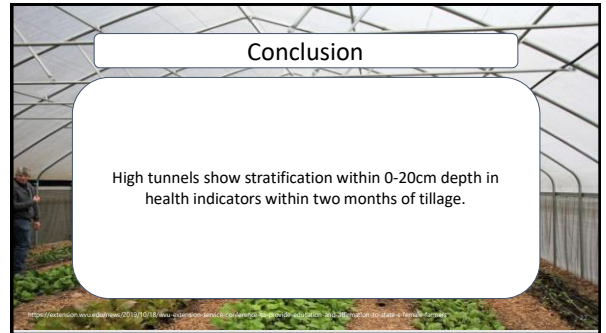
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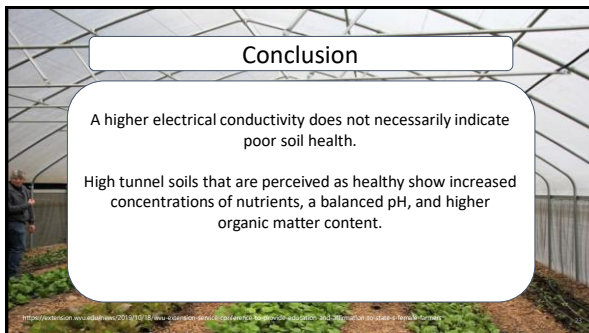
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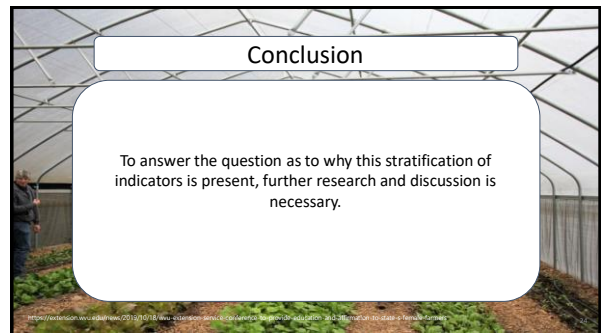
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Thank You

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