Soil Health Variances Between Conventional, Organic and Transitional Plots

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Introduction

- “Soil health, also referred to as soil quality, is defined as the continued capacity of soil to function as a vital living ecosystem that sustains plants, animals, and humans” (Soil Health, n.d.).
- Soil health is very important to everyone, especially to those working in agriculture because healthy soil contributes to high production and quality of produce.
- Factors that contribute to a positive soil health are balanced pH levels, sufficient nutrients, and proper drainage.
- I hypothesize that soil health will be at a more optimal level in organic plots than conventional and transitional soil plots.

Figure 1: Collecting soil sample

LAB TEST RESULTS

Soil pH: 6.8 **Soil Organic Matter:** N/A **EC (dS/m):** N/A

Nutrients	Values	Rating
P (ppm)	180	Excess
K (ppm)	370	Excess
Ca (ppm)	2100	Optimum +
Mg (ppm)	270	Optimum +
Psat (%)	31	High

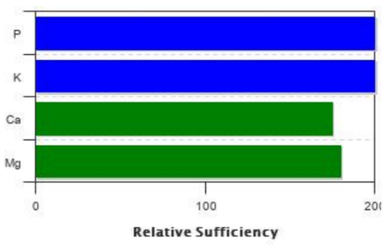

Table 1: Soil Health Data- Organic Plot

LAB TEST RESULTS

Soil pH: 6.9 **Soil Organic Matter:** N/A **EC (dS/m):** N/A

Nutrients	Values	Rating
P (ppm)	160	Excess
K (ppm)	200	Excess
Ca (ppm)	3630	Excess
Mg (ppm)	370	Excess
Psat (%)	29	High

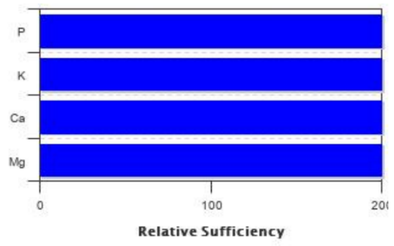

Table 2: Soil Health Data- Conventional Plot

LAB TEST RESULTS

Soil pH: 6.7 **Soil Organic Matter:** N/A **EC (dS/m):** N/A

Nutrients	Values	Rating
P (ppm)	160	Excess
K (ppm)	210	Excess
Ca (ppm)	2610	Excess
Mg (ppm)	280	Optimum +
Psat (%)	24	Medium

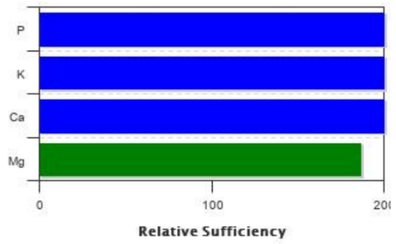

Table 3: Soil Health Data- Transitional Plot

Methods

- Planned out each plot and measured them out to be 1,045 square feet. Gathered twenty 4-inch cores from each plot through Random Sampling.
- All 20 cores were collected into their own brown paper bag and mixed.
- All three samples were then taken to the WVU Soil Testing Lab, and the results were provided.

Results

- The organic plot had an excess of phosphorus(P) and potassium(K), while having calcium(Ca) and Magnesium(Mg) at an optimum level.
- The conventional plot had an excess of all four P, K, Ca and Mg.
- The transitional plot had an excess of P, K and Ca, while having Mg at an optimum level.
- The organic and conventional plots had a high Psat, while the transitional had a medium Psat.

Discussion

- Fail to reject the null hypothesis that there would not be a significant difference amongst organic, conventional, and transitional plots.
- Future research can place emphasis on organic matter of the soil samples when completing testing because the organic matter is a major factor in soil health.
- Future Implications include doing more beforehand research.

References

- https://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/