

Farm-to-Fork: Sustainable Agriculture Program for Youth

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1. INTRODUCTION

- Youth today have limited knowledge about sustainable agriculture for ensuring sustainable food systems and a healthy environment
- They are losing interests in considering agriculture as a career option
- Therefore, it is needed to increase awareness among the youth and extended community about the importance of sustainable agriculture and related career options

2. OBJECTIVES

- Engage and educate youth about sustainable agriculture practices
- Develop skills on soil health assessment
- Provide hands-on experience to youth through farm visits and discussion with the owners of sustainable farms and farm-to-fork establishments
- Introduce youth to sustainable agriculture career opportunities

3. METHODS

- Collaborated with Mankato East/West High School to recruit students
- **Educators:** farmers, ranchers, and South Dakota Soil Health Coalition staff
- **Farm-to-Fork: Sustainable Agriculture** program was designed
 - **Session 1:** Introduction to the program and sustainable agriculture
 - **Session 2:** Soil health and water quality
 - **Session 3:** Soil health promoting agricultural practices – field day; career in sustainable agriculture
 - **Session 4:** Improving water quality through conservation practice – virtual field day
 - **Session 5:** Sustainable animal production and farm-to-fork establishment – field day
 - **Session 6:** Movie Day: Netflix documentary film - “Kiss the Ground”
- **In-class and Field Activities (Figure 1):**
 - Video assignments
 - Bury undies
 - **Soil health assessment:** Soil sampling from a pasture, corn-soybean, and corn-soybean with cover crop treatments
 - ✓ Analyses of physical, chemical, and biological soil health indicators



Figure 1. In-class and field activities of Farm-to-Fork sustainable agriculture program for youth.

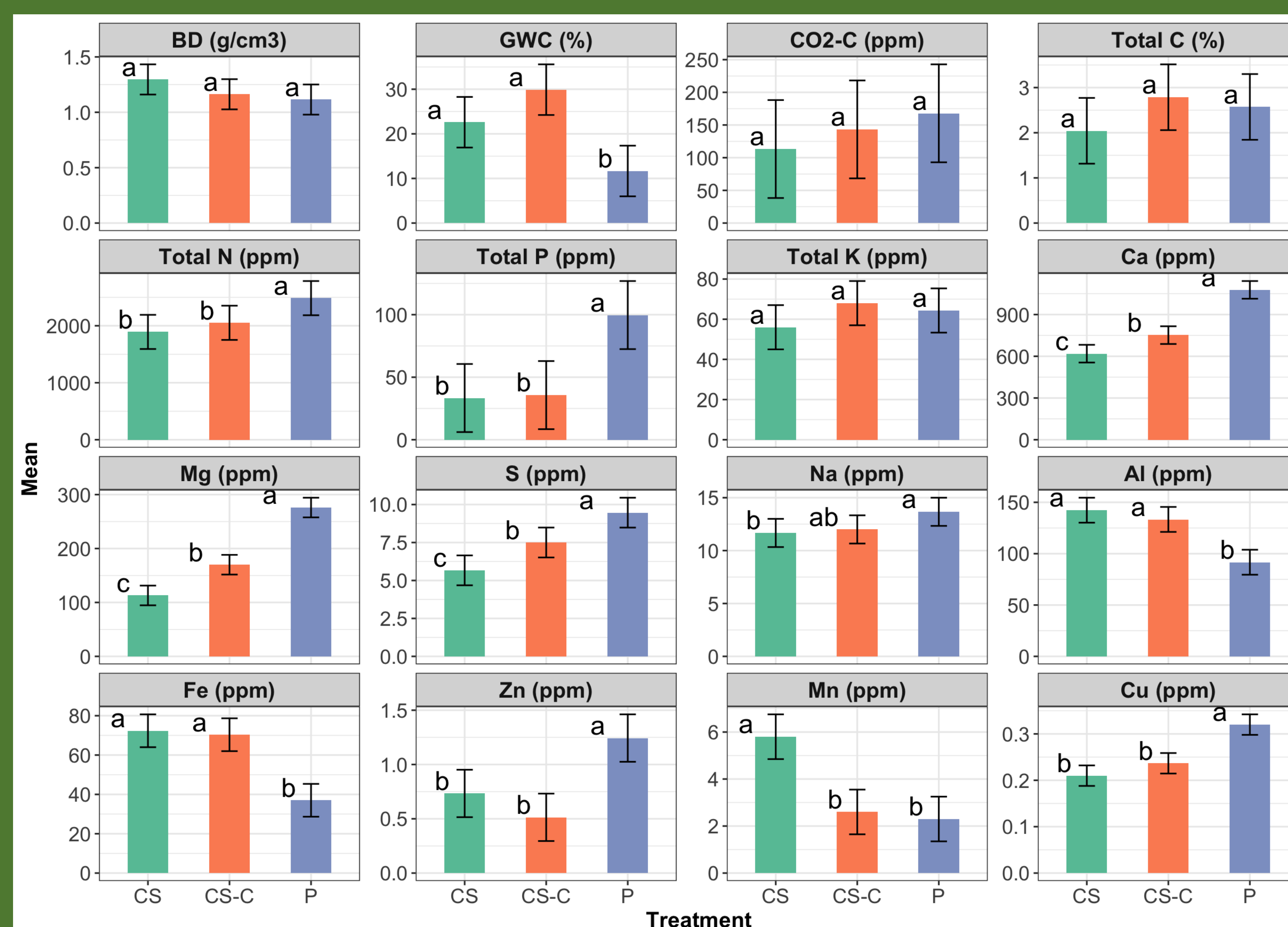


Figure 2. Results of soil health assessment (mean \pm standard error; $n = 4$) of three cropping systems: i) corn-soybean (CS), ii) corn-soybean with cover crop (CS-C), and iii) pasture (P). Significance between the treatments indicated by different letters at $p < 0.05$.

4. RESULTS

Soil Health Assessment (Figure 2):

- **Physical properties:**
 - Bulk density (BD) was similar for all three treatments
 - Pasture (P) had significantly lower gravimetric soil moisture content (GWC)
- **Chemical properties:**
 - No significant difference between treatments for total C, and total K
 - Pasture (P) had significantly higher total N, total P, Ca, Mg, S, Na, Zn, and Cu
 - Corn-soybean (CS) had significantly higher Al, Fe, and Mn; and lowest Ca, Mg, and S
- **Biological properties:**
 - All treatments had similar respiration rates.

5. LEARNING OUTCOMES

- Youth learned about the importance of:
 - sustainable agricultural practices
 - integrated crop-livestock systems
 - soil health
 - water quality
 - local food systems
- Youth got hands-on experience to collect soil samples for soil health assessment
- Youth learned about sustainable farms and farm-to-fork establishments through farm tours and active discussion with the farm/ranch owners
- Introduced youth to sustainable agriculture career opportunities through in-class discussions and meetings with farmers/ranchers and NRCS staffs
- Youth learned and created short outreach videos on sustainable agriculture practices

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 - Ms. Baylee Lukonen (SD Soil Health Coalition)
 - Mr. Sam Ziegler (Ziegler Farms)
 - Mr. Lee Tesdell (Tesda Century Farm)
 - Mr. Jared Luhman (Grass-Fed Cattle Co.)