BIOAg Project Report Template

Report Type: PROGRESS

Title: **Compost Teas for Enhanced Nutrient Cycling**

Principal Investigator(s) and Cooperator(s):

Lynne Carpenter-Boggs
Carol McFarland
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Cooperators:

- Sheryl Zakariason
- Douglas Poole
- Clay Erskine
- Brentley Uhlorn, Darrel Uhlorn (Uhlorn Family Farms)
- Greg Friedstadt
- Jesse Bruner
- Lindsay Myron
- Aaron Esser
- Scott Deatherage, Barr-Tech Compost

Abstract:

With increasing fertilizer and fuel costs, producers are increasingly keen to improve on-farm nutrient cycling through biologically intensive methods. Currently, poor plant-soil-microbe interactions do not support healthy nutrient flow, which limits crop yield and favors fertilizer-dependent farming. Slow residue breakdown also inhibits direct seeding adoption and adherence since heavy residue at seeding time impedes direct seeding and may inhibit seedling emergence. The use of compost teas might address all of these goals while increasing economic, environmental, and social sustainability.

Project Description:

Our team will conduct on-farm interviews of growers who use compost tea to document current practices and grower observations. We will collect samples of farm-brewed teas and previously researched lab-brewed teas and characterize their chemical makeup and microbial communities. Lab studies will determine effects of teas on residue breakdown rate and nutrient availability, two producer driven goals. These data will position the team to pursue larger funds to conduct on-farm trials.

Outputs

- Overview of Work Completed and in Progress:
    - Developed compost tea sampling kits and distributed several
    - Developed questionnaire and survey for producers using compost teas.
    - Emailed questionnaire to cooperators.
    - Conducted one producer interview.

- Methods, Results, and Discussion (discussion for final reports only):
    - A compost tea sampling kit was developed for collection of compost and tea samples for research studies. Several of these kits were distributed to cooperators who indicated they were ready to use them.
    - A questionnaire and longer survey were developed using Extension literature. The questionnaire was distributed to our initial cooperator list. We received 2 completed questionnaires.
    - The survey tool has been submitted to WSU IRB to request exemption from full review.

- Publications, Handouts, Other Text & Web Products: N/A

- Outreach & Education Activities:
    - WSU Farmers Network Coffee Hour, May 31, 2023 garnered 50 registrations, 22 participants, and 21 YouTube Views. Soil Health Coffee Hour: May 2023 - YouTube

Impacts

- Short-Term: Knowledge increase about the production and use of compost teas. Knowledge increase about published studies of compost tea effects on plant nutrition and plant health.
- Intermediate-Term: N/A
- Long-Term: N/A

Additional funding applied for/secured: N/A

Graduate students funded:

A graduate student was hired to conduct incubation tests and microbial community analysis. However the student decided not to begin graduate studies at this time.

Recommendations for future research:

We will continue to pursue the research outlined with alternative employees.