

# Midwest Cover Crop Council Missouri Annual Report

Springfield, IL  
February 20, 2019

## Contact Information

Charles Ellis  
University of Missouri Extension  
Field Specialist in Agricultural Engineering  
[ellisce@missouri.edu](mailto:ellisce@missouri.edu)  
(636)528-4613



## MU-CAFNR Soil Health Assessment Center <https://cafnr.missouri.edu/soil-health/>

The soil health assessment center continues to collaborate with the Missouri Department of Natural Resources cover crop cost share program. Producers participating in the program submit soil samples for soil health testing from fields where they are doing the cover crop cost share practice. Submitted samples continue to increase each year with increased use of the cover crop cost share practice.

- For 2018 SHAC has exceeded the entire previous year's submissions.
- The drought initiative for early seeding of cover crops to graze was the cause for the increase.
- SHAC is working with DNR for the first season of follow up samples after four years.
- A post-doctoral fellow has been hired to analyze the data collected thus far and to improve soil health assessment.
- Host monthly luncheons.

## Soil and Water Conservation District (SWCD) Cover Crop Cost Share Practice

For the past thirty years, Missouri has had a statewide sales tax for soil conservation practices administered by the Missouri Department of Natural Resources. This tax allows over 30 million dollars to be devoted to soil conservation practices yearly. Typical practices have been terracing, waterways, grazing systems and riparian buffers. Beginning in 2015 cover crops became a cost share practice. For 2018:

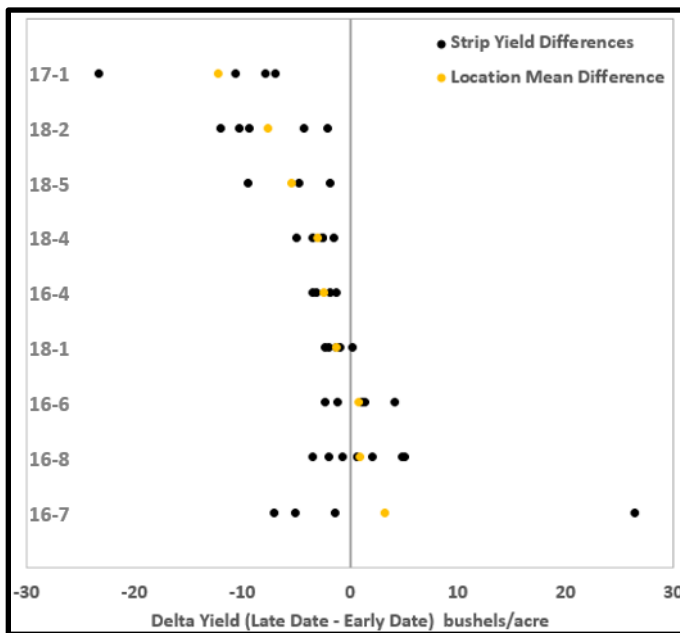
- Estimated 700,000-800,000 acres of cover crops.
- Total state and federal cost share of almost \$20,000,000.
- State cost share
  - 5032 contracts
  - \$11.8 million
  - 328,000 acres of cover crops

## University of Missouri Strip Trial Program

<http://striptrial.missouri.edu/>

University of Missouri Extension through funding from the Missouri Soybean Association and the Missouri Corn Growers have an on-farm strip trial program. The focus of the strip trial program is to do field research related to environmental issues. These include:

- Comparing cereal rye, wheat and no cover crop in after corn or soybeans.
- Comparing termination timing of cereal rye or wheat prior to corn or soybeans.
- Nitrogen timing trials.



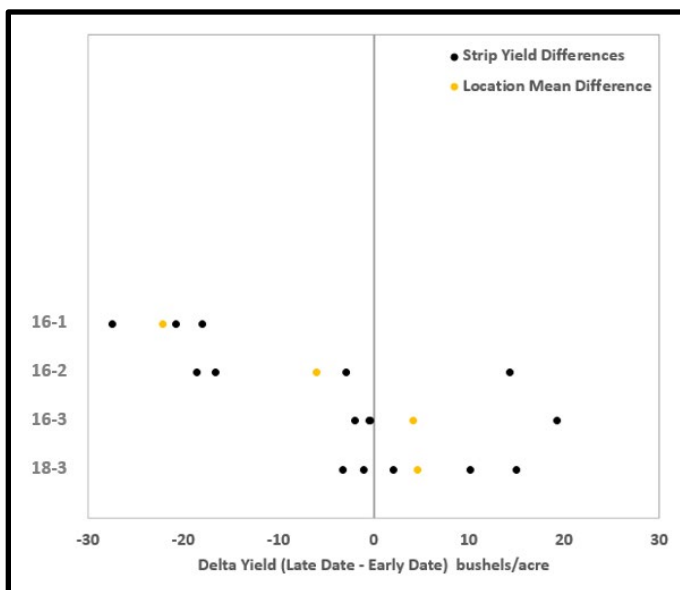
### Trial Means Soybean Termination Timing

**Early Termination:** 52.8 bu/ac

**Late Termination:** 50.5 bu/ac

**Delta:** -2.3 bu/ac

*P value* 0.02



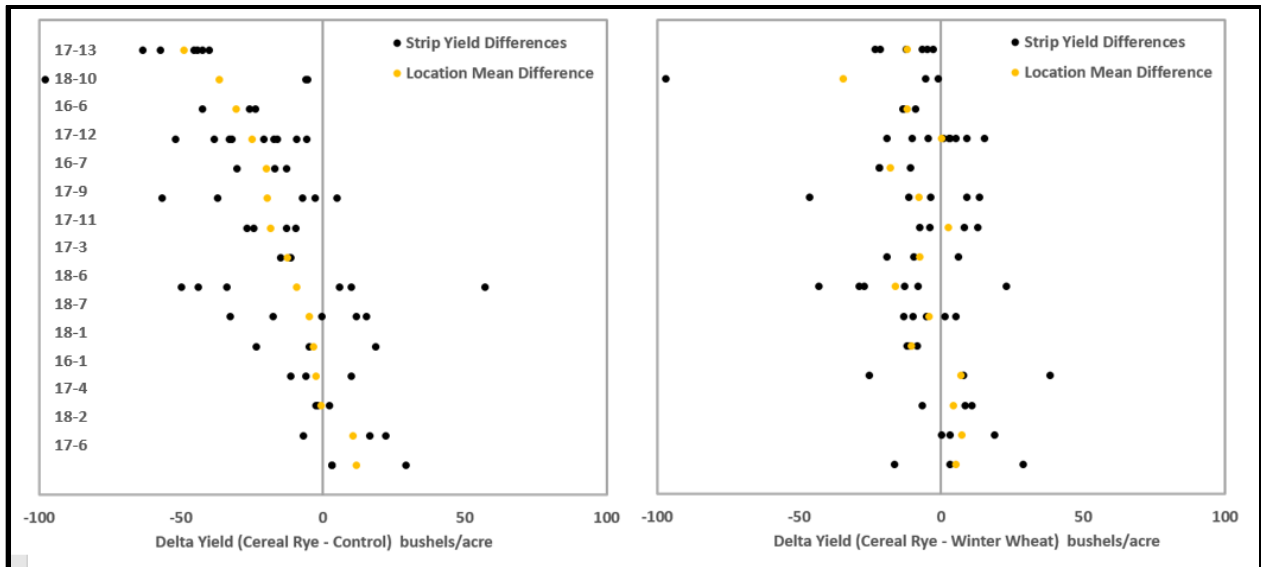
### Trial Means Corn Termination Timing

**Early Termination:** 163.3 bu/ac

**Late Termination:** 160.0 bu/ac

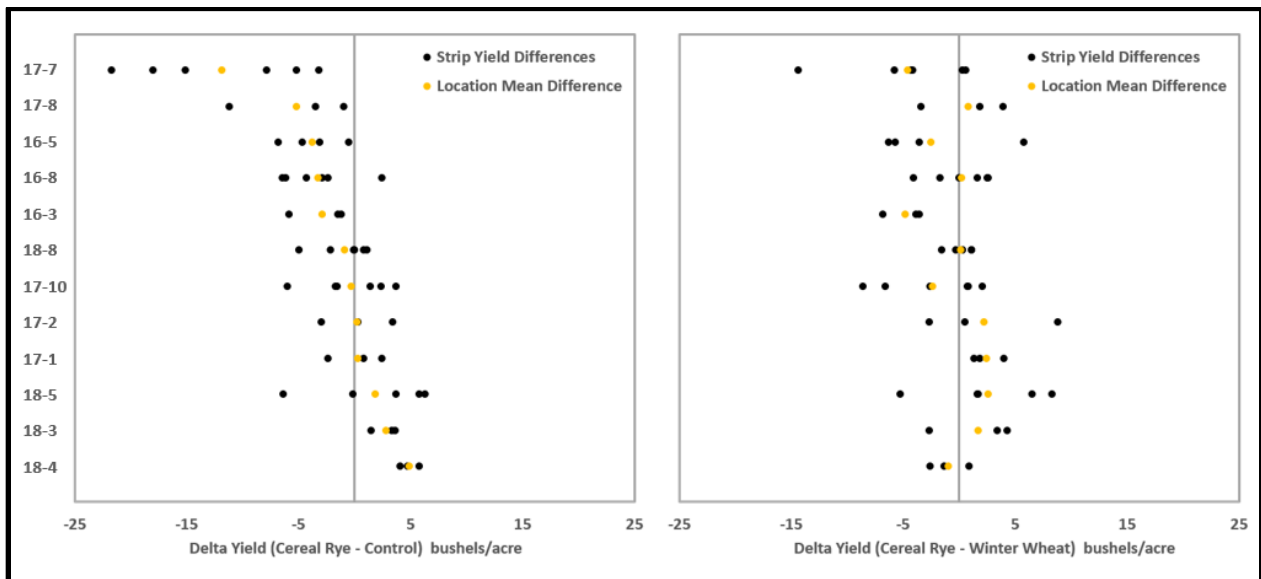
**Delta:** -3.2 bu/ac

*P value* 0.38



Corn after Cereal Rye: 160.7 bu/ac  
 Corn Control: 177.2 bu/ac  
 Delta: -16.5 bu/ac  
*P value*: <0.01

Corn after Cereal Rye: 160.7 bu/ac  
 Corn after Winter Wheat: 167.1 bu/ac  
 Delta: -6.4 bu/ac  
*P value*: 0.02



SB after Cereal Rye: 56.5 bu/ac  
 SB Control: 58.5 bu/ac  
 Delta: -2.0 bu/ac  
*P value*: 0.01

SB after Cereal Rye: 56.5 bu/ac  
 SB after Winter Wheat: 57.1 bu/ac  
 Delta: -0.7 bu/ac  
*P value*: 0.37

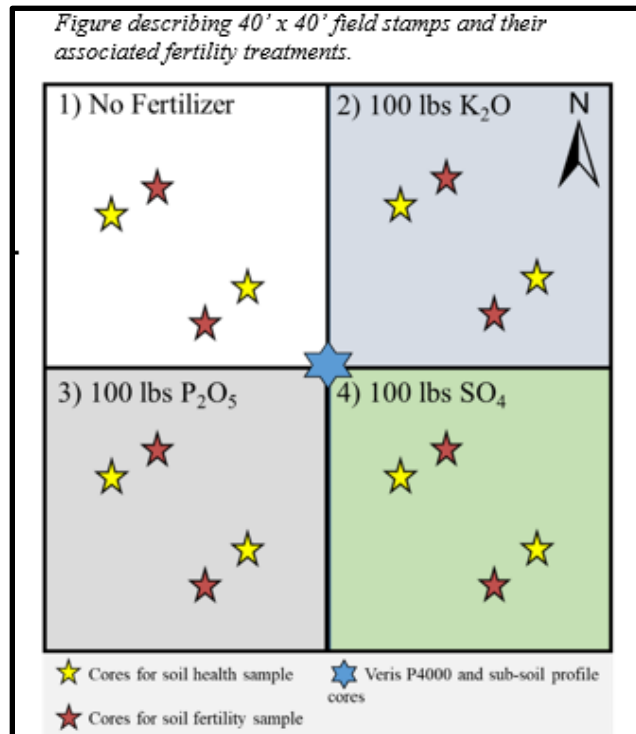
Individual sites are using the producer's production practices and should be considered case studies.

<http://striptrial.missouri.edu/>

## Research Centers with ongoing cover crop work

- Ten cover crop treatments in a corn/soybean rotation in fifth year.
- Five rotation study with and without cover crops in fourth year.
- Fertility study with and without cover crops.
- Soil health factors and crop yield as affected by cover crop management.

## Does Soil Health Influence Soil Fertility and Fertilizer Recommendations



- Targeting 50+ fields planted to corn in 2019.
- Focused on low testing P and K level fields.
- Multiple 40 sq. ft. sites, subdivided within a field.
- Yield will be collected for response within the treatments.
- Soil health measurements will be taken at each site.