

## **Midwest Cover Crop Council Missouri Annual Report**

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### **Contact Information**

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### **Publications/Resources**

Cover crop decision tool completed for Missouri.

### **Statewide Work**

#### **MU-CAFNR Soil Health Assessment Center**

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 also submit soil samples for soil health testing from fields where they are doing the cover crop cost share practice. During the first two years of the cover crop practice over 3000 samples have been submitted for analysis.

Fiscal Year 2017

- Nearly 1,400 samples sent to the Soil Health Assessment Center

Lab results

- Total Organic Carbon (TOC)
  - The average % TOC for the FY 2016 samples was 1.8% which is approximately 3.1% soil organic matter (SOM).
  - TOC ranged from SEMO with an average of 1.4 % TOC and 2.4 % SOM to NWMO with an average of 2.2 % TOC and 3.8 % SOM
  - The variability in regional averages indicates the effects of climate, soils, and native vegetation on soil carbon/organic matter
- Percent Water Stable Aggregates (WSA)
  - Individual samples varied from 0% to 95% WSA
  - State average was 36%
  - The regions only varied from 34% in SEMO to 39% in NWMO
  - The relative lack of variability in % WSA across the regions of the state may suggest that while TOC, climate, soil, and native vegetation affect % WSA, management practices have a much greater influence.

#### **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 with over 80,000 acres being seeded to cover crops by over 700 producers.

### **University of Missouri Strip Trial Program**

University of Missouri Extension through funding from the Missouri Soybean Association and the Missouri Corn Growers began 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.

During 2016, fifty sites were in the strip trial program with complete data collected on forty sites. Data collected included:

- Cash crop yield.
- Cover crop growth.
- Crop color and cover crop ground cover measured by drone flights.
- Weed suppression.

Results from the first year:

- Corn is more sensitive to cover crops than soybeans.
- Cash crop yield differences between cereal rye and wheat.
- Cash crop yield differences from different cover crop termination dates.
- Some weed suppression reported by producers.

### **Research Centers with ongoing cover crop work**

Bradford Research Center- Central Missouri, Tim Reinbott

Graves-Chapple Research Center, NW Missouri, Wayne Flanary, Jim Crawford

Hundly-Whaley Research Center, NC Missouri, Bruce Burdick

Greenly Memorial Research Center, NE Missouri, Kelly Nelson

Goodwater Creek Experimental Watershed, Central Missouri, ARS Facility, Newel Kitchen, Ken Sudduth

### **Educational Events**

Hypoxia task force cover crop tour.

Extension In-Service training.

NRCS In-Service Training.

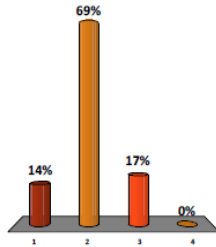
Collaborative Extension, Elsberry Plant Materials Center, NRCS and SWCD Cover Crop Conference.

MFA Agronomist Trainings.

## Missouri Farmer Perspectives

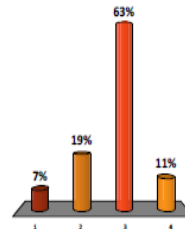
### My target month for CC seeding.

1) August 2) September 3) October 4) November



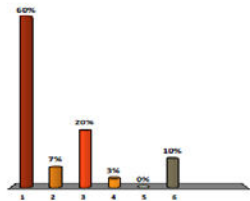
### Most years I seed during this time period.

1) August 2) September 3) October 4) November



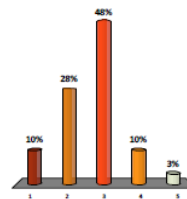
### The seeding program I use most years is...

1) Drill after harvest 2) Fly into standing crop 3) Broadcast or with fertilizer after harvest 3) Drill into standing crop 5) Broadcast with combine 6) Weather dependent



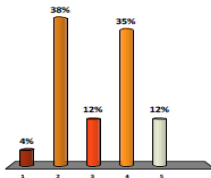
### For your cropping system, which month should researchers target for species selection and seeding data.

1) August 2) September 3) October 4) November 5) don't know



### My priority needs for cover crop research is \_\_\_?

1) Better termination herbicides 2) New forage species for fall/winter grazing 3) Seed coat technology for summer planting 4) New cold tolerant species 5) Radish varieties with wider germination window



### I am seeing measurable yield differences due to cover crops.

1) Too soon 2) Not yet 3) Maybe 4) Some 5) Definitely yes

