

Midwest Cover Crop Council Missouri Annual Report

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Contact Information

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



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

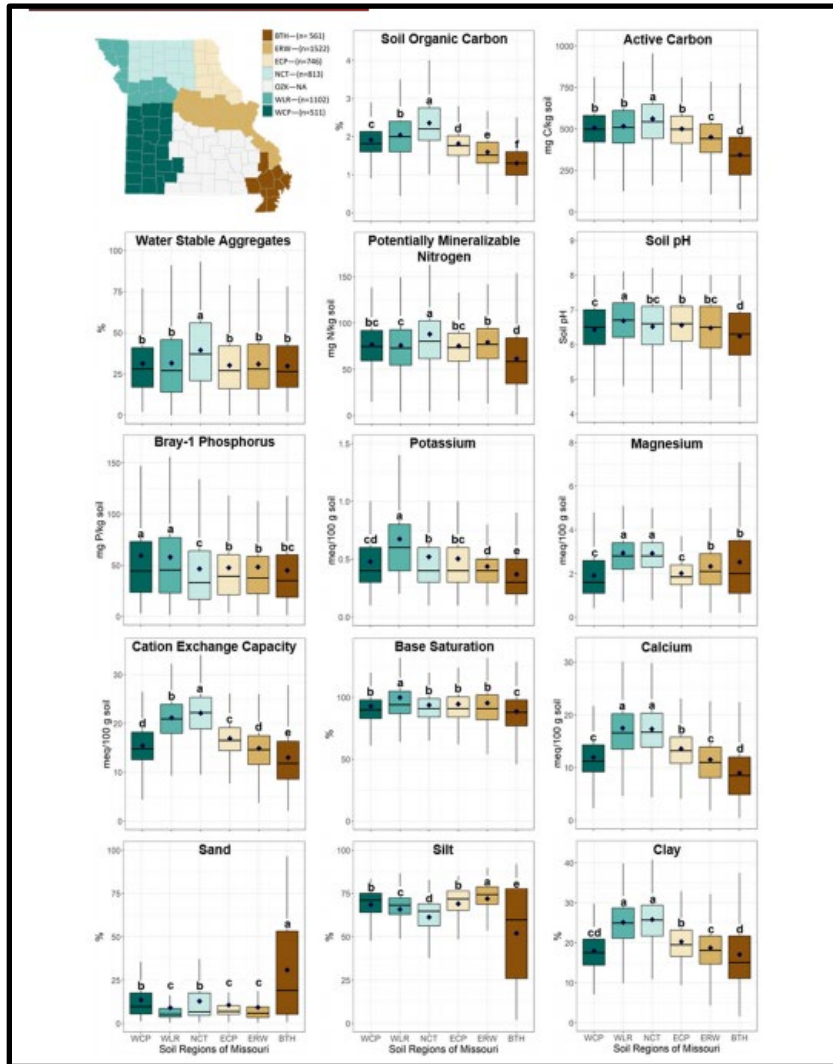
For the past thirty years, Missouri has had a statewide sales tax for soil conservation practices administered by the Missouri Department of Natural Resources. This tax allows over 40 million dollars to be devoted to soil conservation practices yearly. Typical practices have been terracing, waterways, grazing systems and riparian buffers. Beginning in 2015 cover crops became a cost share practice. For 2020:

- Estimated over one million acres of cover crops.
- Total state and federal cost share of almost \$20,000,000.
- Cost share dollars primarily from the Missouri Soil and Water Conservation Program supported with the state sales tax.

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 2020 the center analyzed over 15000 samples.
- Host monthly luncheons to facilitate discussion around cover crops and soil health with partner organizations.
- Data from the Soil Health Assessment Center show that it is important to understand the potentials and limitations of a particular soil when interpreting soil health results. Soils in the north-central and western parts of Missouri will likely have higher values in soil health tests related to organic matter, such as C and microbial measurements, because of the influence of parent material and native vegetation. This data is summarized in the graphic below. Zuber SM, Veum KS, Myers RL, Kitchen NR, Anderson SH. Role of inherent soil characteristics in assessing soil health across Missouri. Agric Environ Lett. 2020;5:e20021. <https://doi.org/10.1002/ael2.20021>



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 termination timing of cereal rye or wheat prior to corn or soybeans.
- Cereal Rye residue longevity in a corn/soybean rotation.
 - **Treatments:** Cereal Rye vs. no planted cover control. Cereal rye is planted into cornstalks prior to soybeans.
 - **Key questions:** Can cereal rye when terminated at maturity provide two years of erosion protection and its effect on soybean and corn yield?
- Comparing cereal rye, wheat and no cover crop in after corn or soybeans.

- **Treatments:** Winter Wheat vs. Cereal Rye vs. no planted cover control.
- **Key question:** Can winter wheat successfully substitute for cereal rye providing benefits without the potential negative yield impact?

Five-year summary for the cereal rye/wheat/no cover trial include:

- For corn, cereal rye cover crop reduced yield whereas there was good evidence that winter wheat cover crop did not. Over the three site-years, cereal rye cover crop reduced corn yield about 4%.
- For soybean, there was little evidence of a consistent impact of cover crop on yield when analyzed across two years.
- Future work will seek to determine if there are trends in the effect of cover crop over time.
- Below is data from two of the sites over the last five years.

