

# Advancing Organic Agriculture in the Mid-South: Evaluating Systems and Reducing Barriers to Entry



## PURPOSE:

The U.S. Mid-South region has seen only nominal growth in organic production due in part to the lack of geographically specific production information. The most significant barriers include complex organic crop management and pest control, and the organic certification process.

This region has unique conditions, with a longer growing season, higher moisture, and warmer temperatures that make organic production challenging. Farmers are concerned about limited weed and pest control options, and the requirements of the certification process, making organic crop production seem out of reach.

Compared to other regions, relevant organic production information for the Mid-South is sparse. Research and outreach efforts are needed to address these problems and make organic crop production more feasible for producers.

### This project addresses these issues by:

- 1 conducting a replicated, controlled field trial study on management of cover crops, tillage, integration of livestock, and effects on pests, soil health, crop yield, and economic feasibility.
- 2 establishing larger, on-farm, multi-state field demonstration trials to evaluate applied practices.
- 3 providing outreach and education programs for producers and agriculture-related organizations on research-supported information, economic analysis of OCP systems, and the overall potential for organic production in the Mid-South region.

## WHAT HAS BEEN COMPLETED TO DATE:

### Replicated research plots comparing four treatments (management systems) were established.

- No-till treatment (conservation system), winter cover crop followed by soybeans or corn.
- Conventional till treatment (profit driven system), winter wheat cover crop to harvest followed by soybeans or corn.
- No-till treatment with cattle grazed winter cover crop.
- Conventional till treatment with cattle grazed winter cover crop.

### Data and observations to date suggest practical lessons for organic management:

- Early fall planting of the cover crop is important to establish enough cover.
- Grazing is valuable for cattle weight gain but grazing too long allows weeds to outgrow the cash crop.
- Earlier crop planting dates and higher seeding rates are beneficial.
- Consistent and aggressive cultivation is needed to control weeds.

### Three farm-scale sized demonstration plots were established.

- Arkansas site covers 12 acres, divided between the no-till and conventional till systems.
- Missouri site covers 12 acres and applied the integrated treatment across no-till and conventional till.
- Tennessee site covers 20 acres, divide between the no-till and conventional till treatments.



## PARTNERS:

USDA Dale Bumpers Small Farms Research Center	University of Arkansas	University of Missouri – Southwest Research Center	Natural Soybean and Grain Alliance	Agricenter International
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## SIGNIFICANCE OF THE FINDINGS:

Research plot results suggest that establishing vigorous winter cover crops, planting the summer cash crop as early in the spring as practical, and timely cultivation of row crops are the most beneficial practices.

Economic analysis points to break-even yields that are lower for organic systems than conventional systems, suggesting potentially greater profit.

Grazing on winter cover crops was effective in the treatment and provided valuable livestock feed.

Alternative practices, such as switching to forage soybean production in adverse conditions, offered flexible management options.



## EXTENSION AND/OR EDUCATION ACTIVITIES:

A farmer workshop was held on March 28, 2023, providing information about the project, research and results, and an introduction to the USDA organic certification processes.

Three field day events are planned for fall 2023 to promote organic production and demonstrate management practices. The events will illustrate methods that can be used in transitioning land to organic production.