



WHEAT AND SOYBEAN RELAY CROP SYSTEMS

ACTION TRIAL PROTOCOL

In partnership with **UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN**

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Reviewed and revised by the ISA OFTN Team

Winter crops can bring both agronomic and economic benefits, but they only fit into Illinois rotations if both the winter crop and the soybean crop that follows can deliver a profitable yield. This project is focused on how to make soybeans work better in rotation with wheat to optimize system profitability by comparing relay-cropping soybeans into standing wheat to standard double-cropping where soybeans are planted behind wheat harvest.

OBJECTIVE

- 1) Compare agronomic management strategies between relay-crop wheat-soybean and double-crop wheat-soybean
- 2) Compare the economic performance of relay-crop wheat-soybean and double-crop wheat-soybean by analyzing input costs, yields, resource efficiency and market returns

TREATMENTS

- 1) Relay-cropped soybeans planted into wheat in early-to-mid April before wheat heading
- 2) Standard double crop soybean planting following wheat harvest

Farmers can use the row spacing configuration for relay-cropping that is most compatible with their equipment. Spacing will likely vary from operation to operation for both wheat and soybeans. Ideally, soybean row spacing is consistent among treatments. Farmers can work with the research team if desired on the plan for relay-cropping deployment.

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PLOT LAYOUT

- Minimum field size of 40 acres.
- Trials will consist of at least 4 replications of both treatments with a minimum length of 300 ft long and a width compatible with the combine header and mechanism of wheat planting.

EQUIPMENT NEEDED

- 1) Planter or drill to seed wheat in the fall
- 2) Combine with calibrated yield monitor

FIELD WORK AND MEASUREMENTS COLLECTED

- Agronomic management information – *Farmer provided*
 - Previous 3-5 years of basic management information preferred
 - More detailed current year's management information
- Baseline soil fertility sampling & analysis – *ISA responsible, spring*
- Field scouting when time and labor allow – *ISA responsible*
- Soybean stand – *University of Illinois responsible*
- Pest dynamics – *University of Illinois responsible*
- Yield monitor data for both wheat and soybeans – *Farmer provided*
- Agronomic management information will need to be obtained from farmers to do the economic analysis

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