



COVER CROP BIOMASS & WEED SUPPRESSION

ACTION TRIAL PROTOCOL

PROTOCOL AUTHORS – The ISA OFTN Team

OBJECTIVE – Evaluate how different cover crop grass species (cereal rye & winter barley) impact cover crop biomass and weed suppression in the following soybean crop.

- Number of locations: 4 on-farm sites
- Geographic scope: Statewide
- Prefer no-till or reduced / minimal tillage field.

TREATMENTS – Comparison of two individual cover crop species, cereal rye and winter barley, to a no-cover crop control.

Cover Crop Treatment Requirements:

- Cover Crop Species:
 - Cereal Rye
 - Winter Barley
- Cover Crop Planting Guidelines
 - Plant each species at the same rate: 40-50 lb/A pure live seed
 - Plant cover crops as soon as possible after harvest. Must be planted by November 15. Please refer to the Midwest Cover Crop Council Selector Tool for ideal dates for planting in your area.
 - Must be direct planted with drill, 15" planter or air seeder.
- Cover Crop Termination Guidelines
 - Use chemical termination.
 - Termination timing may be determined by the farmer. However, termination shall not occur until at least one cover crop species has reached a minimum height of 12 inches. Consult the ISA OFTN Team for clarification on termination method with cover crop growth stages.
 - Terminate both cereal rye and winter barley on the same day, using the same herbicide program.
 - Detailed termination plan to be discussed with ISA OFTN Team.

Control Requirements:

- Apart from cover crop presence, all other field management should be the same.
- Only exception: Herbicide strategy for control (dates and residual) can differ from the cover crop treatments.

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Treatment Rationale:

- Testing the amount of biomass for two grass species using typical seeding rates to evaluate how much biomass is produced and the impact of that biomass on weed suppression in soybeans.

PLOT LAYOUT – Flexible depending on equipment and field dimensions.

- Minimum of 40 acres.
- Trials will consist of at least 4 replications of a control and two cover crop treatments (total of 12 plots), each a minimum of 60 foot wide.
- Width of plots can be adapted to farmer's equipment.
 - Must be wide enough to measure yield using farmer's harvest equipment.
 - Minimum width is the larger of either 60 ft or twice the width of the combine header (to avoid edge effect).

EQUIPMENT NEEDED

- Cover crop planting equipment—drill, planter, air seeder, etc.
- Access to sprayer or custom applicator for chemical termination of cover crop
- Combine with a 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
- Cover crop planting and termination - *Farmer responsible*
- Baseline soil fertility sampling & analysis - *ISA responsible, spring*
- Field scouting - *ISA responsible, cover crop and cash crop growing season*
- Spring cover crop biomass - *ISA responsible*
- In-season weed counts - *ISA responsible*
- Yield monitor data - *Farmer provided*

ISA OFTN CONTACT INFO

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