



**RESEARCH
 PROTOCOLS**

**Cereal Rye Cover Crop for Reducing
 Herbicides in Soybeans**

Objectives: Determine the effects of reduced herbicide programs on weed control and soybean yield when allowing a cereal rye cover crop to grow to at least two feet tall before planting the soybeans. **Hypothesis:** Provided adequate cover crop growth, weed control and soybean yield will not be sacrificed by reducing herbicide use. A cereal rye cover crop paired with reduced herbicide use could be considered a cost-effective weed control program.

Farmer-Cooperator will:

- Take photos throughout the project and keep in contact with PFI with updates and questions.

Establish treatments

- **Fall 2018**, seed cereal rye cover crop to the entire field.
- **Spring 2019**, establish at least 4 replications of treatments as shown in the diagram below
 - **1 pass: Cover crop termination only (glyphosate)**
 - **2 passes: Early weed burndown (2,4-D) + cover crop termination (glyphosate)**
 - **3 passes: Early weed burndown (2,4-D) + cover crop termination (glyphosate + residual) + post emergence herbicide**
- Plant soybeans to all strips on the same date.
- Strips will be as wide as at least one combine pass and run the length of the field.

Measurements

- **Spring 2019**, prior to cover crop termination
 - Measure cover crop height and collect aboveground biomass samples from each strip.
 - **Summer 2019**
 - Take photos of trial progress.
 - Conduct weed counts in each strip.
- Fall 2019**, harvest soybeans from each strip individually.
- Turn in all info and data pertinent to this trial to Practical Farmers of Iowa by the end of the project.

1 pass	2 passes	3 passes	1 pass	2 passes	3 passes	1 pass	2 passes	3 passes	1 pass	2 passes	3 passes
REP 1			REP 2			REP 3			REP 4		

Practical Farmers of Iowa will:

- Help set up monitoring protocol, monitor progress of project and provide support when needed.
- Publish results in a PFI research report, on PFI website and potentially other outlets.
- Provide \$550 honorarium after all data is submitted at conclusion of the project in 2019.

Contact: Stefan Gailans, Research and Field Crops Director, (515) 232-5661; stefan@practicalfarmers.org