



**RESEARCH  
 PROTOCOLS**

**Interseeding Cereal Rye, Oats and  
 Buckwheat Cover Crops In Seed Corn**

**Objectives:** Determine the effects of interseeding cereal rye, oat and buckwheat cover crops to seed corn at the ~V6 stage and after the male rows are destroyed on 1) cover crop biomass production (survival) and 2) weed suppression. **Hypothesis:** Compared to no cover crop, effective late-season weed control can be achieved with interseeded cover crops and is directly related to the amount of cover crop biomass produced.

**Farmer-Cooperator will:**

- Follow Research Protocols in accordance with Project Design, Data to Collect and Timeline detailed below.
- Take photos throughout the project. Try to capture photos that depict the differences you observe among the treatments.
- Keep in contact with PFI with updates and questions.
- Turn in data and complete post-project survey by November 2020.

**Practical Farmers of Iowa will:**

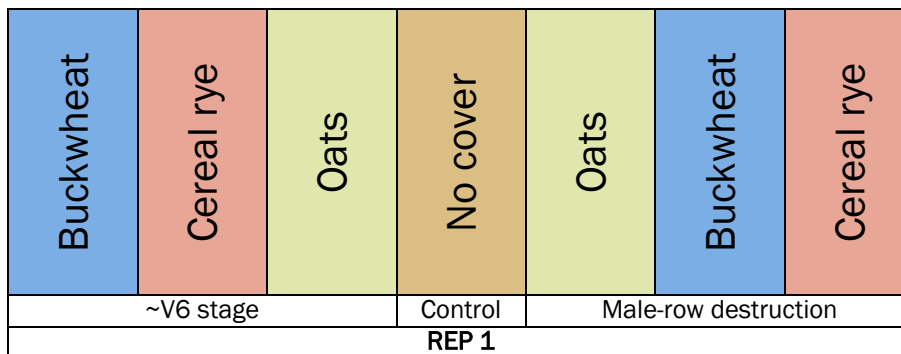
- Help set up research protocol, monitor progress of project and provide support when needed.
- Publish results in a PFI research report, on PFI website and potentially other outlets.
- Provide \$550 research honorarium to cooperator upon receipt of data.

**Project Design:**

- Treatments are combinations of interseeding date and cover crop species

Treatment	Interseeding date (approx.)	Cover crop species
1	V6 corn stage	Cereal rye
2		Oats
3		Buckwheat
4	Male-row destruction	Cereal rye
5		Oats
6		Buckwheat
7	No cover (control)	

- Apply these seven treatments in a randomized, replicated trial: at least four replications of randomized paired strips. 7 treatments x 4 replications = 28 strips total.
- Strips must be at least as wide as one combine pass and should run the length of the field.
  - Example layout of one rep:



**Data to Collect (cooperator):**

- Weed assessment
  - In late summer, travel down center male row of each strip and count and record number of waterhemp plants visible.
- Cover crop biomass
  - Just prior to seed corn harvest, sample aboveground biomass from each strip.
    - Randomly place 1'x1' PVC square in strip
    - Use shears to clip all aboveground plant material from within the square
    - Place all samples from a single strip into one paper bag
      - (e.g., one paper bag per strip)
    - Label paper bags accordingly
      - Cover crop seeding date: V6 or male row destruction
      - Cover crop species: rye, oats or buckwheat
      - Number of squares sampled from (e.g., 3 squares = 3 ft<sup>2</sup>)
      - Date of collection
    - Send paper bags to PFI office
      - Samples will be dried and weighed

**Project Timeline:**

<b>Spring</b>	<b>Summer</b>	<b>Fall</b>
<ul style="list-style-type: none"><li>• Plant entire field to seed corn (per seed corn company).</li></ul>	<ul style="list-style-type: none"><li>• Interseed cover crops when seed corn reaches V6 stage (June/July).</li><li>• Interseed cover crops directly following male-row destruction per standard seed corn production procedures (August).</li><li>• Conduct weed assessment.</li><li>• Take photos.</li></ul>	<ul style="list-style-type: none"><li>• Collect cover crop biomass samples just prior to seed corn harvest.</li></ul>

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