

Field Crops Research Protocols

Cover Crop and N Fertilizer Strategies for Corn Following Corn or Soybean

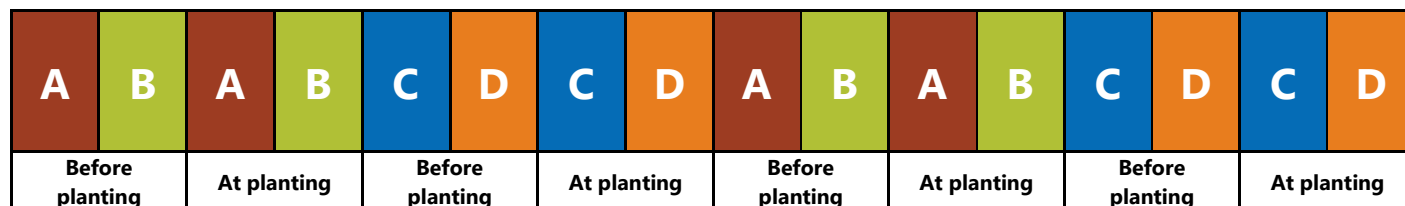
Objective: Quantify the agronomic performance of corn when delaying termination of a cereal rye cover crop (i.e. planting corn into “green” cover crop) when following either corn or soybean in rotation.

Farmer-cooperator will:

- Take photos throughout the project and keep in contact with PFI with updates and questions.
- **Fall 2016**, seed cover crop.
- **Spring 2017**, establish 4 replications in 2 fields as shown in the diagram below of the following treatments:

Previous crop	CC termination date (relative to corn planting)	Treatment	N fertilizer strategies
Corn	Before planting	A	Fall manure + 35 lb N/ac at planting + 60 lb N/ac at side-dress
		B	Fall manure + 35 lb N/ac at planting + 90 lb N/ac at side-dress
	At planting	C	Fall manure + 35 lb N/ac at planting + 60 lb N/ac at side-dress
		D	Fall manure + 35 lb N/ac at planting + 90 lb N/ac at side-dress
Soybean	Before planting	A	35 lb N/ac at planting + 100 lb N/ac at side-dress
		B	35 lb N/ac at planting + 120 lb N/ac at side-dress
	At planting	C	35 lb N/ac at planting + 100 lb N/ac at side-dress
		D	35 lb N/ac at planting + 120 lb N/ac at side-dress

- Strips will be as wide as at least one combine pass and run the length of the field.
- Collect aboveground biomass samples of cover crop from strips just prior to termination.
- Periodically record soil temperatures to 4-in. depth.
- For each field, plant corn to all strips on the same date.
- Collect LSNT soil samples, corn populations in early June.
- Side-dress strips on same date.
- **Summer 2017**, collect stalk samples at corn maturity.
- **Fall 2017**, harvest corn from strips individually.
- Turn in data to Practical Farmers of Iowa at the end of the project.



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 \$1,100 compensation (2 trials) at conclusion of the project in 2017.

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The terms of this Research Protocols document are subject to the terms of the individual Research Cooperator's Memorandum of Understanding agreement with PFI. To the extent these terms may differ or conflict, the Memorandum of Understanding shall control.