PRACTICAL farmers of Iowa
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Field Crops Research Protocols

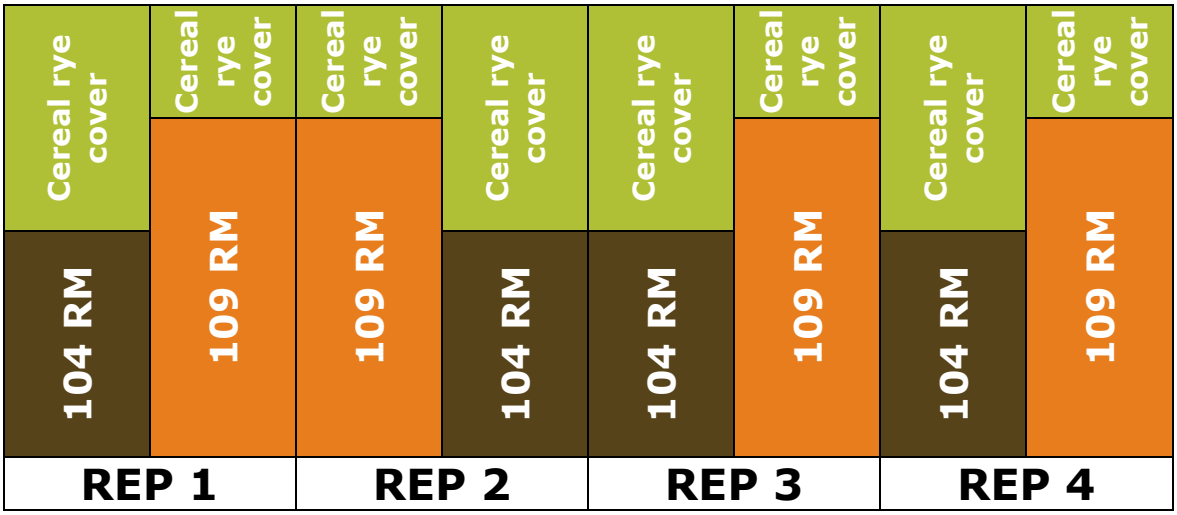
Accommodating Cover Crops With Short-Season Corn and Soybeans

Objective: Determine if cover crops can be more successfully established following a corn and soybean varieties that mature and are harvested earlier than what would normally be planted at a location. Quantify the agronomic and economic performance of short- and normal-season corn and soybeans planted in succession. (Short-season corn is in rotation with short-season soybeans, and vice versa.)

CORN PHASE

Farmer-cooperator, *Jon Bakehouse*, will:

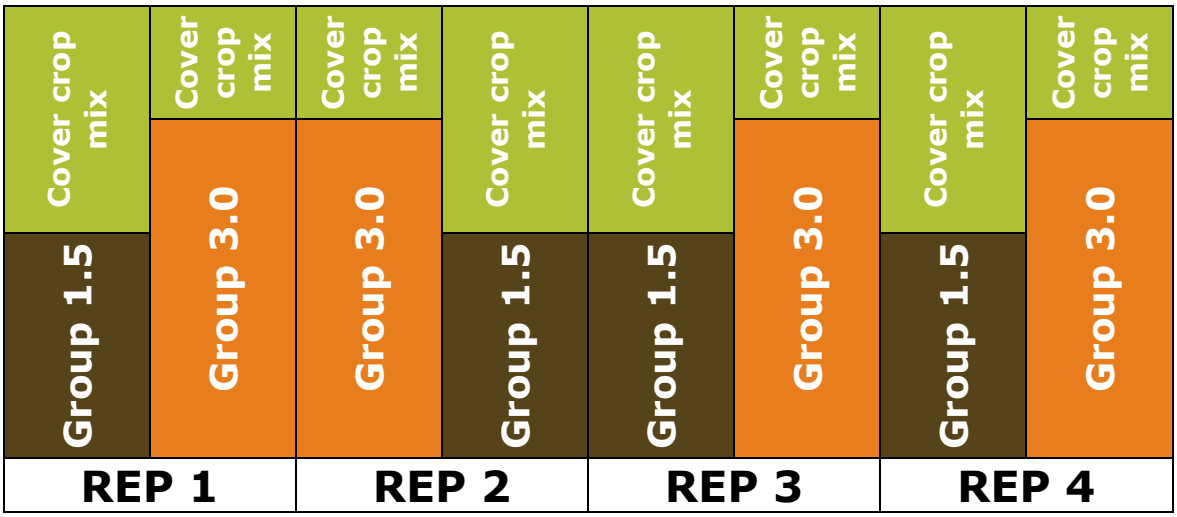
- Take photos throughout the project.
- Keep in contact with PFI with updates and questions.
- **Spring**, establish a minimum of 4 replications as shown in the diagram below with randomized and replicated strips of:
    - 104 RM corn (short-season); 109 RM corn (normal-season)
- Strips will be as wide as at least one combine pass and run the length of the field.
- **June,** collect soil samples from all strips for LSNT (12" deep) when corn is 6-8 inches tall.
- **August,** begin regularly monitoring corn grain moisture concentration.
- **Fall,** collect stalk samples for analysis from treatment strips when treatment reaches black layer.
- Harvest corn from treatment strips when grain in that treatment reaches 23% moisture.
- Plant cereal rye cover crop into strips immediately following harvest (early vs. late planting according to each corn variety harvest date).
- Collect biomass samples of cover crop from each strip; send to PFI.
- Collect soil samples from all strips (12" deep) for end-of-season soil nitrate levels.
- **Following Spring**, collect biomass samples of cover crop from each strip prior to terminating cover crops; send biomass to PFI.
- Plant soybeans into strips (see next page).



SOYBEAN PHASE

Farmer-cooperator, *Jon Bakehouse*, will:

- **Spring**, establish a minimum of 4 replications as shown in the diagram below with randomized and replicated strips of:
    - Group 1.5 soybeans (short-season); Group 3.0 soybeans (normal-season)
- Strips will be as wide as at least one combine pass and run the length of the field.
- **Summer**, conduct weed emergence counts (10 quads per strips) prior to postemergence control.
    - Take soil temperature readings in strips.
- **August,** begin regularly monitoring soybean grain moisture concentration.
- **Fall**, harvest soybeans from treatment strips when soybeans reach 11% moisture.
- Plant 3- or 4-way cover crop mix into strips immediately following harvest (early vs. late planting according to each soybean variety harvest date).
- Collect biomass samples of cover crop from each strip; send to PFI.
- Collect soil samples from all strips (12" deep) for end-of-season soil nitrate levels.
- **Following Spring**, collect biomass samples of cover crop from each strip prior to terminating cover crops; send biomass to PFI.
- Plant corn into strips (see previous page).



- ***Turn in all data to PFI at end of each growing season.***

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.
- Reimburse costs associated with soil sampling and lab analysis.
- Provide $550 compensation at conclusion of each project year.

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