



**RESEARCH  
 PROTOCOLS**

**Planting Corn In 60-in. Row-Widths for  
 Interseeding Cover Crops**

**Objectives:** Determine the effect of corn row-width on 1) grain yields and 2) biomass production of cover crops interseeded to the corn in early summer. **Hypothesis:** Corn planted in 60-in. row-widths will produce yields similar to corn planted in 30-in. row-widths, but the wider row-width will better accommodate the interseeded cover crops.

**Farmer-Cooperator will:**

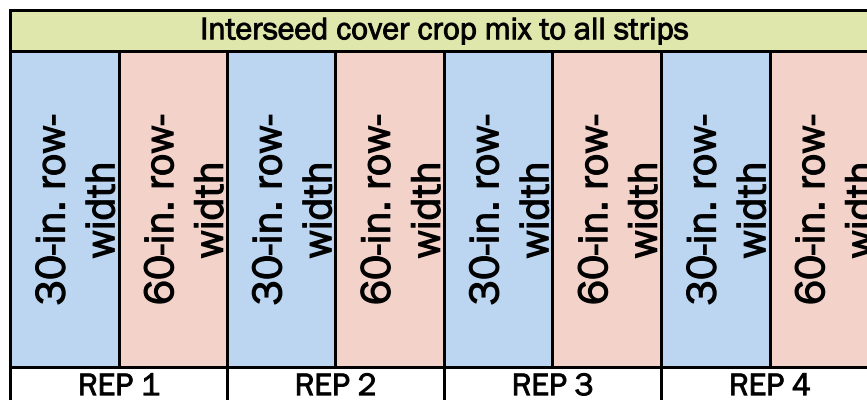
- Take photos throughout the project and keep in contact with PFI with updates and questions.

**Establish treatments**

- **Spring 2019**, establish at least 4 replications of treatments as shown in the diagram below.
  - Plant corn in 30-in. row-widths
  - Plant corn in 60-in. row-widths
- Strips will be as wide as at least one combine pass and run the length of the field.
- Interseed cover crop mix of cooperator's choosing to corn in all strips in late May/early June.

**Measurements**

- **Summer 2019**, collect data and observations (see next page for more detail)
  - Take photos of trial progress.
  - June: collect soil samples from each strip for late spring soil nitrate test. (pending funding)
  - September (physiological maturity of corn): collect cornstalk samples from each strip for nitrate analysis. (pending funding)
- **Fall 2019**, collect data and observations (see next page for more detail)
  - Collect aboveground biomass samples of cover crop from each strip prior to grain harvest.
  - Harvest corn 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.



**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.

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## Summer Data Collection Details

*June: Late-Spring Soil Nitrate Test soil sampling (corn is 6-12 in. tall)*

- Collect soil cores to a depth of 12 in.
- One sample per strip.
  - Collect samples in sets of 8 cores.
    - The first core is collected in a corn row.
    - The second is collected 1/8 of the distance between any two rows after moving to another part of the sampling area.
    - The third is collected 1/4 of the distance between any two corn rows after moving to another part of the sampling area.
    - The process is continued until the eighth core is collected 7/8 of the distance between any two corn rows.
  - At least three sets (24 cores) should be collected to comprise one sample.
- For more info, consult ISU Extension and Outreach publication “Use of the Late-Spring Soil Nitrate Test in Iowa Corn Production” (CROP 3140).
  - <https://store.extension.iastate.edu/Product/5259>

*September: Cornstalk nitrate testing (after physiological maturity of corn)*

- Consult these resources from Iowa State University for sample collection protocols
  - <https://store.extension.iastate.edu/product/Use-of-the-End-of-Season-Corn-Stalk-Nitrate-Test-in-Iowa-Corn-Production>
  - <https://store.extension.iastate.edu/product/End-of-Season-Cornstalk-Nitrate-Testing-Video>

*September/October: Collect aboveground biomass samples of cover crops prior to corn harvest.*

- Collect at least one sample 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
    - Corn row-width: 30-in. row-width or 60-in. row-width
    - 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, weighed and sent to lab for N analysis.