Objectives: Determine the effect of not planting every third corn row on 1) corn grain yields and 2) biomass production of interseeded cover crops.

Hypothesis: Not planting every third row of corn (skip row) will produce yields similar to corn planted in every row and will better accommodate the interseeded cover crops.

Farmer-Cooperator will:
- Follow Research Protocols in accordance with Project Design, Data to Collect, Photo List 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:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skip row</td>
<td>Skip every third row when planting corn. This results in two rows on 36-in. centers, followed by a 72-in. gap and two more rows on 36-in. centers (experimental practice). Plant soybeans in 72-in. gap. Interseed cover crops to corn in May/June.</td>
</tr>
<tr>
<td>Control</td>
<td>Plant corn in every row on 36-in. row-widths (typical practice). Interseed cover crops to corn in May/June.</td>
</tr>
</tbody>
</table>

- Apply these two treatments in a randomized, replicated trial: at least four replications of randomized paired strips. 2 treatments x 4 replications = 8 strips total.
- Cover crops for interseeding are entirely at the discretion of the cooperator.
- Strips must be at least as wide as one combine pass and should run the length of the field.
  - Example layout:

```
<table>
<thead>
<tr>
<th>Control</th>
<th>Skip row</th>
<th>Skip row</th>
<th>Control</th>
<th>Skip row</th>
<th>Skip row</th>
<th>Control</th>
</tr>
</thead>
</table>
```

Interseed cover crops to all strips

REP 1  | REP 2  | REP 3  | REP 4  |
Data to Collect (cooperator):
- Corn grain yield
  o Harvest and record yield and moisture from each strip.
- Cover crop biomass
  o Just prior to 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 plant material from a single square into one paper bag
    - Label paper bags accordingly
      - Rep #
      - Treatment: Skip row or Control
      - Number of squares sampled from (e.g., 1 square = 1 ft²)
      - Date of collection
    - Optional: Repeat this process 2-3 times per strip
      - (e.g., 2-3 paper bags per strip)
    - Send paper bags to PFI office
      - Samples will be dried and weighed

Photo List (cooperator):
- Corn emerging/growing in both planting arrangements (throughout season).
- Interseeding cover crops; equipment in field.
- Cover crops growing in interrows of both planting arrangements.
- Cooperator in field trial.

Project Timeline:

<table>
<thead>
<tr>
<th>Spring</th>
<th>Summer</th>
<th>Fall</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Plant corn in strips (see diagram on previous page).&lt;br&gt; • Take photos.</td>
<td>• Interseed cover crops to all strips.&lt;br&gt; • Take photos.</td>
<td>• Collect cover crop biomass samples just prior to corn harvest.&lt;br&gt; • Harvest corn from all strips.&lt;br&gt; • Turn in data and photos.&lt;br&gt; • Take post-project survey.</td>
</tr>
</tbody>
</table>

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

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.