**Objective:** Determine the effect of a common soybean seed treatment (neonicotinoid insecticide + fungicide) on yield and profitability.

**Hypothesis:** Soybeans grown from treated seed will produce yields no different from those grown from untreated “naked” seed; seed treatment is likely an unnecessary cost.

**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 between 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>Treated</td>
<td>Plant soybean seed treated with Gaucho (neonicotinoid insecticide) and metalaxyl (fungicide).</td>
</tr>
<tr>
<td>Naked</td>
<td>Plant seed with no seed treatment.</td>
</tr>
</tbody>
</table>

- Apply these two treatments in a randomized, replicated trial: at least five replications of randomized paired strips. 2 treatments x 5 replications = 10 strips total.
- 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>Naked</th>
<th>Treated</th>
<th>Treated</th>
<th>Naked</th>
<th>Naked</th>
<th>Treated</th>
<th>Treated</th>
<th>Naked</th>
<th>Naked</th>
<th>Treated</th>
</tr>
</thead>
<tbody>
<tr>
<td>REP 1</td>
<td>REP 2</td>
<td>REP 3</td>
<td>REP 4</td>
<td>REP 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
```
Data to Collect (cooperator):

- Costs
  - Document cost of seed treatment in order to calculate return on investment.
- Soybean plant population
  - Take stand counts in each strip three weeks and six weeks after planting.
- Soybean yield
  - Harvest and record grain yield and moisture from each strip.

Project Timeline:

<table>
<thead>
<tr>
<th>Spring 2020</th>
<th>Summer 2020</th>
<th>Fall 2020</th>
</tr>
</thead>
</table>
| - Terminate cover crop.  
  - Plant ‘Treated’ and ‘Naked’ soybeans in strips on same date.  
  - Take soybean stand counts.  
  - Take photos. | - Take soybean stand counts.  
  - Take photos. | - Harvest soybeans from all strips.  
  - Turn in data and photos.  
  - Take post-project survey. |

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