**Objective:** Determine which weed control system for tomatoes is more labor and cost-effective, and if there are yield differences between treatments.

**Hypothesis:** Yield will not be affected, but plots with landscape fabric will take fewer hours to manage.

**Farmer-Cooperator will:***
- Follow Research Protocols for study
- Take photos throughout the project
- Keep in contact with PFI with updates and questions
- Turn in all data 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 cooperator payment at conclusion of project year.

**Project Design:**
- A split-plot design will be used to evaluate the performance of fabric and straw on the same varieties of tomatoes.
- Data will be collected by plot; each variety of tomato will have a fabric and straw plot.
  - Labor time (by category of task)
  - Yield (marketable, harvested weight)
  - Input expenses for straw and landscape fabric
  - Weed pressure
  - Notes on ease of harvest, field management, instance of disease

**Example trial layout:**
Replications are indicated by (#). Each variety of tomato is a replication that contains 2 plots: 1 fabric and 1 straw. The trial has 8 replications.

<table>
<thead>
<tr>
<th>(1) Black Krim - Fabric</th>
<th>(2) Cosmonaut Volkov - Fabric</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Black Krim - Straw</td>
<td>(2) Cosmonaut Volkov - Straw</td>
</tr>
<tr>
<td>(3) Dr Wychee - Straw</td>
<td>(4) John Baer - Straw</td>
</tr>
<tr>
<td>(3) Dr Wychee - Fabric</td>
<td>(4) John Baer - Fabric</td>
</tr>
<tr>
<td>(5) Mountain Fresh - Fabric</td>
<td>(6) Pantoano Romanesco - Fabric</td>
</tr>
<tr>
<td>(5) Mountain Fresh - Straw</td>
<td>(6) Pantoano Romanesco - Straw</td>
</tr>
<tr>
<td>(7) Paul Robeson - Straw</td>
<td>(8) Redfield Beauty - Straw</td>
</tr>
<tr>
<td>(7) Paul Robeson - Fabric</td>
<td>(8) Redfield Beauty - Fabric</td>
</tr>
</tbody>
</table>

**Project Timeline:**
- Edit/Approve Protocol
- Complete MOU & pre-survey

### May - June
- Layout plots, fabric, straw
- Track labor *by plot*
- Transplant tomatoes (track labor *by plot*)
- Take photos:
  - Rolling out fabric
  - Spreading straw
  - Early-season field-scale photo of trial

### July – Oct.
- Harvest tomatoes (record plot weight for each harvest)
- Continue tracking labor by plot, task.
- Record weed suppression rankings
- Make notes about ease of management
- Take photos:
  - Late-season field-scale photo of trial
  - Examples of harvested tomatoes
  - Farmer harvesting
  - Farmer measuring or entering data! (bonus!)
- Enter data and photos to PFI’s google site: [https://sites.google.com/practicalfarmers.org/research/home](https://sites.google.com/practicalfarmers.org/research/home).
- Complete Post-Project Survey

**Contact:** Liz Kolbe, Horticulture and Habitat Programs Manager, (515) 232-5661; liz@practicalfarmers.org