Objective: High tunnel tomato growers are often focused on specialized hybrids. We are interested in determining if our preferred heirloom varieties perform as well inside the high tunnel as outside.

Hypothesis: We expect the indoor heirlooms to have comparable quantity, but earlier yields than field-grown heirlooms of the same varieties.

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 2019

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:
- Each farm will set up a randomized, replicated trial in the field and in the high tunnel. The field should have four replications, and the high tunnel should have four replications.
- 2 varieties x 4 replications = 8 plots in the high tunnel, 8 plots in the field
  - Faux varieties: Paul Robeson, Black Krim
  - Raasch varieties: Cherokee Carbon, Black Krim
  - Each plot should have at least 5 plants.
- Planting dates and growing practices can be determined by farm, but recorded in provided excel workbook.

Example layout (high tunnel or field):

<table>
<thead>
<tr>
<th>Rep1</th>
<th>Rep2</th>
<th>Rep3</th>
<th>Rep4</th>
</tr>
</thead>
<tbody>
<tr>
<td>C. Carbon</td>
<td>Black Krim</td>
<td>Black Krim</td>
<td>C. Carbon</td>
</tr>
<tr>
<td>Black Krim</td>
<td>C. Carbon</td>
<td>C. Carbon</td>
<td>Black Krim</td>
</tr>
</tbody>
</table>

Data to Collect (see excel workbook):
- Harvest tomatoes as mature, keep records by plot and harvest date. Record weight and count of marketable fruit harvested by plot.
- Take photos of harvested tomatoes (each variety), and the plants in the field and the high tunnel.
- In notes section of workbook, indicate issues with disease, pests, and quality of fruit.
- See excel workbook for pick sheets and data entry.
**Project Timeline:**

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>• Edit/Approve Protocol</td>
<td>• Start seed</td>
<td>• Turn in data and photos</td>
</tr>
<tr>
<td>• Send Liz seeds needed</td>
<td>• Layout plots</td>
<td>• Take post-survey</td>
</tr>
<tr>
<td>• Complete MOU &amp; pre-survey</td>
<td>• Update other cooperators and PFI</td>
<td></td>
</tr>
<tr>
<td>• Liz will order seed</td>
<td>• Conduct trial and collect data! Take photos!</td>
<td></td>
</tr>
</tbody>
</table>

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