



## RESEARCH PROTOCOLS

### Early-Season Spinach Variety Trial

**Objective:** Determine which spinach variety provides the best yield and quality, primarily resistance to bolting, during early-season production in Iowa.

**Hypothesis:** Farao performed well in 2019, and will be the variety we measure against for consistent production and quality.

#### 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:

- Each farm will set up a randomized, replicated trial with four replications of the three varieties.
- Each farm will run two successions of the trial.
- 3 varieties x 4 replications = 12 plots
  - Space, Bloomsdale, Kolibri
  - Some farms are direct seeding; others are transplanting with a paperpot transplanter.

Example layout for one succession:

Rep1	Rep2	Rep3	Rep4
Space	Kolibri	Bloomsdale	Space
Bloomsdale	Space	Kolibri	Bloomsdale
Kolibri	Bloomsdale	Space	Kolibri

#### Data to Collect (see excel workbook):

- Harvest should occur early in the morning. Score **plot** for bolting and flavor. Weigh harvest in field, **by plot**, prior to washing.
- Loft: Either in the field or in the packing house, score each plot for loft (how well it fills a bag filled to equal weight). Score as “much loft, some loft, or no loft”.
- Record weight and count harvested by plot.
- Take photos of varieties in the field and in the packinghouse.
- See excel workbook on google site for harvest sheets, scoring, and data entry.

## Project Timeline:

- Review research protocol
- Complete MOU and pre-project survey

### April

- ~April 1: Direct seed or transplant Succession 1 to field in randomized trial design.
- ~April 15: Direct seed or transplant Succession 2 to field in randomized trial design.
- Take photos: Early-season field-shot of trial

### June - July

- ~June 1: Begin harvesting spinach; record yield and quality data by plot.
- Take photos!
  - Spinach at harvest (in bins, etc)
  - Representation photos of bolting, other issues, etc.
  - Farmer harvesting
  - Farmer measuring or entering data!

- Enter data and photos to PFI's google site:  
<https://sites.google.com/practicalfarmers.org/research/home>.
- Complete post-project survey.

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