



## RESEARCH PROTOCOLS

### Oat Selector Tool Variety Trial

**Objective:** Test and strengthen a genotype by environment model for predicting top-performing oat varieties in Iowa.

**Hypothesis:** Model-predicted variety will have higher yields than the control/comparison variety in 2020.

**Farmer-cooperator will:**

- Follow Research Protocols in accordance with Project Design and Data to Collect detailed below.
- Take photos throughout the project. Try to capture photos that depict the differences you observe among the varieties.
- Keep in contact with PFI with updates and questions.
- Turn in data and photos by September 2020.

**Project Design:**

- Two treatments
  1. **Esker2020:** Oat variety selected by the farmer using traditional methods (the variety you've historically used, reviewing variety trial results, talking with seed dealer, etc.)
  2. **Deon:** Oat variety predicted to yield the best by a genetics by environment model
- 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.
- Strips must be at least as wide as one combine (or swather) pass and should run the length of the field. (This is to ensure that harvest passes are separate by variety)
  - Example layout:

	Previous Crop Summer Cover	Previous Crop Corn
REP 1	Deon	Deon
	Esker2020	Esker2020
REP 2	Esker2020	Esker2020
	Deon	Deon
REP 3	Deon	Deon
	Esker2020	Esker2020
REP 4	Deon	Deon
	Esker2020	Esker2020

**Use your typical fertility, pest management, and tillage practices on each of the eight strips. Do not treat the strips differently.**

**Data to Collect (cooperator):**

- Oat grain yield and moisture percent (summer 2020)
  - Harvest and record grain yield and moisture **from each strip**.
- Oat grain samples (summer 2020)
  - At harvest, bag samples of harvested oat grain **from each strip**. Mail samples to Lucia Gutierrez' lab at UW Madison for analysis.

**Practical Farmers of Iowa will:**

- Assist cooperator to set up research protocol, monitor progress of project and provide support when needed.
- Coordinate procurement of selector tool variety seed when needed.
- Assemble and mail a kit of labelled sample bags and protocol for grain sampling.
- Publish results in a PFI research report, on PFI website, and potentially other outlets.
- Provide \$550 research honorarium to cooperator upon receipt of data.
- Reimburse cooperator up to \$300 for oat seed used in the experiment.

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