



**RESEARCH
 PROTOCOLS**

**Keeton Seed Firmers for Organic Corn
 Emergence and Weed Control**

Objective: Determine the effect on corn seedling emergence, corn yield and weed control when using Keeton seed firmers to plant corn in an organic production system.

Hypothesis: Keeton seed firmers will improve corn yield by improving rate and uniformity of corn seedling emergence and reducing emergence of weeds in the corn row.

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 among the treatments.
- Keep in contact with PFI with updates and questions.
- Turn in data and complete post-project survey by November 2020.

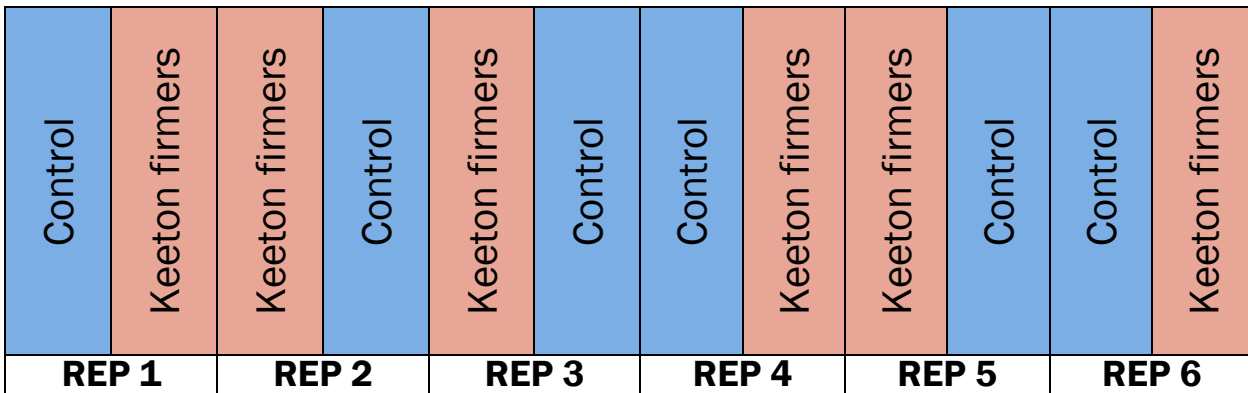
Practical Farmers of Iowa will:

- 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:

Treatment	Description
Keeton firmers	Plant corn with Keeton seed firmers installed on planter row-units.
Control	Plant corn without seed firmers installed on planter row-units.

- Apply these 2 treatments in a randomized, replicated trial: six replications of randomized paired strips. 2 treatments x 6 replications = 12 strips total.
- Strips must be at least as wide as one combine pass and should run the length of the field.
 - Example layout:



Data to Collect (cooperator):

- Corn seedling emergence
 - After corn seedlings have emerged, conduct stand counts in each strip.
 - Count and record number of seedlings from a distance along a row representing 1/1,000th of an acre.
 - Optional: repeat every day for 5-6 days.
- Weed assessment??
 - Visually observe?
- Corn yield
 - Harvest and record grain yield and moisture from each strip.

Photo List (cooperator):

- Keeton seed firmer on planter row-unit
- Corn seedlings emerging.
- Cooperator collecting data.
- Cooperator in field trial.

Project Timeline:

Spring	Summer	Fall
<ul style="list-style-type: none">• Plant corn to entire field.• Conduct stand counts• Take photos.	<ul style="list-style-type: none">• Conduct weed assessment?• Take photos.	<ul style="list-style-type: none">• Harvest corn from all strips.• Turn in data.• Take post-project survey.

Contact: Stefan Gailans, Research and Field Crops Director, (515) 232-5661; stefan@practicalfarmers.org