

# Field Crops Research Protocols

## No-Till vs. Strip-Till Corn and N Rate Following Cover Crop

**Objective:** Determine effect of N rate on corn planted in wide rows and interseeded with a cover crop in late spring.

**Farmer-cooperator will:**

- Take photos throughout the project and keep in contact with PFI with updates and questions.
- **Fall 2017**, seed cover crop.
- **Spring 2018**, establish 4 replications as shown in the diagram below of the following treatments:
  - **No-till + LOW side-dress N rate**
  - **No-till + HIGH side-dress N rate**
  - **Strip-till + LOW side-dress N rate**
  - **Strip-till + HIGH side-dress N rate**
  - LOW and HIGH N rates TBD.
- Strips will be as wide as at least one combine pass and run the length of the field.
- Collect aboveground biomass samples of cover crop from strips near termination.
- Terminate cover crop in all strips on same date.
- Plant corn to all strips on same date.
- Allow Dr. Alison Robertson's team to sample corn seedlings for disease prevalence.
- Work with Theo Gunther at Iowa Soybean Association to coordinate soil and biomass sampling.
- Apply side-dress N rates to all strips on same date.
- **Summer 2018**, take photos of crop progress.
- Allow Dr. Robertson's team to sample mature corn plants for stalk disease prevalence.
- **Fall 2018**, harvest corn from strips individually.
- Turn in data to Practical Farmers of Iowa at the end of the project.

LOW N rate	HIGH N rate	LOW N rate	HIGH N rate	LOW N rate	HIGH N rate	LOW N rate	HIGH N rate	LOW N rate	HIGH N rate	LOW N rate	HIGH N rate	LOW N rate	HIGH N rate	LOW N rate	HIGH N rate
No-till		Strip-till		No-till		Strip-till		No-till		Strip-till		No-till		Strip-till	
REP 1				REP 2				REP 3				REP 4			

**Practical Farmers of Iowa will:**

- Help coordinate with Dr. Robertson (ISU) and Theo Gunther (ISA).
- Help set up monitoring 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 compensation at conclusion of the project in 2018.

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*The terms of this Research Protocols document are subject to the terms of the individual Research Cooperator's Memorandum of Understanding agreement with PFI. To the extent these terms may differ or conflict, the Memorandum of Understanding shall control.*