Objective: Quantify the agronomic and economic effect on corn yields receiving a high and low nitrogen rate following two different green manure cover crop mixes seeded after cereal rye harvest.

Farmer-cooperator will:
- Take photos throughout the project.
- Keep in contact with PFI with updates and questions.
- Late summer 2015, plant green manure cover crop mixes after cereal rye harvest in two fields
  - Field 1: oilseed radish + rapeseed + cereal rye.
  - Field 2: hairy vetch + Austrian winter pea + cereal rye.
- Fall 2015, collect aboveground biomass samples in both fields for dry matter, total C and total N analysis.
  - After biomass collection, graze mixes in both fields with cattle into winter.
- Spring 2016, collect aboveground biomass samples of regrowth in both fields for dry matter, TC and TN.
- Terminate the green manure cover crop mixes in both fields.
- Plant corn of the same variety and plant population across the both fields; apply 70 lb N/ac to entire field in both fields.
- Establish a minimum of 3 replications in both fields as shown in the diagram below with randomized and replicated strips of:
  - 70 lb N/ac (Low N)
  - 70 lb N/ac + sidedress rate determined by LSNT (High N)
- Strips will be as wide as at least one combine pass and run the length of the field
- Fall 2016, harvest corn in strips, record yield of each strip from both fields.
- Turn in data to Practical Farmers of Iowa at the end of project.

Practical Farmers of Iowa will:
- 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 2016

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