IOWA STATE UNIVERSITY
Department of Agricultural and Biosystems Engineering

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Economic Analysis and Utilization of Row Crop Skipped Row Openings

Cedar Valley Innovation, LLC, Waterloo, Iowa

Problem Statement

- CVI LLC trials have shown that corn can be planted with periodic skipped rows without yield loss, and in some cases, yields can be increased.
- Companion and cover crops planted in skipped rows are one way in which these unplanted rows can be beneficial.
- If no yield loss is realized when skipping a row at pre-determined intervals, the skipped row crops can be used to help build the soil and provide additional nutrients in-season.
- Analysis will be done to make a recommendation on how to best utilize skipped rows in corn fields.

Objectives

- Generate alternative proposals for utilization of the open row space.
- Create a list of benefits, costs, and risks associated with each alternative proposed use of the open spaces.

Scope

- Final product will not be an analysis of past yield information, but rather a recommendation for how to effectively use the unplanted space when a row is skipped.

Previously Researched Plot Configurations for Future Companion/Cover Crop Trials

Benefit to Client

- Whether or not to plant companion and/or cover crops on future Cedar Valley Innovation research plots.
- Whether or not planting companion and/or cover crops to utilize skipped row openings makes sense economically and environmentally.

Methods

- Analyze current companion/cover cropping methods and strategies.
- Compare weed management, fertility, and erosion control strategies for different forms of ground cover.
- Determine what companion or cover crops will most effectively fill open space.

Proposed Solutions

- Utilize the skipped row openings by planting companion crops.
- Utilize the skipped row openings by planting cover crops.

Major Outcomes

- Prepare a final report with supporting data, reasoning, and cost/benefit analysis that is understandable by a grower.
- Make a recommendation for specific configurations to be tested on the Cedar Valley Innovation plots in 2018.
- Make a recommendation for specific configurations for potential research plots conducted by Iowa State University in 2018.
- Create a list of guidelines for managing the recommended plots, especially with regard to chemical treatment, species selection, and termination strategy.

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