Interim Report: Developing a New Technology to Protect Brassica Crops from Cabbage Maggot Feeding Damage

Due to several personnel delays in the las year, progress has been delayed in staying on project timeline. However, we have made clear progress and look forward to showing more results this winter. A quick recap of progress follows. We look forward to present additional details this winter.

Objectives:
Objective 1. Develop methods for application of hydromulch during planting or transplanting operations.
1a. Fabricate a hydromulch application system. We successfully combined off-the-shelf pieces of equipment to fabricate a tractor mounted system allowing for field application of hydromulch test products. The equipment is currently used to apply a broadcast type spray across the seed bed but can be modified to spray only within plant rows to decrease application volume. This equipment will be sufficient to complete all field scale trials for efficacy of products.

1b. Optimize the hydromulch mixture. One student project over the summer of 2023 targeted optimizing a barrier mixture to replace high-cost hydromulch products. Multiple ingredients were tested and applied to greenhouse trials to assess efficacy compared with commercial products. Data analysis is still in progress and a second trial run is expected in November 2023.

Objective 2. Evaluate the efficacy of hydromulch at reduction of cabbage maggot damage in the field.

We completed two fields to compare control of hydromulch to various pesticides and pesticide timing applications. Data analysis is still in progress but preliminary results indicate hydromulch was at least as effective as any pesticide treatment, and may have provided better control than treatments that included a single, at planting application.