Covering Ground: Interseeded Cover Crops in Late Season Sweet Corn

The Agroecology Lab

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United States Department of Agriculture
National Institute of Food and Agriculture

The Problem

- Maine survey showed that 78% of farmer respondents (n=21) are limited in their ability to plant cover crops due to “late season cash crops coming out too late”.

- 74% of respondents (n=20) stated that research-based data about interseeding in the Northeast would help them with decision making about late season cover cropping

Lilley and Schattman, 2020

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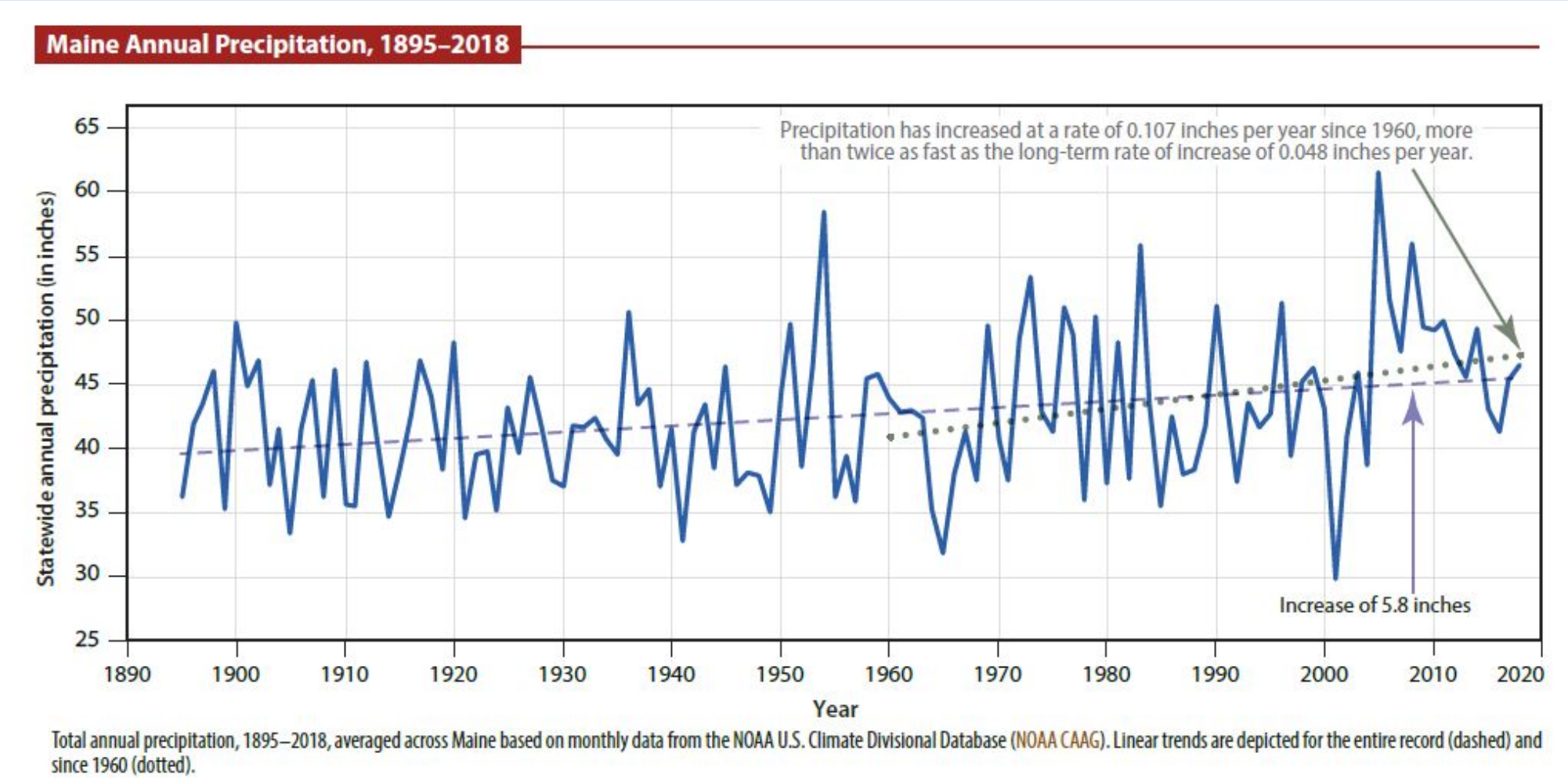
The Problem



The northeast is forecasted to experience longer spring wet periods in coming decades, making bare spring soils increasingly vulnerable.

Fernandez, I., S. Birkel, C. Schmitt, J. Simonson, B. Lyon, A. Pershing, E. Stancioff, G. Jacobson, and P. Mayewski. 2020. Maine's Climate Future 2020 Update. Orono, ME: University of Maine.

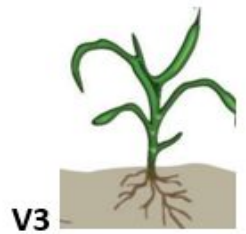
Heavy mid-season rains can degrade soils between crops.

Our Approach and Methods

Explored the Impact of Timing, Seeding Methods, and Species Selection

Trial A

Timing



Seeding Methods

Broadcast

Broadcast and Incorporate

Drilling

Trial B

Cover Crop Species

1. Annual rye grass + Crimson clover (25 lb/A 60% ryegrass:40% clover)
2. Oats + Field peas (100lb/A 50%:50%)
3. Winter rye grass + Hairy vetch (55lb rye, 25 lb vetch/A)

Variety

Montauk

Spacing

30” between rows

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Project Timeline	Trial Dates
Crop Planted	June 28
1st Cover Crop Seeding (V3)	July 18
2nd Cover Crop Seeding (V5)	July 31
3rd Cover Crop Seeding (V7)	August 7
Harvest	September 17

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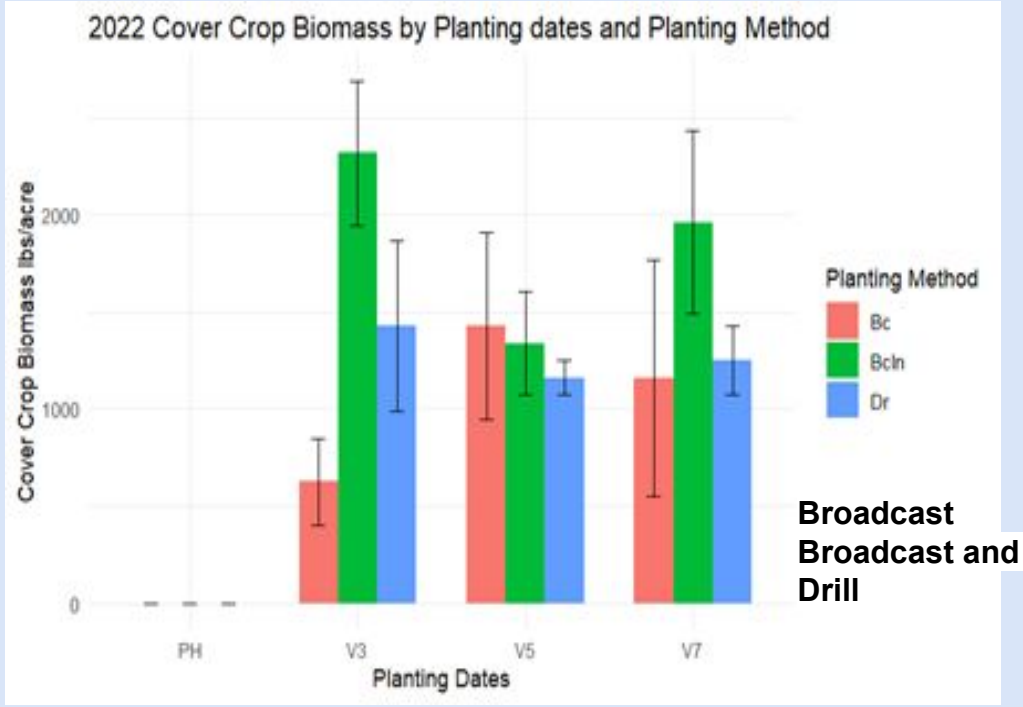
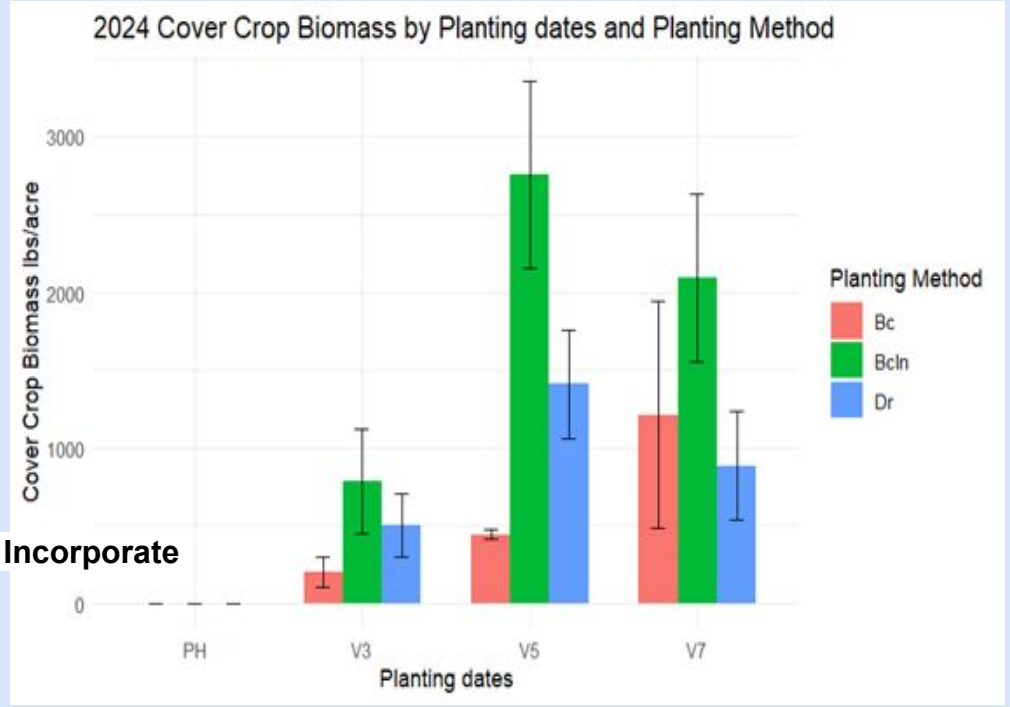
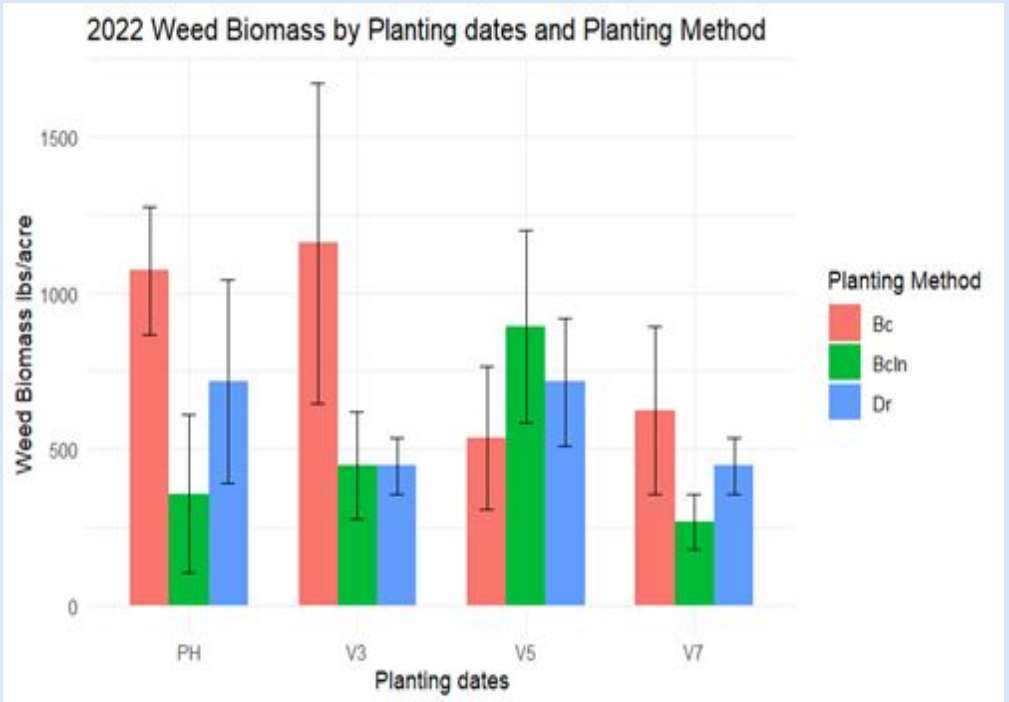
Cover Crop Biomass and Weed Biomass by Treatment





Broadcast
Broadcast and Incorporate
Drill



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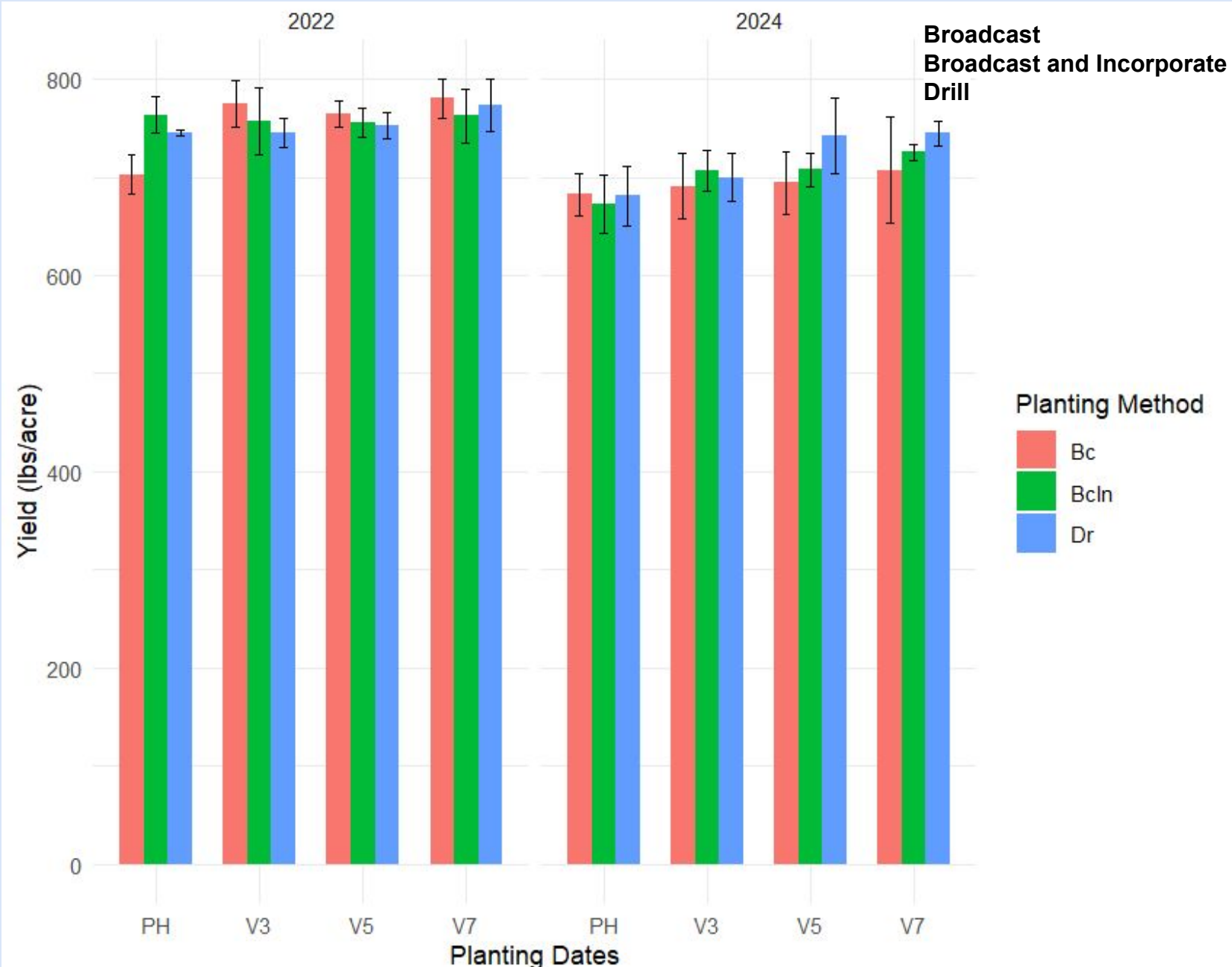
Cover Crop Planting Date and Plant Method on Sweet Corn Yields



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V3 Broadcast Incorporate

V5 Broadcast Incorporate

V7 Broadcast Incorporate

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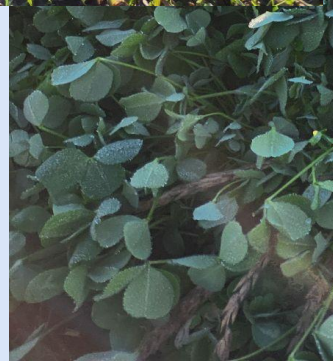

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Corn Species Cover Crops

Annual Ryegrass+
Crimson Clover

Oats+Field Peas

Control

Winter Rye+
Hairy Vetch

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Broadcast at Last Cultivation

Ground Driven or Electrical Hoppers

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Orbit Air Seeder for sidedressing or interseeding in corn.

- Drop tube has deflectors to spread seed
- Lilliston cultivators for incorporation.

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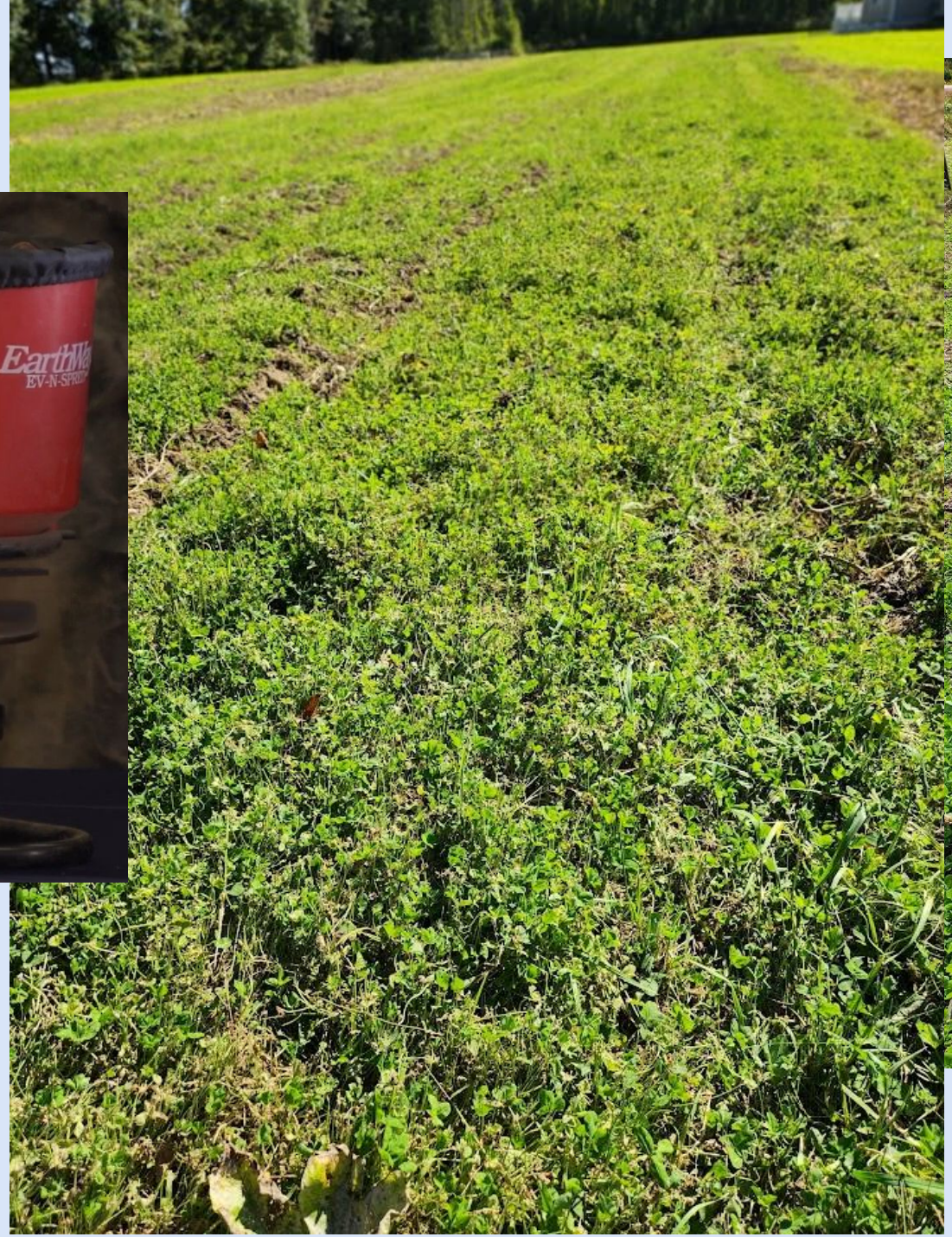
Scotts

Logistical Considerations

- Row Spacing
- Herbicide Interactions
- Pest Concerns
- Labor Demands at Seeding Time



Winter Squash Overseeded at Vine Run

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Take Away

1. Cover crop planting date affects cover crop biomass and potential to disrupt management
2. Ideal timing aligns with last cultivation/access to the field
3. Incorporation of seed enhances germination in dry years.
4. Experiment with interseeding in different crops

Agroecology lab members

- Kylie Holtz (Mgr)
- Ian Farm (Mgr)
- Rose Duane
- Chelsea Gilgan
- Charlie Cooper
- Payton Bledsoe
- Mary-Kate (MK) Smith
- Griffin McDevitt
- Ryan McAulay
- Megan Smith

Farm manager

- Joe Cannon

Committee members

- Dr Rachel Schattman (Advisor)
- Jason Lilley (Co-Advisor)
- Dr Ivan Fernandez
- Dr. Stephanie Burnett
- Dr. Allison Gardner

Collaborating farms

- R. Belanger & Sons Farms
- Goranson Farm
- Jordan's Farm
- Bumbleroot Organic Farm

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