EFAO FIELD CROPS 2020: Research Protocol

Amendments to hasten emergence of no-till planted spring cereals

Farmer-Researcher: Ken Laing, Orchard Hill Farm - West

Research Priorities: Soil Health, Cover Crops

EFAO Contact: Sarah Hargreaves, sarah@efao.ca

Objective

Do liquid amendments and/or biological seed amendments for the spring cereal seed hasten the emergence and increase yields in oats no-till planted into daikon radish winter killed cover crop?

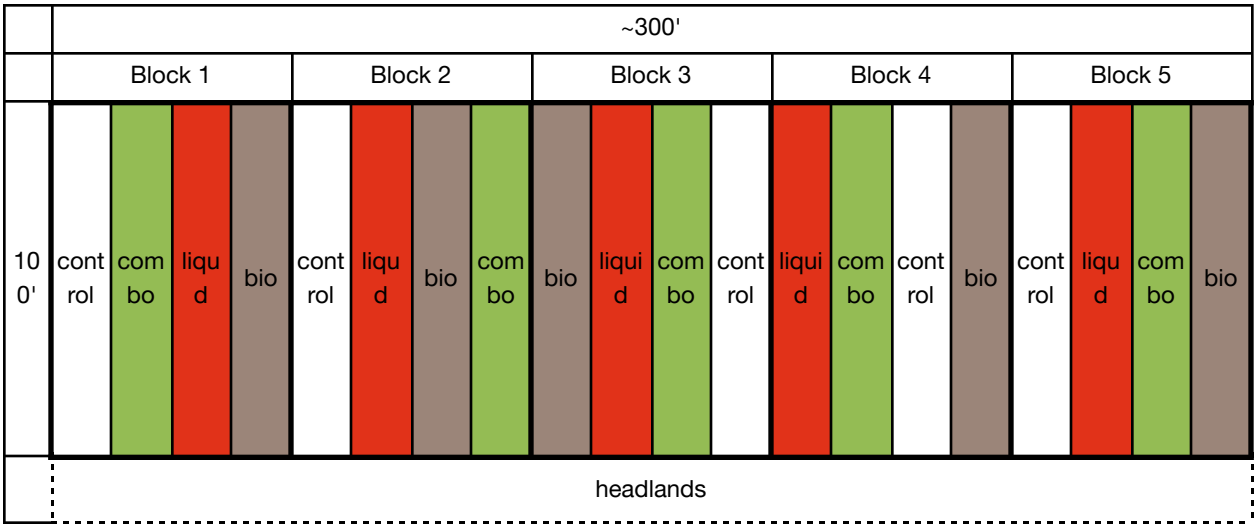
Background

Early no-till planting of spring cereals often results in slow emergence because the soil biology has not woken up to support the newly planted seed. This is a continuation of Ken's 2019 trial, which can be found at: https://efao.ca/wp-content/uploads/EFAO-Laing-2019.pdf

Experimental Design

Full factorial, randomized complete block design with 5 blocks (replicates).
Treatments

- Control - no amendment
- Liquid amendments - molasses 2 litres/ac + fish emulsion 9 litres/ac mixed with water and applied right in seed trench
- Biological amendment - Phyter Seed root enhancing seed coating - 1.6 gr/bu of seed oats mixed with water and sprayed on seed before putting seed into drill
- Combined amendments (same rates as above)



Measurements

- Days to emergence
- Yield

Research Plan

Time	Task	Methods & Measurements or Action Item
	Mark plots	Mark out plots according to design above
	Seed oats	Applying liquid amendments, biological amendment, and the combination of both according to design above
	Days to emergence measurement	**Days to Emergence** • Observe and record days to emergence for **each plot**
	Management	Manage as per standard farm practices
	Yield measurements	**Yield** • Measure yield from each plot
September 30, 2020	Submit data and photos	Submit data and photos to Sarah
After submission	Invoice	Send Sarah invoice for farmer-fee

Materials

Please list all the equipment that you need for this project. Indicate “in-kind” under Total Cost for any materials that you already own or have access to. For pre-approved research expenses, for which you will be reimbursed, please indicate cost.

Material	Quantity Required	Total Cost*	Note
Molasses	.69 litres	In-kind	
Fish emulsion	3.1 litres	In-kind	
Phyter Seed	1.64 gr	@$1/gr = $1.64	
Oat seed	150lb - 3 bags	3x$19= $57.00	
Total		$58.64	

* For approved research expenses

Farmer-fee: $500, invoiced to EFAO after farmer-researcher submits data.

Memorandum of Understanding

Farmer-researchers agree to keep an active membership with EFAO throughout the duration of their trial. Reimbursement for research expenses and farmer-fees will be paid to current members only.

Please also refer to efao.ca/farmer-led research for a **Memorandum of Understanding** of other responsibilities. Specifically refer to sections:

- *What is expected of me as a farmer-researcher?*
- *What support will I receive from EFAO as a farmer-researcher?*

To check the status of your membership, log in here: https://efao.z2systems.com/np/clients/efao/login.jsp or contact Martina, martina@efao.ca.