

Trial Seven (B) Fertility Trial: Liquid vs. Granular (Project 2)

River Crest Farms

Project Goal: To compare liquid started fertilizer types when using a planter seeding implement. *For additional information, see “Trial 7 Equipment & Fertility Trial Summary”.*

Equipment Description: Planter: CASE 1245 Early Riser Planter - 38.6 ft Width on 15-inch Row Spacing (31 Rows)

Omex TnT Starter Fertilizer:

Description: OMEX TNT is a liquid starter fertilizer that is designed to provide essential nutrients to plants during the early stages of growth. It typically contains a combination of nitrogen, phosphorus, and potassium, which are crucial for promoting strong root development and early plant vigor. As per manufacturer information: *With the combination of Poly/Ortho Phos, TPA and Carboxylates, your crop will have access to the all-important phosphorus; faster and longer during its key growth stage. TPA protects the phosphorus and reduces its tie-up with calcium (alkaline soils) or with iron/aluminum (acidic soils). TPA improves phosphorus efficiency. It provides newly germinated seedlings with enough energy early, to find and make use of side placed fertilizer sooner and more efficiently. it works to free up key nutrients and provides superior phosphorus and nutrient uptake when your crop needs it most.”* **TnT Starter contains:** OMEX Starter P (9-32-2) with TPA + Carboxylate; OMEX Humic 12%; And micronutrients (B, Zn, Mn, Cu, Fe)

The specific formulation of OMEX TNT may vary, but the goal is to deliver a balanced nutrient mix that supports healthy plant establishment. For detailed information on OMEX TNT, including specific formulations and application guidelines, it's best to refer to the manufacturer's product specifications or contact their customer service for the most up-to-date information.

Application Rate: 3-5 US gal/ac in seed row

Cost Per acre: \$42.50

Advantages:

1. **Rapid Absorption:** Liquid fertilizers are quickly absorbed by plants, providing a fast nutrient boost.
2. **Application Flexibility:** They can be applied through irrigation systems, foliar spray, or directly to the soil, offering flexibility in application methods.
3. **Nutrient Precision:** Liquid fertilizers allow for precise nutrient application, which can be beneficial for addressing specific nutrient deficiencies.
4. **Low salt index** for safer seed placement in seed row.

Disadvantages:

1. **Storage and Handling:** They require careful storage and handling to prevent spills and ensure proper dilution and application.
2. **Cost:** Liquid fertilizers can be more expensive on a per-nutrient basis compared to granular fertilizers, due to transportation, manufacturing and packaging costs.
3. **Equipment:** Increased investment in handling and application equipment, and transportation

10-34-0 Liquid Fertilizer:

Description: 10-34-0 liquid fertilizer is a high-phosphorus fertilizer commonly used in agriculture. The numbers 10-34-0 represent the ratio of nitrogen (N), phosphorus (P), and potassium (K) in the fertilizer. In this case, it contains 10% nitrogen, 34% phosphorus, and no potassium.

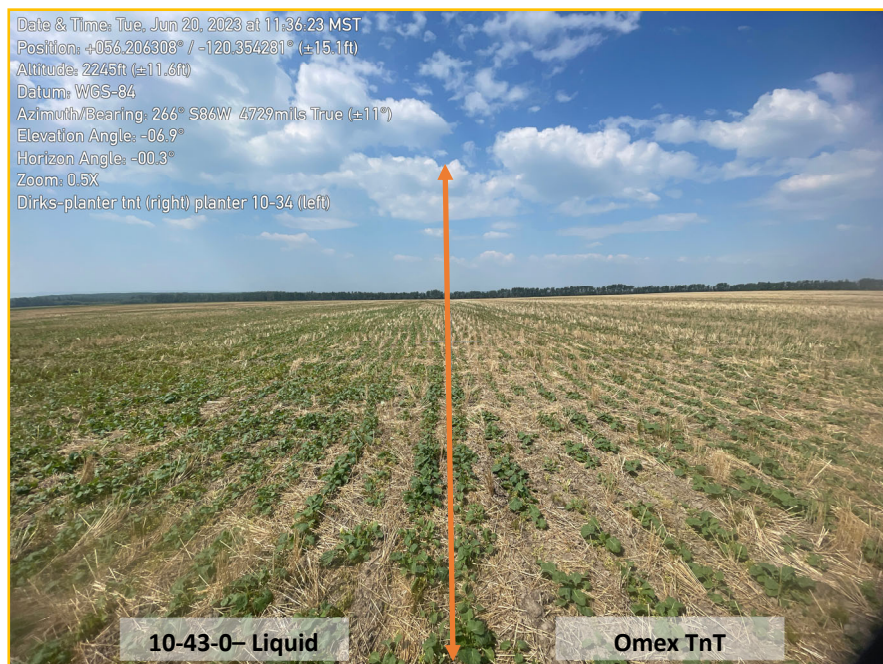
This particular formulation is especially useful for promoting root growth and early plant establishment due to its high phosphorus content. It is often used when a crop requires a significant amount of phosphorus during its early growth stages. The liquid form allows for easier application and absorption by plants.

Application rate: 4.5 us gallons/ac.

Cost Per acre: 24.51/ac.

Advantages: Many of the advantages of the liquid 10-34-0 are the same as the Omex TNT, although it is high salt index and has no micronutrients.

Disadvantages: Same as other liquid fertilizers.



Yield Comparison

Starter Fertilizer Comparison Yield

Plot #	Description	Acres	Mt per acre	lbs/ac	bu/ac bushel	Adjusted for moisture bu/ac
5B	OMEX TnT Rep 1	0.74	0.809	1783.784	35.68	37.09
7B	OMEX TnT Rep 2	0.74	0.858	1891.892	37.84	38.65
3B	OMEX TnT Rep 3	0.74	0.932	2054.054	41.08	42.56
	Average	0.74	0.87	1909.91	38.20	39.43
1B	10-34-0 Rep 1	0.73	0.982	2164.384	43.29	44.92
4B	10-34-0 Rep 2	0.74	1.005	2216.216	44.32	46.08
8B	10-34-0 Rep 3	0.74	0.944	2081.081	41.62	43
	Average	0.74	0.98	2153.89	43.08	44.67

No foliar fertility was applied to these replications

Moisture & Oil Content		
Description	Moisture	Oil Content
10-34-0	6.24%	44.50%
OMEX TnT	6.43%	45.90%
10-34-0	6.05%	46.10%
OMEX TnT	6.06%	44.70%
OMEX TnT	7.88%	43.80%
10-34-0	6.71%	44.50%

Cost Analysis 10-34-0 Vs OMEX TNT No Foliar Fertility							
	Actual Bu/ac	Difference in Bu/ac	Product Cost	Bushels required to cover product cost	Bushels required to cover product cost	\$ gain / loss @	\$ gain / loss @
	Adjusted to 10% moisture	from Check	Per Acre	Grain Price @ \$17/bu	Grain Price @ \$14.50/bu	Grain Price @ \$17/bu	Grain Price @ \$14.50/bu
Planter TNT OMEX fert	39.43	-0.57	\$42.50	2.50	2.93	-\$9.69	-\$8.27
Planter 10-34-0 Liquid Fert	44.67	4.67	\$24.51	1.44	1.69	\$79.39	\$67.72
Drill 11-52-0 dry phos (CHECK)	40	0	\$19.47				

*Check Yield Based on average of all plots

Trial Seven (B) Fertility Trial: Foliar Fertility (Project 3)

River Crest Farms

Project Goal: To compare the effects on yield of foliar fertilizer application in canola to no foliar fertility. For additional information, see “Trial 7 Equipment & Fertility Trial Summary”.

Foliar applied fertilizer has several advantages, including rapid nutrient absorption by plants, the ability to address nutrient deficiencies quickly, and reduced nutrient leaching into the soil. Additionally, foliar feeding can be a way to provide nutrients to plants that have difficulty absorbing them from the soil. In addition foliar application can provide stress relief from plants during poor environmental conditions (drought, in this case).

On the downside, foliar applied fertilizers may not provide long-term soil benefits, and they can be more labor-intensive than soil applications. There can also be limitations to the amount of nutrients that can be absorbed through the leaves, and overapplication can lead to leaf burn or toxicity.

Foliar Fertility Application:

Manufacturer Description: “Triple Ten™ (10-10-10) is a liquid fertiliser combining a hot mix N-P-K blend, chelated trace elements and natural growth promotants. These natural growth promotants include fulvic acid, seaweed fertiliser and vitamins. Veg-Tech Triple Ten™ represents state-of-the-art, crop-specific fusion fertilising.” For additional information visit manufacturer website www.nutri-tech.com

Foliar Fertility Pass #1:

Date: June 12, 2023.

The first pass foliar was done with the herbicide Triple Ten from Agsol at 1l/ac and 3gal 18-0-0. Triple Ten is a comprehensive blend of micronutrients and plant stimulants.

Cost Per Acre: 10-10-10 = \$12.00/ac, Urea = \$9.25/ac.

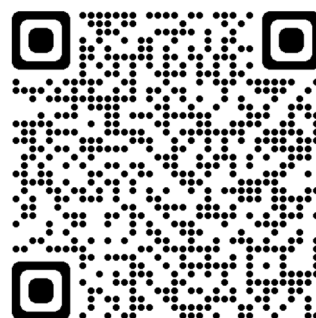
Foliar Fertility Pass #2:

Date: July 3, 2023.

Second pass was a custom blend of different products that included: phi42 from ATP as phos source; boron; Mo; fulvic acid; and 3 gal 18-0-0. This custom blend was based on sap plant tissue analysis samples that were sent to Future Analytics (an independent lab in Red Deer, Alberta). A sap (Stem-Immersion Sampling) plant tissue test involves taking a sample of plant tissue, typically the stem, and immersing it in a solution to extract the plant sap. This sap is then analyzed to assess the plant's nutrient levels and overall health. The test helps in determining nutrient deficiencies or excesses, allowing for tailored fertilization and adjustment of nutrient management practices to optimize plant growth and yield.

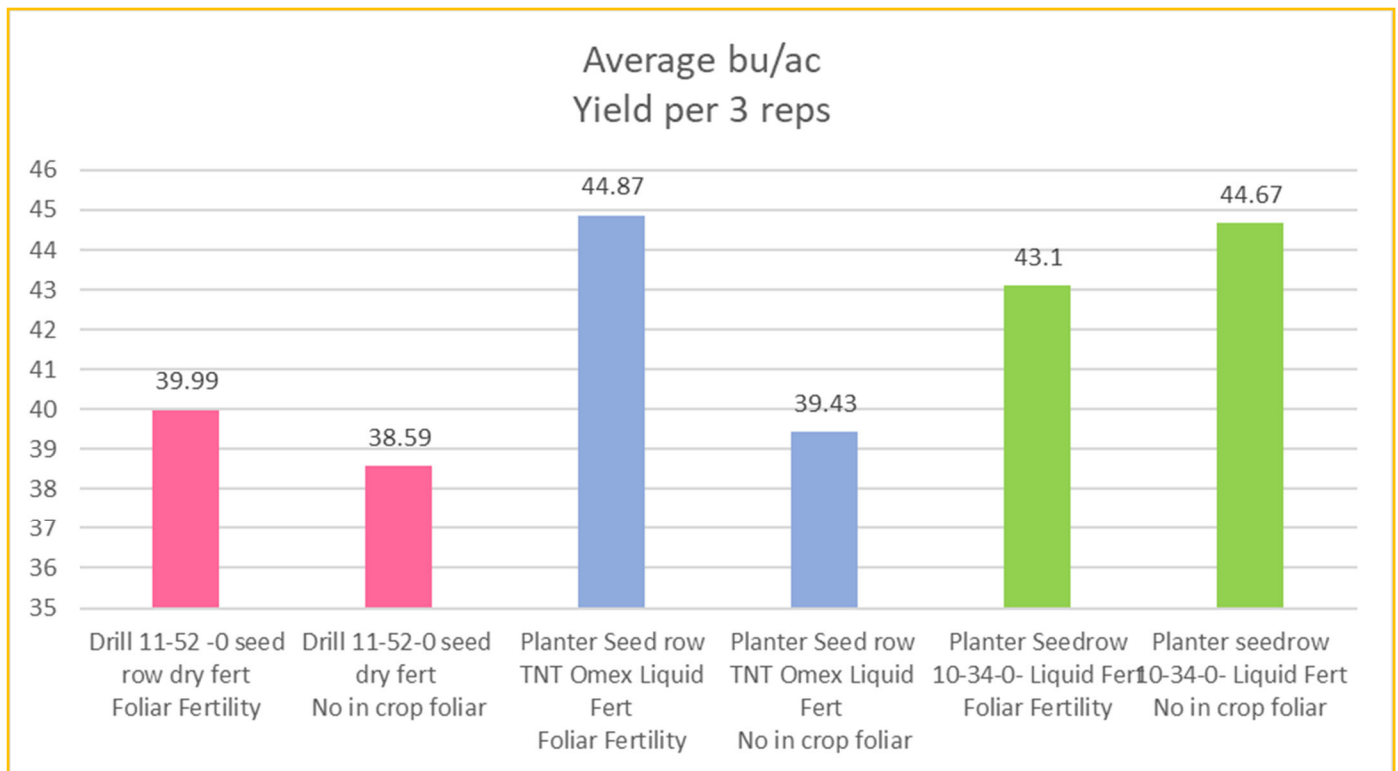
Cost Per Acre: \$24.50

Scan QR code to for more information
on Future Analytics Lab



Yield Comparison

Description	Average bu/ac Yield per 3 reps	
Drill 11-52 -0 seed row dry Fert Foliar Fertility	39.99	Increase 1.4 bu/ac
Drill 11-52-0 seed dry Fert No in crop foliar	38.59	
Planter Seed row TNT Omex Liquid Fert Foliar Fertility	44.87	Increase 5.44bu/ac
Planter Seed row TNT Omex Liquid Fert No in crop foliar	39.43	
Planter Seed row 10-34-0- Liquid Fert Foliar Fertility	43.1	Decrease 1.57bu/ac
Planter Seed row 10-34-0- Liquid Fert No in crop foliar	44.67	



Average Oil Content
per 3 reps

