

NEW TRIAL TYPE

Summary

Canola Phosphorus Source

Research Question:

What is the influence of Phosphorus (P) fertilizer sources on crop P availability, seed safety and yield for canola production across Manitoba soils.

Treatments:

Each farm chose whichever P sources were of interest to them to include in the trial.

1. P Source 1 - Standard Rate
2. P Source 1 - High Rate
3. P Source 2 - Standard Rate
4. P Source 2 - High Rate

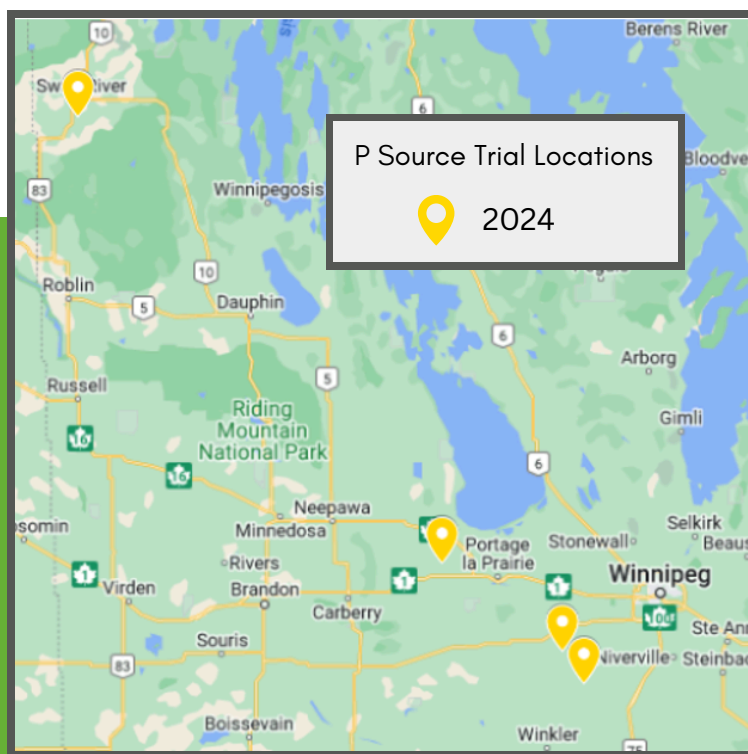
Includes one unreplicated untreated control (no P) plot to characterize P responsiveness of field.

Trial Setup:

Randomized complete block, each treatment was one equipment width x field length, with 4 replicates per locations (12 strips per location)

Data Collection:

Plant Counts, Emergence, P Tissue, Biomass (Rosette), Yield



Background: Canola requires P in large amounts during the growing season (approximately 1.5 lbs. of phosphate per bushel), especially during the early growth stages. The early season demand of P and immobility in the soil P fertilizers are typically applied in close proximity to the canola seed row, which may result in toxicity issues when large amounts of P fertilizer are applied. There are many different P fertilizers being marketed to farmers with claims of increased seed safety and P availability compared to conventional P sources with little independent research done across Manitoba growing regions.

2024 P Source Trial Sites

Trial ID	RM	Soil Residual P (0-6 in)	P Placement	Seeding Equipment	Row spacing
PS_01	North Norfolk	7 ppm	Side-Banded	John Deere 1790	15 in
PS_02	Grey	13 ppm	Seed-Placed	New Holland P250	10 in
PS_03	Swan Valley West	4 ppm	Seed-Placed	Bourgault 3320 Paralink	10 in
PS_04	Morris	8 ppm	Seed-Placed	John Deere N560F	10 in

2024 Results

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Note: Due to challenges in handling and supply of P sources not all trial locations were able to test the exact same total P205 rates for the two fertilizer sources.

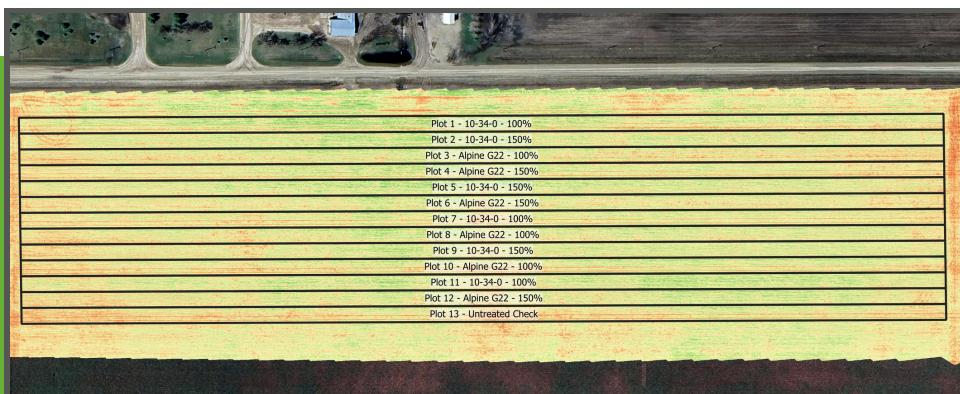
Grain Yield

One trial location showed an influence of P Source on grain yield.

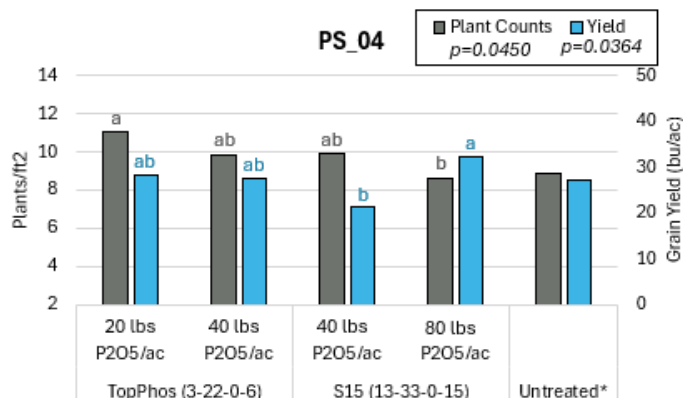
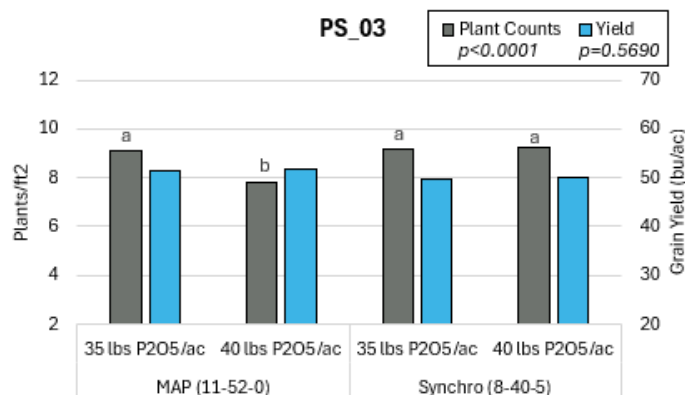
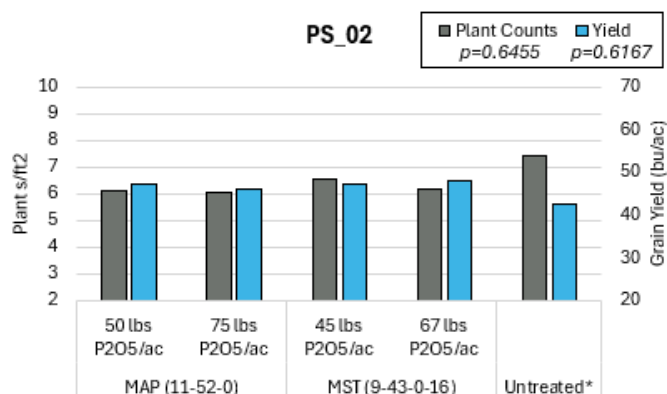
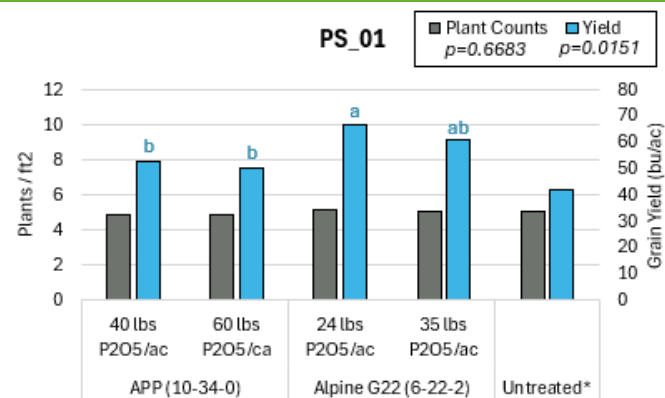
The standard rate of Alpine G22 has a significant increase in grain yield compared to both rates of 10-34-0 (APP). No other trials had a significant difference in grain yield between the two P fertilizer sources when similar rates were applied.

Plant Establishment

When Crystal Green Synchro was compared to 11-52-0 (MAP) there was a significant increase in emergence and plant stand with Synchro when high rates of product were applied. There were no other P fertilizer source effects on plant establishment in the 2024 trials.



All results presented are preliminary as the trial will continue to run again in 2025 field season. P availability for canola uptake is highly dependent on environmental conditions, these results are all from a single location in a single year. Caution should be used when interpreting results and making management decisions from data with limited replication.



*untreated treatment was not replicated. Treatments with similar lowercase letters within a data type are not statistically different at 95% confidence. Data types with no lowercase letters indicate an insignificant treatment effect.