

# Trial Summary

## Canola Phosphorus Source Trial

### Research Question:

What is the influence of P fertilizer sources on crop availability and seed safety for seed-placed applications for canola production on Manitoba soils?

### Treatments:

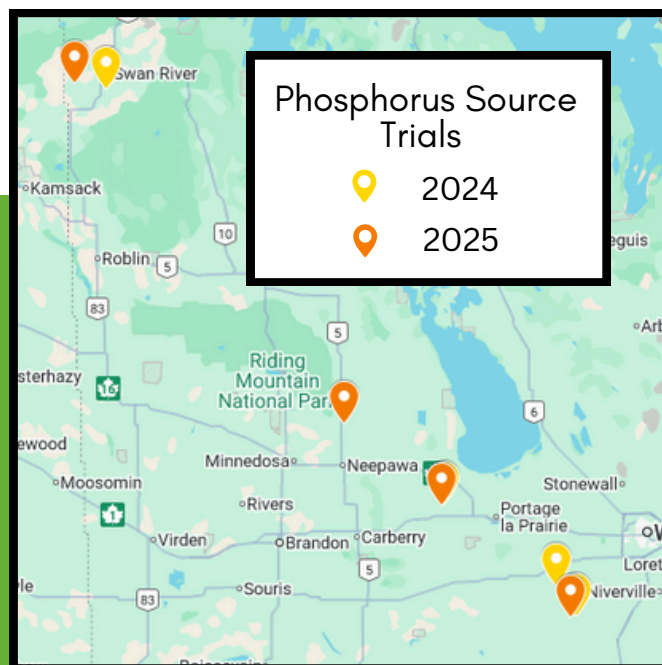
1. Farm Standard P Source – Standard Rate (100%)
2. Farm Standard P Source – High Rate (150%)
3. Alternative P – Standard Rate (100%)
4. Alternative P – High Rate (150%)

### 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, P content at rosette stage, Grain Moisture, Yield



### 2025 Phosphorus Source Trial Sites

| Trial ID | RM            | Soil Residual P (0-6 in) | P Placement | Seeding Equipment           | Row spacing |
|----------|---------------|--------------------------|-------------|-----------------------------|-------------|
| PS_05    | Morris        | 25 ppm                   | Seed-placed | John Deere N560F Disc Drill | 10 in       |
| PS_06    | North Norfolk | 13 ppm                   | Seed-placed | Planter Whyte               | 15 in       |
| PS_07    | Rosedale      | 32 ppm                   | Seed-placed | Bourgault 5810 Air Drill    | 10 in       |
| PS_08    | Swan River    | 16 ppm                   | Seed-placed | Bourgault 3320              | 10 in       |

**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.

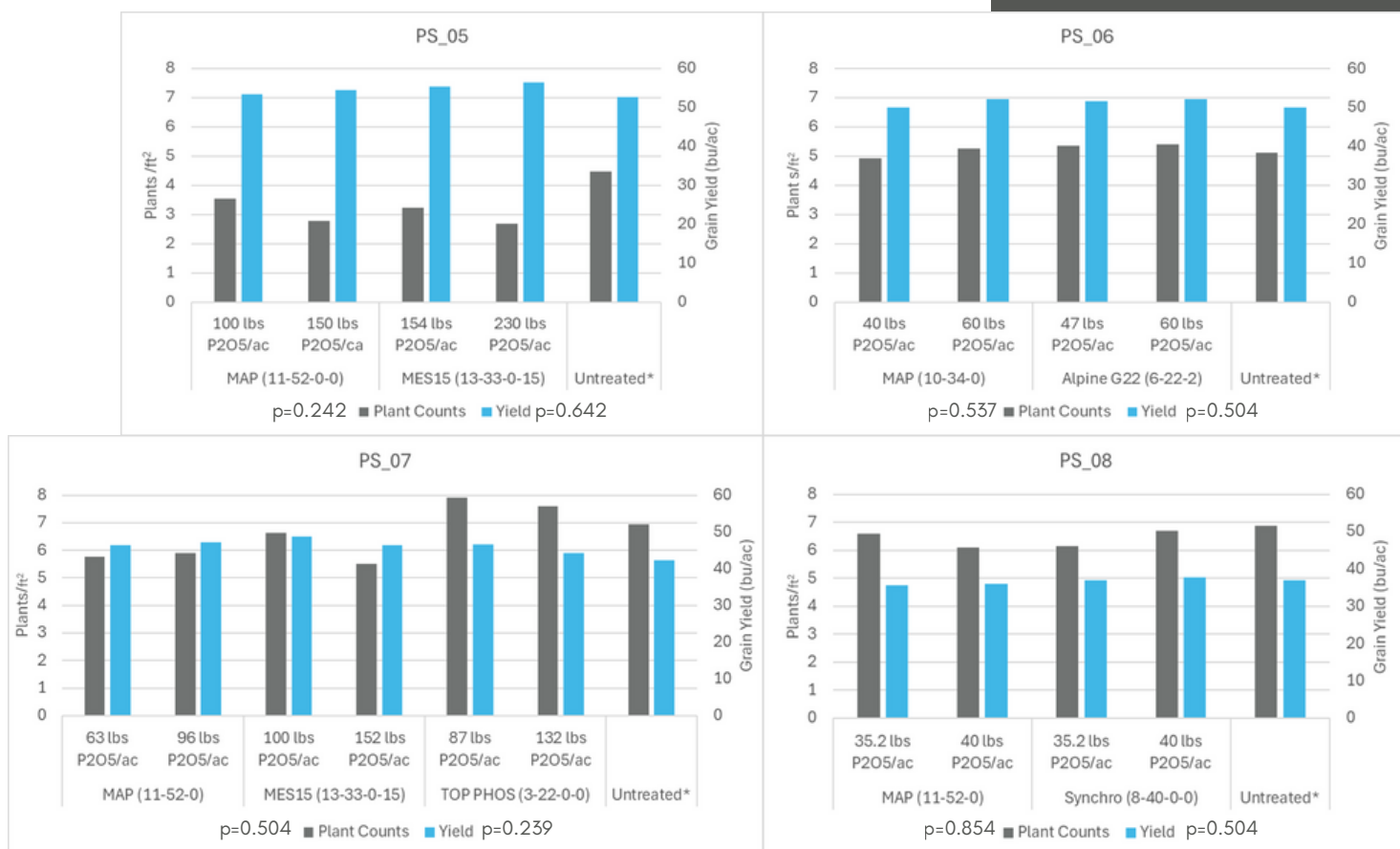
### 2024 – 2025 Summary:

Across the 2 years of this trial, farmers have tested various rates of seven different P sources: MAP, MES15, Alpine G22, TOP PHOS, Synchro, APP, and MST. Yield ranged from 21.2 bu/ac to 66.8 bu/ac and plant counts ranged from 2.8 plants/ft<sup>2</sup> to 11 plants/ft<sup>2</sup> across all trials in 2024–2025. No significant differences in yield or plant counts were identified at any particular trial site in 2025. Two of four trials in 2024 showed significant yield differences. At PS\_01, the standard rate of Alpine G22 (24 lbs P<sub>2</sub>O<sub>5</sub>/ac) produced a significantly higher yield than standard and high rates of APP (40 and 60 lbs P<sub>2</sub>O<sub>5</sub>/ac, respectively). At PS\_04, the high rate of MES15 outperformed the low rate of MES15 (80 and 40 lbs P<sub>2</sub>O<sub>5</sub>/ac, respectively) while both rates of TopPhos (20 and 40 lbs P<sub>2</sub>O<sub>5</sub>/ac) showed yield in between those of MES15. In 2024, PS\_03 was the only trial that showed significant differences in plant stand with different sources of P: Crystal Green Synchro had increased plant emergence compared to MAP when the same rate of P<sub>2</sub>O<sub>5</sub> was applied (40 lbs/ac).

# 2025 Results Summary

## Canola Phosphorus Source Trial

### P Source 2025, All Sites Graphs



### Grain Yield

No significant differences in yield were observed between standard and high rates of different P sources in 2025. Yield ranged from 36 bu/ac to 56 bu/ac across all trials - PS\_05 (with only ~3 plants/ft²) was the highest-yielding trial in 2025 despite the low early-season stand.

### Plant Establishment

Out of all 2025 trials, plant counts at the 4-leaf stage saw no significant differences when compared among standard and high rates of different P sources. Three of four trials had plant populations between the 5-7 plants/ft² rate; however, PS\_05 had poor emergence, around 3 plants/ft².