

BSSI and Syngenta 10/34 & Amatis Precise Product Placement (PPP) In-furrow Trial

Atlantic AgriTech 2025 Trial Summary

Planting / Emergence:

This trial was planted with Mountain Gem seed at 12” spacing on May 30th, 2025. We applied in-furrow treatments of 11-37-0 and Amatis according to protocol. Treatments were as follows:

- Treatment 1: 11-37-0 full row continuous band at 20 gal/ac
- Treatment 2: 11-37-0 full row continuous band at 20 gal/ac + Amatis at 1.25 L/ac (tank mixed)
- Treatment 3: 11-37-0 on 50% of the area banded approx. 3 inches either side of the seed piece within the row
- Treatment 4: 11-37-0 on 50% of the area banded approx. 3 inches either side of the seed piece within the row + Amatis at 1.25L/ac (tank mixed)

Seed pieces were hand planted to ensure accuracy. To replicate precise product placement in-furrow, we first tested our hand-boom sprayer on bare soil to deliver the desired amount of product around the seed piece. As you can see from the images below, product placement was satisfactory.



Fig 1: Hand boom with dual nozzles applying product in-furrow

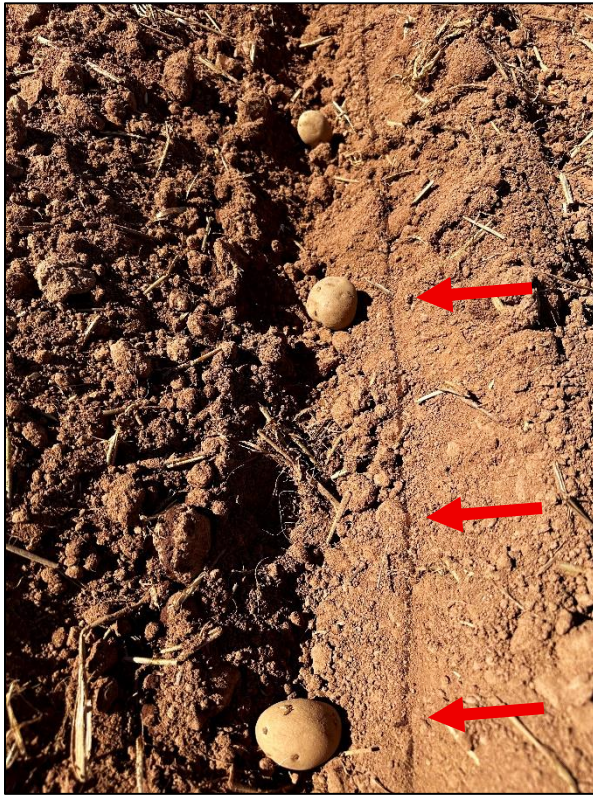


Fig 2: Continuous band of product applied in-furrow. Only one band visible due to shadow



Fig 3: PPP of product applied in-furrow. Only one band visible due to shadow

Plants emerged on Jun 19th. We performed plant counts on Jun 20th, Jun 23rd, Jun 25th, and Jun 30th. There were no differences in plant stand counts at those timings.

In-Season

We flew a DJI Mavic 3M drone over the trial at a low altitude to capture high resolution imagery used for analysis early in the season. We processed the imagery using Solvi web-based software to gather information including: average plant diameter, percent canopy cover per plot, plant height, Normalized Difference Vegetation Index (NDVI) and Normalized Difference Red Edge Index (NDRE).

The index used to assess vigor here was Normalized Difference Red Edge Index (NDRE). This index has commonly been used in potatoes to assess in-season canopy as well as providing an estimation of yield.



Fig 4: Example of Rep 2 from July 3rd 2025 drone flight. Plot number is labeled and % canopy cover is below

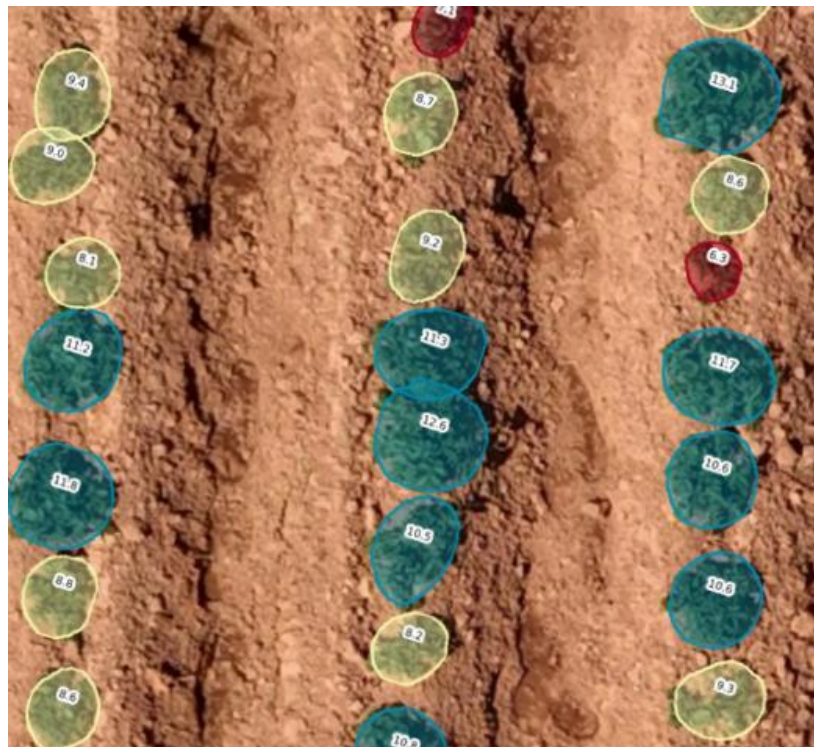


Fig 5: Example of individual plant diameter measurements (labeled in inches) from July 3rd drone flight

There were no statistical differences between treatments from any of the in-season assessments. Plots 102/202/302/402 showed numerically less canopy cover in early assessment timings, but this was not treatment related. Hilling depth was likely the cause of some rows receiving more soil coverage at the final hilling timing in June. We included canopy cover difference calculations in the assessment data (columns 10, 13, 18, and 23) to measure differences in plant growth over time. Late season multispectral imagery data (NDRE and NDVI) revealed no differences in crop vigor between treatments.

Harvest Data

Yield data showed no significant differences between treatments. Overall, it was a poor growing season in Prince Edward Island. This region of the province had historically low seasonal rainfall totals with only 100-150 mm of rain falling between Jun 1st and Sep 1st, which is approximately half of normal rainfall totals. Yield data from this trial averaged approx. 16 kg per 6m row (total yield), which is less than 230 cwt/ac, and consistent with early reports from around the province.

Conclusions

It appeared that Precise Product Placement (PPP) technology did not negatively affect yields. This technology shows promise in saving growers money on inputs, while mitigating risk of environmental effects of liquid fertilizer inputs such as 11-37-0. It appeared that the addition of Amatis in-furrow had no impact on yield in this trial. Bio-stimulant products such as Amatis should be evaluated over several sites and growing seasons to determine their impact on potato yield.