



## DECEMBER AGRONOMY UPDATE

### WAYNE IS TALKING ABOUT FERTILIZER PLACEMENT

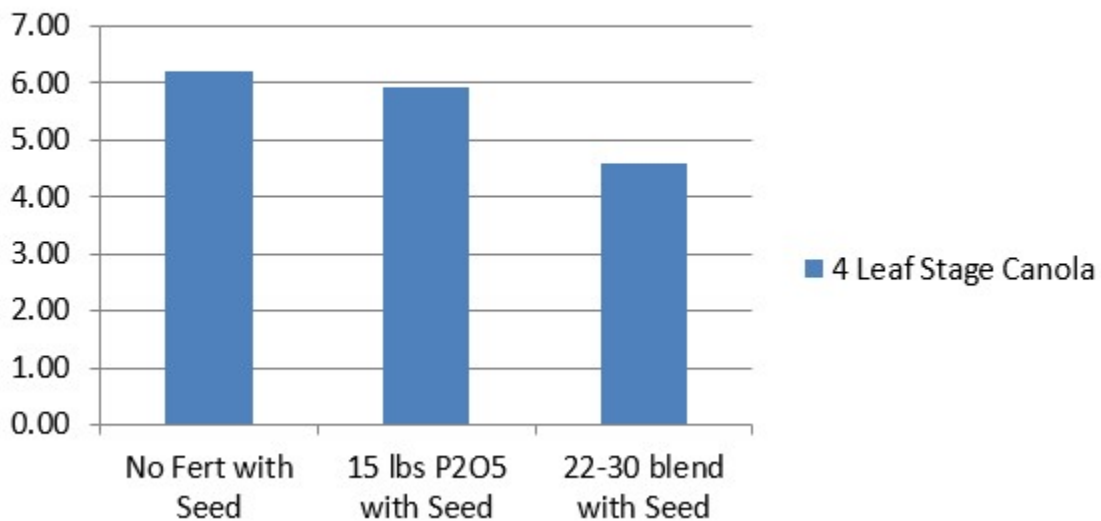


In 2021 we did a trial at the BRI Training Field south of Killam where we looked at the impact of seed placed fertilizer on wheat development when using the John Deere P556 drill (formerly known as the Conservapak). Check out the archives on our website if you would like to learn more about the 2021 trial. For those unfamiliar with the drill, the P556 has 12" spacings, and while the fertilizer shank opens a wide trench, the seeding tool itself lays the seed and accompanying fertilizer on a narrow ledge that is about 1" wide on the shoulder of the trench. In 2022, we decided to do the same trial again – only with canola this time and with an extra treatment. We did 3 trials; first putting all the fertilizer in the band with none added to the seed, secondly we added 15 lbs of P205 to the seed with the remainder of the phosphate in the band with all the nitrogen, and finally a blend of 22 lbs of N and 30 lbs of P205 was all placed with the seed and the rest of the N applied in the band. Ammonium sulphate was broadcast prior to seeding, so only N and P were banded. Plant counts were done at the 4 leaf stage and tissue testing was done 24 and 45 days after emergence (AE). Unfortunately we were not able to capture the yield, due to a sensor malfunction. However, nothing seemed to indicate any significant yield differences between any of the treatments.

#### **Plant Counts**

Plant counts were done on all 3 trials at the 4 leaf stage, and while there were differences in the populations, all fell within the recommended target range and there seemed to be no effect on maturity or yield in the end.

## 4 Leaf Stage Canola

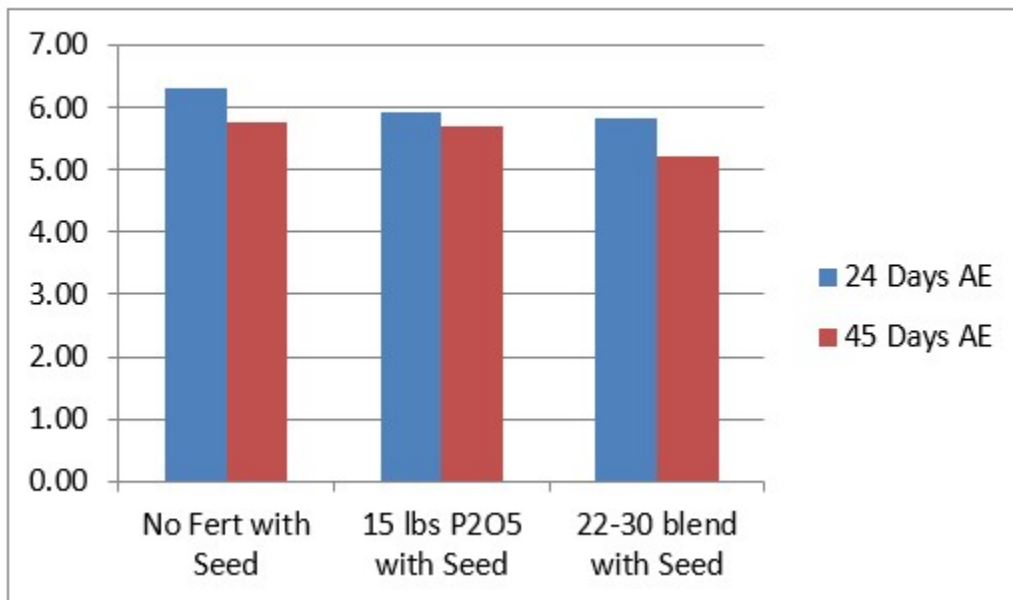


The blend did have an adverse effect on seedling emergence in that trial, while there was no significant difference in emergence between the seed alone and the seed placed with 15 lbs of P2O5 treatments. Subsequent tissue testing showed lower initial nutrient levels where the 22-30-0 blend was used, but not to the point of deficiency. In a year like 2021, where the top 20 cm of soil dried out very quickly and roots were unable to access the nutrients in the topsoil at critical times of rapid crop growth, this may have had a greater impact on the final yield. The excess seedling mortality observed where the blend was placed with the seed was likely due to the salt content and general toxicity of fertilizer in concentrated bands in the seed row.

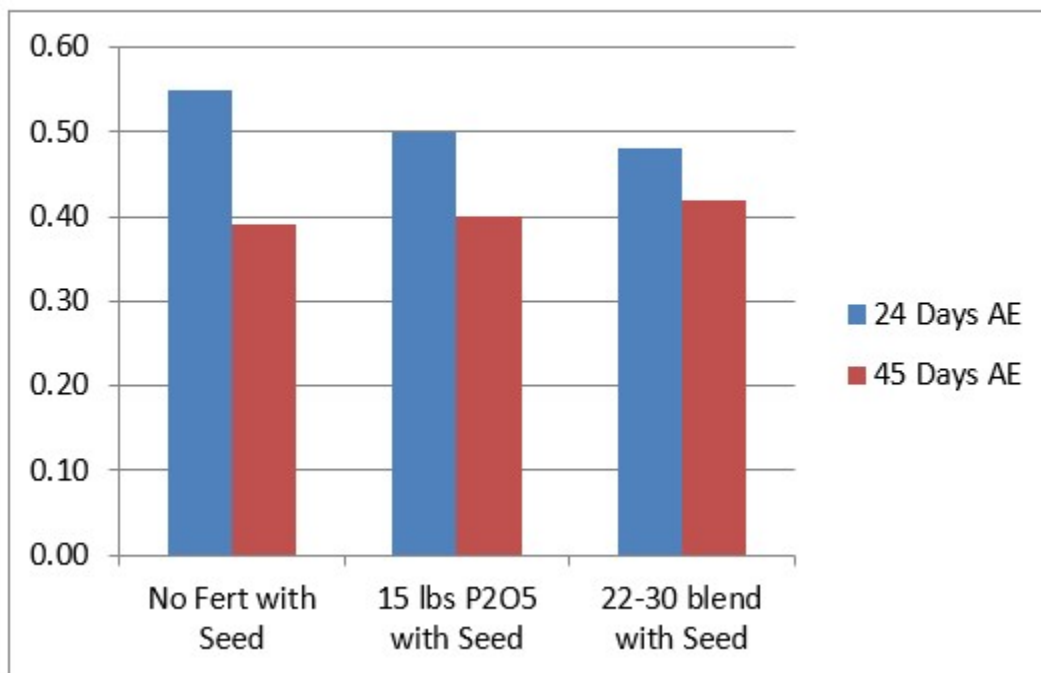
### Tissue Tests

Tissue testing was done on thirteen nutrients, but the graphs shown here for nitrogen and phosphorus are very typical of what was seen for the majority of the nutrients tested. The less fertilizer with the seed, the better the initial nutrient levels seemed to be. As the season progressed and the crop roots in all treatments explored the soil, these differences tended to decrease or disappear.

## Total Nitrogen %



## Phosphorus %



Just as we saw in 2021, as long as there are reasonably good background phosphorus levels in the field, adding fertilizer to the seedbed adds little to the plant emergence and growth. Having now seen very similar results in 2 different years, with 2 different crops, I would be confident in putting all my fertilizer in the band when using the P556 drill, which should lead to less fill times and more acres per fill as bin space in the cart only needs to be dedicated to one fertilizer blend and the seed.

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