

## ALBERTA GRAINS PLOT2FARM TRIAL

### Introduction:

While it is easy and efficient to create statistically valid research results from small, replicated plots, there is a much better visual impact from larger-scale producer-managed, replicated strips. Alberta Grains recognizes this, and created a program called Plot2Farm, where enthusiastic grain producers, in conjunction with researchers, can apply to have support from them to create such replicated strips.

GRO is particularly fortunate to have a good contingent of hard-working, well-equipped, organized producers, many of whom are more than willing to attempt such trials to demonstrate research results as it applies to north central Alberta. William Punko of Punko Farms is such a producer and GRO was pleased to be able to work with him and Alberta Grains to create and conduct a trial, designed to determine the short-term benefit of using different rates of humic acid on a wheat crop.

The project plan was to seed a wheat field as normal, then go in shortly after and, with GPS mapping, create four randomized replicates of three treatments:

- a control with no humic acid added,
- a strip with 2 L/ac humic acid,
- and a strip of 4 L/ac humic acid.

All strips were 90 ft wide, which worked well for William's equipment. Emergence and yield results were to be taken from each strip.

### Agronomics:

Location: Dark Grey Chernozem soil

Variety: AAC Connery

Seeding Date: May 12, 2024, seeded to moisture at about 1.5 inches

Humic product applied on May 13, 2024

Rainfall: 6.85 inches

Harvest Date: September 8, 2024

Treatments:

- Control - no humic acid applied
- Trt 1 - 2 L/ac liquid humic acid applied
- Trt 2 - 4 L/ac liquid humic acid applied

Crop quantity was determined by the use of a yield monitor; quality results were taken by obtaining samples from each plot, analysing them separately, compiling them and calculating the results for statistical validity.

### Results:

Replicated plant counts were taken on June 14th. Paired randomized 3 ft. seed row strips replicated 3 times per treatment were observed and counted. The wheat seedlings were at the three-leaf stage. No obvious emergence differences appeared in the plant counts, so the data was not analyzed for significance.

*Average Yield and Quality Results per Treatment*

	Yield (bu/ac)		Protein (%)	
Control, no humic added	61.8	a	14.9	a
Treatment 1, 2 L/ac humic	57.2	a	15.5	a
Treatment 2, 4L/ac humic	60.2	a	15.1	a
p Value	0.1561	NS	0.7757	NS
CV (%)	6.3	%	7.81	%

*No significant differences amongst any parameter or treatment.*

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## Discussion and Conclusion:

The first year of humic acid application did not appear to create any significant difference in yield or quality on this trial's soil type. These results appear to indicate that in the short term there is no immediate economic advantage to applying humic acid. This is, of course, a single-year, single-site trial and much more work would have to be done to truly prove this conclusion is actually the case. Also, the humic acid was applied very early during the growing season of this trial, so there could be many factors from this timing that might have an impact on the results of humic usage. It might be valuable to continue to monitor yield and quality of crops from these strips in second and subsequent years to truly show an economic response to these applications, particularly if wheat is seeded a second consecutive time on these plots, as it appears to be the current plan.

A discussion of this nature of trial is also warranted at this point. With current spray, guidance and GPS technology being what we had for this trial, it was easy to conduct, while ensuring the plots and treatments were accurate to the plot divisions marked out at the edge of the trial. In addition, GRO has the equipment required to track yield, protein and bushel weight, so it is both efficient and economical to be able to create such data from this trial. So, with an efficient, organized cooperator who has the appropriate equipment, this appears to be an excellent method of taking trial concepts out into the field to demonstrate to area producers. This Plot2Farm trial was an excellent pilot project to indicate the efficacy of conducting large scale plots while ensuring GRO's high standard of quality work is maintained. With this in mind, it would be a good idea to consider more of these types of trials, and additional touring and promotion of this activity going forward.

In conclusion, this work seems to indicate that while these plots may lack accuracy with the variability in the soil in north central Alberta, these larger scale demonstration type projects are an interesting and practical means of conducting plot trials going forward.

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