ALBERTA GRAINS DEMONSTRATIONS

Introduction:

With the support of Alberta Grains and a local grain producer, GRO conducted three demonstrations of current and potential farming practices. These practices include:

Demo 1: Fusarium head blight management in wheat,
Demo 2: Increasing yield potential through agronomy, protecting yield from disease and insect threats and increasing sustainability with system health, and
Demo 3: Investigating the impact of fertility and PGR management practices on barley lodging.

As these are demonstrations and only replicated once, any data taken from these plots can only be considered as observations without any statistical significance. Suffice it to say however, the observations taken from these demonstration plots generally followed expectations. These trials were widely viewed on organized tour dates and in private viewings, and local producers had many opportunities to study these plots and draw their own conclusions about how these practices may be applied to their own operations.

Alberta Grains Demo 1: Fusarium Head Blight Management in Wheat

Four varieties with different resistance to fusarium head blight were seeded twice, then one plot of each variety was sprayed at an appropriate time with Prosaro PRO fungicide.

Agronomics:
Seeded: May 13, 2024
Seed depth: 1 inch
Soil temperature: 9 ^{o}C
Rainfall recorded: May 1 to July 31, 2023: 167.3 mm or 6.6”
Varieties: AAC Viewfield and AAC Wheatland (intermediate fusarium resistance)
AAC Brandon and AAC Hodge VB (moderate fusarium resistance)
Fall Applied Fertilizer:
46-0-0 (Coated with Neon Air) @ 152.2 lbs/ac = 70 lbs/ac actual N
Spring Applied Fertilizer:
Side banded: 18.3-2.1-28.5-4.3 @ 350.7 lbs/ac = 64.1 lbs/ac actual N; 7.2 lbs/ac actual P; 100 lbs/ac actual K; 15 lbs/ac actual S
Seed Placed: 11-52-0 @ 53.5 lbs/ac = 5.9 lbs/ac actual N; 27.8 lbs/ac actual P
Pesticide:
Pardner + MCPA ester 600 @ 400ml/ac + 320ml/ac on June 10, 2024
Bison 400L @ 200ml/ac on June 24, 2024
Prestige A + B @ 710ml/ac + 600ml/ac on June 24, 2024
Prosaro PRO Fungicide + Agral 90 @ 325ml/ac + 0.125% on July 15, 2024
Treatments: AAC Viewfield
AAC Viewfiled, with fungicide applied
AAC Wheatland
AAC Wheatland with fungicide applied
AAC Brandon
AAC Brandon with fungicide applied
AAC Hodge VB
AAC Hodge with fungicide applied

Again, while we cannot actually conduct any calculations on the comparisons of each variety that were sprayed with fungicide versus those that were not, what little differences seemed to exist followed expected results. Due to the unreplicated nature of the trial, samples were not sent away for fusarium testing.

ALBERTA GRAINS DEMONSTRATIONS CONT'D

Alberta Grains Demo 2: Increasing Yield Potential Through Agronomy, Protecting Yield from Disease and Insect Threats while Increasing Sustainability with System Health.

CPS wheat varieties included: AAC Penhold, AAC Foray, Forefront.

Plots of a single variety are compared with equal blends of two or even all three to see if varieties in combination reduce insect and disease infestations.

Seeding date and depth, fertility moisture and weed control are the same as the first trial, except no fungicide was applied.

Plots include seeded mixes of:
AAC Penhold - 100%
AAC Foray - 100%
Forefront - 100%
AAC Penhold 50%, + AAC Foray 50%
AAC Penhold 50% + Forefront 50%
AAC Foray 50% + Forefront 50%
AAC Penhold 33.3% + AAC Foray 33.3% + Forefront 33.3%

From a yield perspective, and again these unreplicated plots cannot be statistically analyzed, there appeared to be no improvement in yield at least if varieties are blended. Fusarium presence results per plot may show some potential if not statistically valid differences by blending varieties. To further indicate if blending registered varieties actually reduce insect and disease presence and damage, repeated replicated trials must be conducted.

Alberta Grains Demo 3 Investigating the Impact of Fertility and PGR Management Practices on Barley Lodging.

Half of the AAC Austenson and Sirish barley plots were seeded with recommended fertilizer; the other half were seeded with 50% more than the recommended amount. This demonstration was further subdivided into half of each fertility regimes with an application of Moddus plant growth regulator (PGR) on June 26th. Other than that, this plot was treated the same as the first two Alberta Grains Demonstration. So, the plots were as follows:

CDC Austenson, Recommended Fertility
CDC Austenson, Recommended Fertility, PGR Applied
CDC Austenson. 1.5 X Recommended Fertility
CDC Austenson, 1.5 X Recommended Fertility, PGR Applied
Sirish, Recommended Fertility
Sirish, Recommended Fertility, PRG Applied
Sirish, 1.5 X Recommended Fertility
Sirish, 1.5 X Recommended Fertility, PGR Applied

In the year that it was in 2024, there was no lodging in any plot, so the primary purpose of this demonstration did not show any indication of a potential statistical difference in replicated trials. Even the additional fertilizer did not seem to produce any marked yield difference that would encourage a more serious investigation.

Conclusions and Acknowledgements:

All in all, these demonstrations indicate a continued need for similar demonstrations with the support of Alberta Grains. Cereal producers appreciate hands-on trials that can show what common questions indicate in field scale or even small plot situations. While some of these demonstrations may indicate a need for replicated, statistically valid research, others may not indicate such a need. GRO and the producers in the area appreciate the support Alberta Grains contributes to demonstrations that are based on questions. Further work, both as demonstrations and research is recommended by GRO with the help of Alberta Grains, particularly with the support of local grain producers (such as Randy Pidsadowski in this case).

Alberta Grains