

“Grazing and Grain Recovery 2012 Trial Results”

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Key Outcomes:

- Grazing up to GS 30 reduced the yield of barley for only the second time since these trials have been conducted
- Protein was significantly lower in grazed treatments
- The wheat varieties Orion, RAC1822 and UA40 appeared to handle grazing to GS 30 very well (negligible yield loss) compared to most other varieties tested

Trial Objectives: To determine grazing adaptation and recovery of grain yield of current and potential release varieties.

Trial Duration: 2012

Location: Navan

Farmer Co-operators: Pat & Mary Connell

Soil Type: Black Cracking Clay

Paddock History: 2010 Wheat
2011 Oats Hay

Monthly Rainfall:

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
18	11	55	16	42.5	76.5	38	46.5	29	21.5	4.5	10

Yield Limiting Factors: Dry Spring, Nitrogen removal from canopy by grazing

Type of Trial: Replicated small plot trial

Trial Design: Randomised Complete Block Design

Treatments:

30 lines of various wheat, barley and triticale were tested in the trial (See **Table 1**). All plots were sown on 16/05/2012 at 300 seeds/m² and 80 kg/ha Triple Superphosphate. All plots received 44 kg/ha N at sowing and 75 kg N/ha post grazing. All plots were grazed using a mower from GS 14 and every 10-14 days afterwards to simulate rotational heavy grazing. Grazing ceased when each ungrazed plot reached GS 30, thereby ensuring the grazed plots did not receive damage to the growing point (removal of the growing point means no head production on the main stem. grazing delays maturity so when ungrazed plots are at GS 30 it

is a fair assumption that the grazed plots are very close to GS30). Plots were machine harvested with a small plot header, weighed and sub sampled for grain protein concentration.

Table 1: Varieties tested in the MNHRZ Grazing and Grain Recovery Trial 2012

<i>Commander Barley</i>	<i>Magenta Wheat</i>	<i>Emu Rock Wheat</i>
<i>IGB 1101 Barley</i>	<i>LPB 07-1325 Wheat</i>	<i>SUN 577A Wheat</i>
<i>Cobra Wheat</i>	<i>RAC 1843 Wheat</i>	<i>Shield Wheat</i>
<i>RAC 1629 Wheat</i>	<i>Phantom Wheat</i>	<i>SUN 521C Wheat</i>
<i>RAC 1837 Wheat</i>	<i>RAC 1848 Wheat</i>	<i>Endeavour Triticale</i>
<i>Bass Barley</i>	<i>Wallup Wheat</i>	<i>Grenade CL Wheat</i>
<i>Hawkeye Triticale</i>	<i>Scout Wheat</i>	<i>UA 39 Wheat</i>
<i>IGW 3424 Wheat</i>	<i>Corack Wheat</i>	<i>UA 40 Wheat</i>
<i>Orion Wheat</i>	<i>RAC 1822 Wheat</i>	<i>UA 47 Wheat</i>
<i>LPB 08-1799 Wheat</i>	<i>Mace Wheat</i>	<i>UA 28 Wheat</i>

Results:

Figure 1: Grazed and Ungrazed Yield vs Variety, MNHRZ 2012

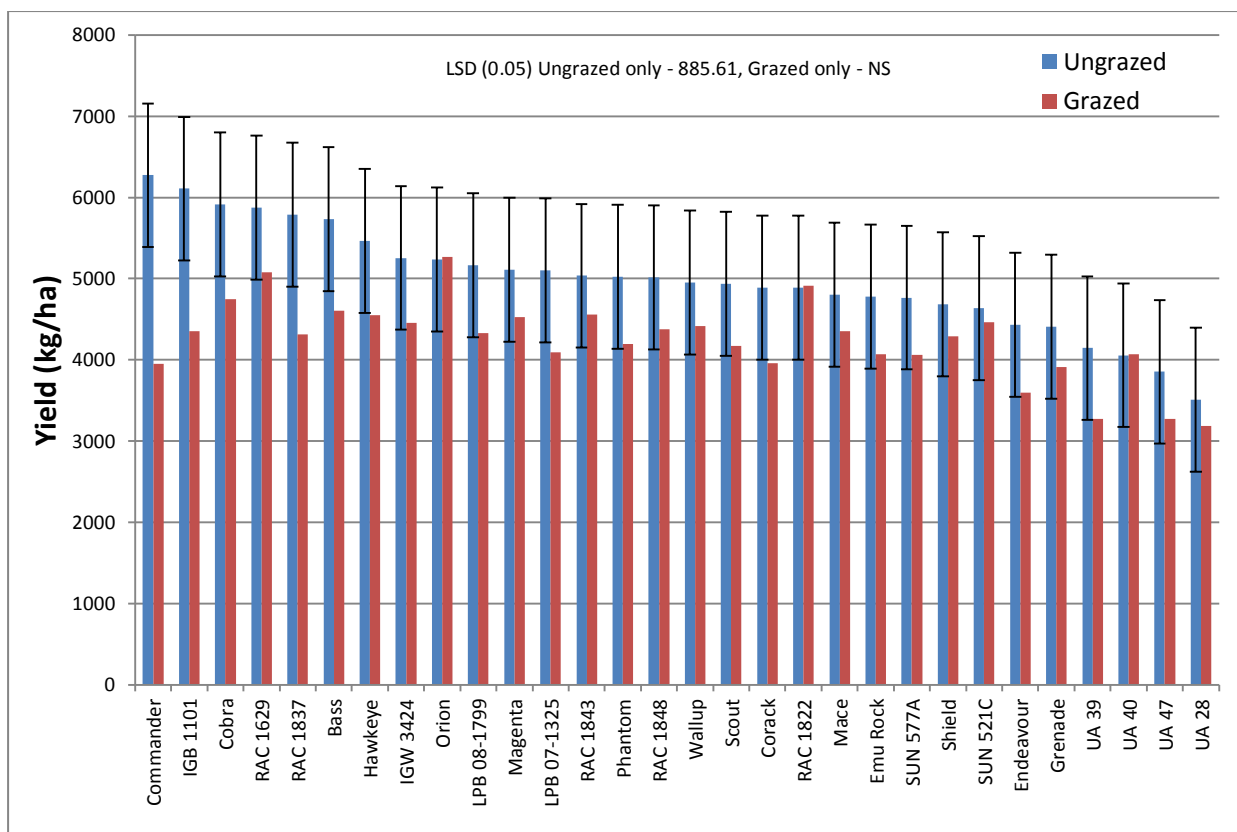


Table 2: Effect of grazing on grain yield (average of all varieties), MNHRZ 2012

Treatment	Yield (kg/ha)
Grazed	4282.9
Ungrazed	4994.1
LSD (0.05)	474

Comments:

Grazing generally resulted in a significant yield loss in most of the varieties tested this year. Of particular note was the large reduction in yield of the barley varieties in response to grazing. This is only the second time in 7 years where this has occurred. It is thought that this was most likely due to the lack of rain following the nitrogen application at the cessation of grazing. With grazing removing large amounts of nitrogen from the canopy, adequate nitrogen must be applied to the crop following the end of grazing to ensure adequate recovery of the crop's canopy to produce sufficient head and grain numbers. In this trial, there was very little rain following nitrogen application and by the time it did rain, the barley was so advanced it was unable to compensate. This is the most rational argument for the large yield losses compared to the wheat and triticale varieties.

Cobra wheat yielded exceptionally well in this trial and statistically greater than many of the current commercial standards for wheat. While the ratio of grain yield from grazed compared to ungrazed Cobra was not greatly different to other varieties the absolute yields are still very high. Cobra may well be worth considering in the higher rainfall areas. There were no significant differences in wheat yield amongst the other varieties tested. RAC 1822 wheat, Orion wheat and UA40 wheat, all recovered well from grazing, with virtually no yield loss. All three varieties appear to grow well early and this dry matter production potential may lead to rapid canopy/grain yield recovery once grazing has ceased. At the time of writing, protein data has not been analysed therefore could not be incorporated into the results.

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