

“Grazing & Grain Recovery, 2014”

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Key Outcomes:

- Cobra was significantly lower yielding when subject to grazing, whereas Gazelle was not.
- Highest yields were achieved with low (25 kg N/ha) nitrogen applications.
- Maximum grain yield occurred at 8.5% protein.

Trial Objectives: To determine 1) the grain yield recovery potential of 2 different wheat varieties and 2) whether nitrogen is able to assist in grazing recovery and yield compensation.

Trial Duration: 2014

Location: Navan

Farmer Co-operators: Pat & Mary Connell

Soil Type: Red Clay Loam

Paddock History: 2013 – Faba Beans
2012 - Wheat

Monthly Rainfall:

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2	81	7	69.5	64.5	99.5	67.5	18.5	20	9	18.5	4.5

- **Yield Limiting Factors:** Below average spring rainfall
- **Type of Trial:** Replicated small plot trial
- **Trial Design:** Randomised Complete Block Design, split plots, 3 replicates

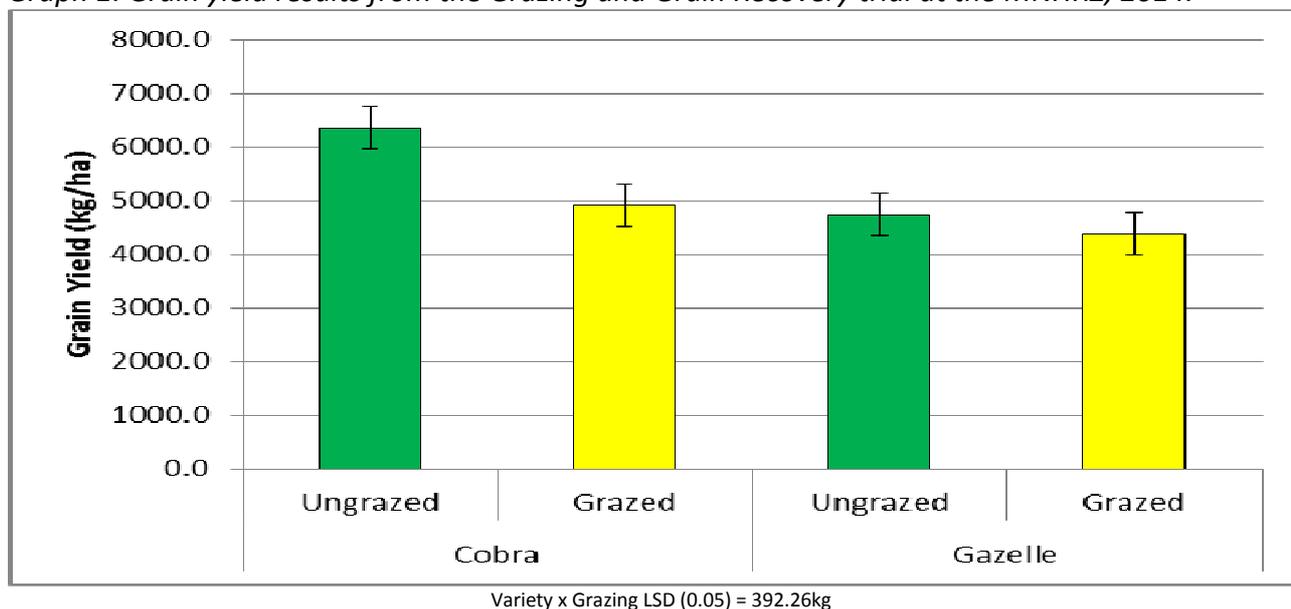
Treatments:

The trial contained 2 wheat varieties (Cobra, Gazelle), 2 grazing treatments (Ungrazed, Rotationally grazed to GS 30) and 6 nitrogen rates (0, 25, 50, 75, 100 & 125 kg N/ha).

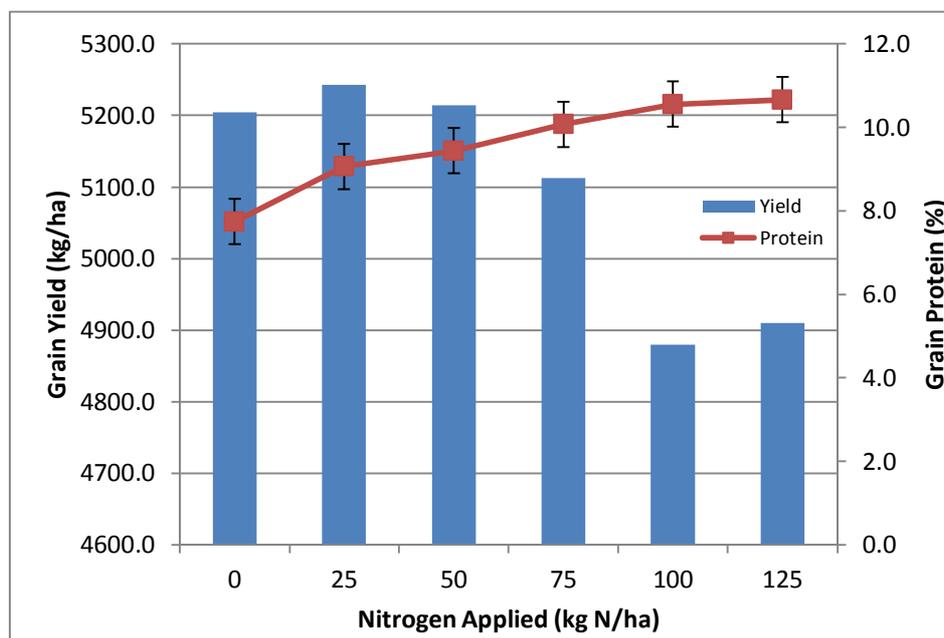
All plots were sown on the 12th of May, 2014 at 300 seeds/m² and sown with MAP 1% Zinc at 80 kg/ha. All nitrogen treatments were applied by hand following the final defoliation of the grazed treatments. This corresponded to GS 30 in the ungrazed treatments. A mower was used to simulate stock grazing. The plots were harvested and grain yields determined. Grain samples were kept for protein analysis.

Results:

Graph 1: Grain yield results from the Grazing and Grain Recovery trial at the MNHRZ, 2014.



Graph 2: Grain Yield & Protein vs. Nitrogen rate, Grazing and Grain Recovery Trial, MNHRZ, 2014.



Comments:

Cobra wheat lost significant yield when subject to grazing in this trial. Gazelle on the other hand did not significantly lose yield. Both varieties were chosen as they vary considerably in their plant architecture and physiological development patterns. Cobra is a shorter, more erect plant that

displays maturity approximately 2 weeks earlier than Gazelle. Gazelle is a taller, more freely growing variety. These plant types may explain why the Cobra experienced yield loss when the Gazelle did not. By removing the early biomass produced by Cobra via grazing, it appears to have limited its ability to develop adequate yield forming structures due to its early maturity. This may be a combination of poorer tiller survival, increased weed competition and lack of biomass with which to photosynthesize and store carbohydrates for grain fill.

Nitrogen rate increased protein but not grain yield. This is more than likely due to the high background levels of nitrogen in the soil at this site (177 kg N/ha 0-100cm). There was a trend towards yield reduction with increased nitrogen rates, however this was not statistically significant.

Conclusion and into the paddock

These results again illustrate the importance of variety choice when choosing a grain variety to graze during the vegetative stage. In this trial, statistically significant yield loss was associated with a grain yield reduction of approximately 400 kg/ha of grain. This yield loss (8%) could be deemed commercially acceptable if the grazing was required early in the season. Previous results in this environment suggest that yield losses of 20-30% or more can be expected by growing a variety that is poorly adapted to grazing up to GS 30. It is unlikely that yield will be affected by grazing any cereal up to mid tillering. With the increase of early sowing, those with stock should feel comfortable that an early feed gap can be met by grazing early sown cereals. Paddock choice is vital when grazing cereals as paddocks that have a high grass weed burden can become worse following grazing, due to the reduction in competition. With-holding periods for pre-emergent chemicals should also be taken into consideration.

Acknowledgements

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