Barley for Grazing and Grain

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Purpose:	To determine the effect grazing barley has on grain yield.
Location:	North Badgingarra (James Raffan)
Rotation:	2008 Hay; 2007 Wheat; 2006 Canola
GRS:	446mm

BACKGROUND SUMMARY

The Northern agricultural Region (NAR) grazing system relies heavily on annual pastures. This creates a feed gap in the autumn period, which is traditionally filled by supplementary feeding until annual pastures become available, usually about 6-8 weeks after the break of the season.

This presents an opportunity to utilise cereal crops early in the growing season to reduce the length of the autumn/early winter feed gap. Wheat, barley, oats and triticale show good growth rates after the break and can often become available for grazing earlier than volunteer and improved pasture systems. Previous research has indicated that by ceasing cereal grazing before Growth Stage 30, the crop can still be harvested with minimal yield loss.

TRIAL DESIGN

2x 17 ha paddocks were used and both sown to Vlamingh barley. One paddock was grazed with sheep at a stocking rate of 22dse/ha from 22nd July until the 9th August when the sheep were removed and the cereal was allowed to go through to grain fill. The second paddock was left ungrazed. Both paddocks were treated the same for fertilizers and chemicals. Both paddocks were harvested for grain in December 2009.

Sowing date: 11 June 2006

Seeding Rate: 70kg/ha Vlamingh Barley

Fertiliser: **At seeding:** Agstar 130kg/ha

Post: Urea 75kg/ha (26 June); Copper + 35L/ha Flexi-N (19 August)

Chemicals: **Pre:** 1.2L/ha Roundup + 100l/ha Fastac (9 June)

At seeding: 1.5L/ha Trifluran + 120g/ha Metribuzin

Grazing dates: 22nd July- 9th August 2009

Stocking rate: 22dse/ha

RESULTS

The ungrazed paddock yielded 1.2t/ha more than the grazed paddock (Figure 1.) The grazed paddock was grazed intensively to approximately 1-2 cm in height where only the white stems could be seen, the green foliage had all been removed. It was observed that after sheep were removed from the paddock, the barley crop re-grew rapidly and out competed the radish that was also recovering from the grazing.

It was also observed in the demonstration that the grazing delayed the maturity of the cereal with the grazed paddock haying off later than the ungrazed paddock.

The quality of the grain from both treatments has not been tested for quality but it has been observed that the grain from the grazed paddock is a better colour than the ungrazed paddock.

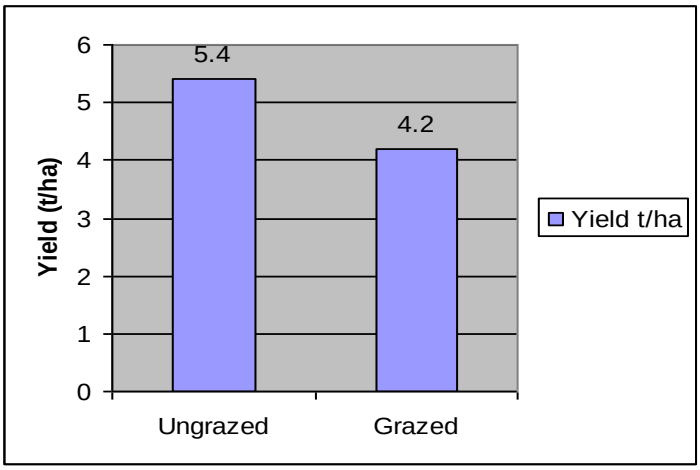

Figure 1. *The yield of the ungrazed and grazed paddocks.*

DISCUSSION

The yield loss of 1.2t/ha in the grazed paddock compared to the ungrazed, may be a result of grazing after GS30. Trials across Australia through the Grain & Graze project have shown that yield loss is minimised if grazing is completed before growth stage 30 (GS30) or stem elongation (Free Food for Thought, 2008). When grazing occurs after GS30 the embryo ear has started to move up the tiller and may be consumed by stock.

Where it was noted that the barley crop appeared to out compete radish plants after grazing, grazing cereal trial across Australia have shown that when weeds and cereals are both grazed intensively to the same level, the cereal crop has re-grown at a faster rate than the weeds, putting the weeds at a disadvantage (Free Food for Thought, 2008). Less intensive cereal grazing where only part of the canopy is removed may reduce shading of weeds and encourage their growth.

The maturity of the grazed paddock was delayed by grazing. This is to be expected with the delay in maturity varying from 3-14 days depending on when grazing commences and the length of the grazing period. The earlier that grazing is completed, the shorter the delay to flowering.

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