Naparoo wheat grazing demonstration at Tungamah

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Key point

- Grazing Naparoo wheat reduced grain yield by up to 19%.

Location: Tungamah, Victoria

Rainfall:
Annual: 550mm (avg 510mm)
GSR: 224mm (avg 334mm)

Soil:
Type: Brown loam over heavy grey clay

Sowing information:
Variety: Naparoo wheat
Sowing date: 17 April 2011
Sowing rate: 90kg/ha
Fertiliser: 110 kg/ha MAP; 12 kg/ha foliar nitrogen; 60 kg/ha nitrogen as urea
Treatments: Grazed (74DSE/ha) and ungrazed

Row spacing: 30cm

Paddock history:
2010 — canola

Plot size: 6m x 6m

Replicates: 3

Photo: Dale Grey

Aim

To determine the effect of grazing on grain yield of Naparoo wheat.

Method

A dryland demonstration site was established at Tungamah to determine the impact of grazing on wheat yield. Naparoo wheat was sown into moisture on 17 April 2011 at 90kg/ha with 110kg/ha MAP on a 30cm row spacing in a 24ha paddock.

Naparoo was chosen for its high biomass production, rust resistance and its winter habit for grazing. The crop was top dressed on 18 May 2011 with 12kg/ha foliar nitrogen at GS14 (four leaf). Dry matter (DM) cuts were taken on 1 July 2011 at GS16.5 to determine available biomass.

The crop was grazed on 2 July 2011 by 400 ewes in lamb (38 DSE/ha) but removed on 3 July 2011 due to two ewe deaths. The ewes were lambed out in another paddock. The 400 ewes with 400 lambs (74 DSE/ha) were reintroduced on 25 July 2011 for three weeks. The crop was then top dressed on 15 August 2011 with 60kg/ha nitrogen as urea. The crop was grown to maturity and harvested for grain using a plot header.

Results

The ungrazed paddock contained 596kg/ha DM (see Table 1) at 6.5 leaf stage, 12 tillers, no nodes. Plant establishment was fair due to the dry autumn start with the crop looking thin but tillering well. The effect of grazing varied across the paddock. In two areas of the paddock the yield loss was marked, while in another area there was no yield difference between grazed and ungrazed plots. On average the yield loss was 19% (see Table 1) but this was not statistically significant across the trial. Protein levels were similar for grazed and ungrazed treatments.

TABLE 1 Dry matter and grain yield results for grazed and ungrazed Naparoo wheat

Treatment	Dry matter (kg/ha)	Yield (t/ha)	Screenings (%)	Protein (%)
Grazed	596	4.05	1.1	9.3
Ungrazed		4.98	0.7	9.2
		P = 0.193 lsd = 2.07 cv% = 13		

Observations and comments

The sheep grazed an estimated 700kg of DM/ha during the three-week grazing period. The profitability of the paddock was not compromised by grazing and provided stock with feed during July.

Cereal crops grazed during the vegetative stage represent a high-quality feed source but are low in salt and high in potassium, which can reduce magnesium absorption in the rumen. Animals grazing cereal crops (especially wheat) require supplementation with a lick made of equal parts of magnesium oxide, ground limestone and salt. The limestone will provide calcium to pregnant and lactating ewes.

It is important to introduce animals to all new feeds gradually and provide supplementary hay. A gradual introduction will minimise the potential for scouring as the rumen bacteria adapt to the new feed source, while the hay will provide adequate fibre to assist rumen function. Careful introduction to feed on sunny days (avoid overcast conditions) and access to hay will also avoid nitrate poisoning when grazing oat and canola crops, particularly for more susceptible livestock such as heavily pregnant and lactating ewes and cows.

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