

FEED VALUE OF FORAGE BARLEY AT NULLAWIL

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TAKE HOME MESSAGES

- Forage cereals have benefited the grazing systems at Nullawil, providing additional feed for livestock.
- Forage cereal crops have good early vigour and can recover quickly from grazing enabling it to withstand a second, and sometimes, third graze.
- Nodal root development is important to anchor plants and prevent them being pulled out by grazing. As it is dependent on leaf and tiller initiation, it can be compromised by dry conditions.

BACKGROUND

Forage cereal crops offer growers a pasture option that can be sown annually and will generate fast growing early feed in late autumn and early winter. They generally have faster regrowth rates than grain varieties, and can be used for a second and even third grazing before dry conditions are reached in spring. Grazing a conventional grain crop can put yield at risk if the crop is sown late and moisture is limiting. Growing and grazing a dedicated forage cereal crop instead avoids placing grain crops at risk. Nullawil best wool best lamb (BWBL) group members have trialled Moby barley on their properties over the past three seasons in an effort to improve their lamb production systems. Ewes in late pregnancy and early lactation, and fast growing lambs, have the high energy and protein requirements that can be difficult to meet in paddock situations, particularly in the autumn and during the early winter feed gap.

AIM

To monitor the dry matter production, or feed value, of Moby forage barley for a third season. Previous demonstrations by the Nullawil best wool best lamb group (monitored by grain & graze 2) are presented in *BCG 2010 research results – part b, pp. 95-97* and *BCG 2011 research results, pp. 193-195*.

METHOD

Location: Nullawil, annual GSR rainfall 325mm
Crop type/s: Moby barley
Sowing date: 12 march 2012
Seeding equipment: farm equipment

At two sites, exclusion cages to protect the crop were made from 9m² panels of steel mesh and positioned in each paddock prior to grazing. Additional exclusion cages were added for a second

grazing at site two to enable plant recovery measurement. Grazing time was determined by the grower who took into consideration ground cover, biomass for foraging and broadly, if they thought there was enough feed.

Forage value, or crop dry matter (DM), was measured by cutting plants to ground level prior to each grazing period. The demonstrations were essentially grazed out (plants did not recover after last graze) and were not harvested.

RESULTS AND INTERPRETATION

The season at Nullawil began in February, with 75mm rainfall building subsoil moisture. However, apart from some light rains which allowed the crops to be sown, another substantial rain wasn't received until late May.

When plants were left ungrazed, dry matter doubled in quantity over six weeks at site 1, and in four weeks at site 2 (ungrazed crop, table 1). Regrowth after grazing was poorer than expected at both sites, likely due to the dry soil conditions. To recover dry matter after grazing, plants needed about six weeks at both sites.

Table 1. Feed value (DM) of Moby barley, Nullawil 2012.

Graze date	Site 1		Site 2		
	Ungrazed	Grazed	Ungrazed	Grazed	Grazed twice
18 May	1.09		1.39		
20 June			2.86	0.85	
30 July	1.97	0.99	6.59	4.44	0.85

Site 1 was badly affected by plant loss following the first grazing. Even though plants were 20cm high, in some areas up to 50 per cent were pulled out by grazing due to poor nodal root development. Nodal roots (also known as secondary or crown roots) which anchor cereal plants, are initiated as the third leaf emerges and tillering commences. As each leaf and tiller appears thereafter, another nodal root starts to develop. Subsequently, the development of nodal roots tends to be better under moist conditions when plants grow more vigorously, while severe drought will inhibit elongation. A very hard compaction pan can also inhibit tillering and indirectly nodal root development.

For the past three seasons, feed value has varied according to sowing time and soil moisture, but the forage cereal has always offered early feed value when other pastures are still establishing. Delaying grazing has increased the feed available substantially, but the decision to graze will of course be driven by when the feed is needed. Rotational grazing has allowed the forage cereals to regrow, keeping feed fresh and more nutritious and prolonging the grazing period.

At site 1, the pasture dry matter was monitoring alongside lamb growth rates. A walk-over-weighing (WOW) system allowed lamb weights to be recorded each time they came into drink. This regular monitoring enabled the grazier to remove lambs for sale when they reached their target weights, thus

avoiding over spec price penalties. The WOW system has also been used previously with ewes and lambs for pedigree matchmaking, which identifies which lambs belong to which mother. This is useful for identifying ewes that can successfully raise multiple lambs, or lambs with higher growth rates for breeding or self replacing programs. These results will be reported by MLA and through the best wool best lamb network.

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