

Growing Biomass

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Key messages

- Tetraploid ryegrass produced the highest dry matter in the trial
- Forage oats produced the best forage quality when sampled in August
- There was significant variation between varieties of the same species for both dry matter production and forage quality

Why do the trial?

Biomass production is crucial to the number of animals a farmer can run on a pasture, as is the quality of that biomass. The quality becomes particularly important if attempting to gain good live weight gains in order to finish animals for market. This trial was established to determine if 1) There was significant variation in the dry matter production of commercial vs readily farmer available seeds for forage and 2) to determine if forage quality varied significantly between species/varieties within species to allow for an informed choice when purchasing seed for pastures.

How was it done?

The trial was established at the MNHRZ site at Navan, between Riverton and Tarlee, in the mid north of SA.

16 varieties comprising of oat, ryegrass, wheat, barley and brassicas were sown on April 27th 2016 in single randomised plots in a non-replicated trial. All cereals were sown at 300 seeds/m², ryegrasses at 25 kg/ha and brassicas at 5kg/ha. All plots were sown with 60 kg/ha MAP. 60 kg N/ha was applied to all plots on the 24th May 2016. Plots were sampled and feed tested on the 5th of August by Anthony Pearce of Hills Farm Supplies as part of another project running on the same site.

Plots were hand harvested on the 21st of September, 2016 by cutting 2x25cm of row from the middle two rows of the plot, from an area of the plot deemed representative of the plot. These samples were dried in a drying oven to determine dry matter weights.

What happened?

Table 1: Feed Test Results, MNHRZ, 2016. Tests taken 5th of May, 2016

Variety	Category	Crude Protein %	ME MJ/kg	NDF %	NFC %	DMI Potential %/LW	Milk per Tonne
Outback	Oat	23.4%	12.7	29.8%	34.7%	4.03	2241
Tucana	Oat	22.7%	12.5	33.0%	32.3%	3.64	2191
Tetrone	Annual Ryegrass	21.7%	12.6	26.2%	27.3%	4.58	2173
Beaufort	Wheat	24.7%	12.1	35.8%	27.9%	3.35	2097
Pacer	Leafy Turnip	17.0%	11.7	19.0%	51.1%	6.32	2078
Surrey	Annual Ryegrass	20.7%	12.0	30.7%	32.5%	3.91	2049
Mace	Wheat	30.3%	11.8	39.9%	17.5%	3.01	2023
Sungrazer T	Annual Ryegrass	14.4%	11.9	28.6%	27.1%	4.20	2020
Adrenalin	Annual Ryegrass	18.5%	11.8	33.7%	32.5%	3.56	1997
Winterstar 2	Annual Ryegrass	20.2%	11.7	33.4%	28.9%	3.59	1980
Winterhawk	Annual Ryegrass	20.5%	11.8	31.6%	30.9%	3.80	1972
Mulgara	Oat	24.1%	11.4	41.5%	23.2%	2.89	1941
Mammoth	Oat	19.7%	11.2	44.1%	24.7%	2.72	1885
Compass	Barley	20.9%	11.1	43.4%	23.1%	2.76	1870
Tetila	Annual Ryegrass	17.6%	11.3	33.5%	31.1%	3.58	1868
UA47	Wheat	22.8%	10.1	47.8%	19.3%	2.51	1615
Scepter	Wheat	21.5%	9.4	53.2%	14.5%	2.26	1443

Table 2: Dry Matter Yield (kg/ha) vs Variety, MNHRZ, 2016. Cuts taken 21st September 2016.

Variety	Dry Matter (kg/ha)	Variety	Dry Matter (kg/ha)
Tetila Ryegrass	17214.5	Sungrazer T Ryegrass	9891.7
Winterhawk Ryegrass	15337.8	Mace Wheat	9094.5
Winterstar 2 Ryegrass	14162.6	Adrenaline Ryegrass	8873.6
Mammoth Oats	13750.4	Tucana Oats	7964.2
Surrey Ryegrass	13513.0	Scepter Wheat	7907.5
Mulgara Oats	11806.3	UA 47 Wheat	6961.4
Outback Oats	10804.7	Compass Barley	6607.1
Tetrone Ryegrass	10453.9	Beaufort Wheat	5998.8

What does this mean?

There was significant variation between varieties for both dry matter and forage quality. As evident in these results, high levels of both do not always occur together. This means that farmers should select the variety that fits their intended end use. For example if the farmer wanted a reasonable quantity and quality feed at the end of winter to lamb ewes onto, Outback and Tucana oats would suit this purpose well. For fodder conservation or a standing pasture to finish stock on then Tetrone and Surrey ryegrass or Outback oats would provide a good mix of forage quantity and quality. These results one again show the value of independently assessed trials for selecting varieties that will produce the best performance in paddock in your specific region as opposed to glossy brochures that often promise more than can be delivered!