

“Growing Biomass”

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Key Outcomes:

- Cereal species produced the greatest amount of biomass (9.6-13.5t/ha DM) in the trial.
- Dry spring conditions limited the dry matter (1.3-4.7 t/ha DM) production of the legumes.
- Tetraploid ryegrass again showed that it is worth considering in pastures/pasture mixes. It produced 6.9-8.9 t/ha DM in a season that did not suit it.

- **Trial Objectives:** To compare biomass production of range of species

- **Trial Duration:** 2014

- **Location:** Navan

Farmer Co-operators: Pat & Mary Connell

- **Soil Type:** Red Clay Loam

Frank McInerney

- **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:** Non-Replicated small plot trial
- **Trial Design:** Non-Replicated, single plot per variety

Treatments:

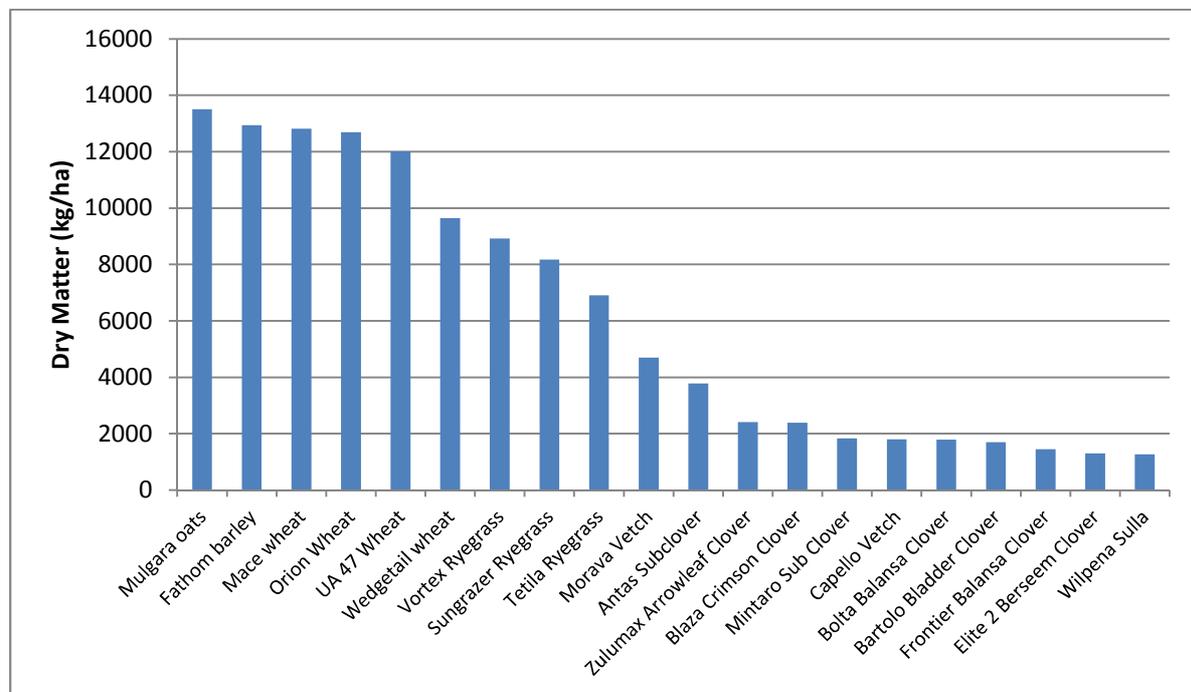
20 different species were sown in the Growing Biomass trial on 12/05/2014. All plots received 80 kg/ha MAP 1% Zn fertiliser at sowing. 60 kg N/ha as urea was applied to all non-legume plots. The varieties and species that were sown are shown below in **Table 1**. Plots were hand harvested (2 x 50cm rows cut to ground level) on 10/09/2014 (Cereals flowering) from a representative area of the plot. This may have disadvantaged the legume species in the trial, as peak biomass is unlikely to have occurred by then. The samples were cut, then bagged, dried in a oven and weighed to determine dry weight.

Table 1: Species in the ‘Growing Biomass’ Trial, MNHRZ 2014

Varieties		
Tetila Ryegrass	Fathom Barley	Antas Subclover
Vortex Ryegrass	Mulgara Oats	Mintaro Subclover
Sungrazer Ryegrass	Morava Vetch	Elite 2 Berseem Clover
Mace Wheat	Capello Vetch	Blaza Crimson Clover
Orion Wheat	Wilpena Sulla	Bartolo Bladder Clover
UA47 Wheat	Zulumax Arrowleaf Clover	Frontier Balansa Clover
Wedgetail Wheat	Bolta Balansa Clover	

Results:

Figure 1: Species Dry Matter Production, Growing Biomass Demonstration 2013, MNHRZ



Data Not Replicated therefore no statistics

Comments:

Mulgara Oats produced the most dry matter in the trial at 13.5 t/ha. Fathom Barley, Mace Wheat, Orion Wheat and UA47 Wheat all produced dry matter yields between 12 & 13 t/ha. Vortex and Sungrazer Ryegrass both produced yields in excess of 8t/ha. Of the legumes, Morava Vetch (4.7t/ha) and Antas Subclover (3.8 t/ha) were the standout performers. It is expected that many of the legumes would have gone on to produce significantly more dry matter than what was seen when they were cut on Sept 10th.

Conclusion and into the paddock

The results in 2014 reflected the ability of the species to produce early dry matter, which as the season turned out, was crucial to developing overall yield. There were a number of points that should be considered when planting pastures to tailor the dry matter production with the class of stock you are running at the time.

- 1) Cereals for early dry matter production. In most cases these will be grazed in June, prior to lambing for many people. When sown early, cereals are able to produce very good early dry matter. This can be utilised by the stock whilst legume and native grass pastures are just starting to grow.
- 2) Ryegrasses and Vetches for Mid to late winter feed. Both species provide high quality feed for animals with young. It also offers very palatable feed for young stock that are just starting on their intake. These species tend to be ready to graze once the cereals have been grazed down a few times.
- 3) Legume pastures for finishing stock/maintaining condition over summer. The pasture legumes do the majority of their growing during late winter and spring, hence they can be utilised by growing animals. They offer the best combination of Metabolisable Energy and Protein to ensure that stock put on weight and minimise supplementary feeding.
- 4) Instead of sowing them all into the same paddock together, consider splitting the paddock into 3 and planting each species separately to maximise dry matter production and quality over the course of the year.

Local trial results are of great value when you are looking at choosing a pasture species. Look at species and varieties that perform well in your district over a number of years. The other factor that could be considered is to look at the aerially seeded legumes species such as balansa clover, Persian clover, arrowleaf clover and vetch. All of which can be harvested with conventional harvesting equipment, allowing you to save money, but also sow at a higher seeding rate to produce more dry matter earlier in the year.

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