

The new ...



... 8 May 2013





1. Lucerne establishment

- Soils**
- deep free draining
 - pH 6.0 – 7.0
 - RG/Wc fertility

- Sowing**
- inoculated
 - 10-25 mm
 - inoculated 8-10 kg/ha
 - spring or autumn
 - cultivated or direct drilled
 - after fallow?

Pre-development

- browntop
- hieracium
- sweet vernal
- <5% legume



Low palatability
Low production
Low legume

Lime and Fertiliser Application

Lime 3-5 ton/ha

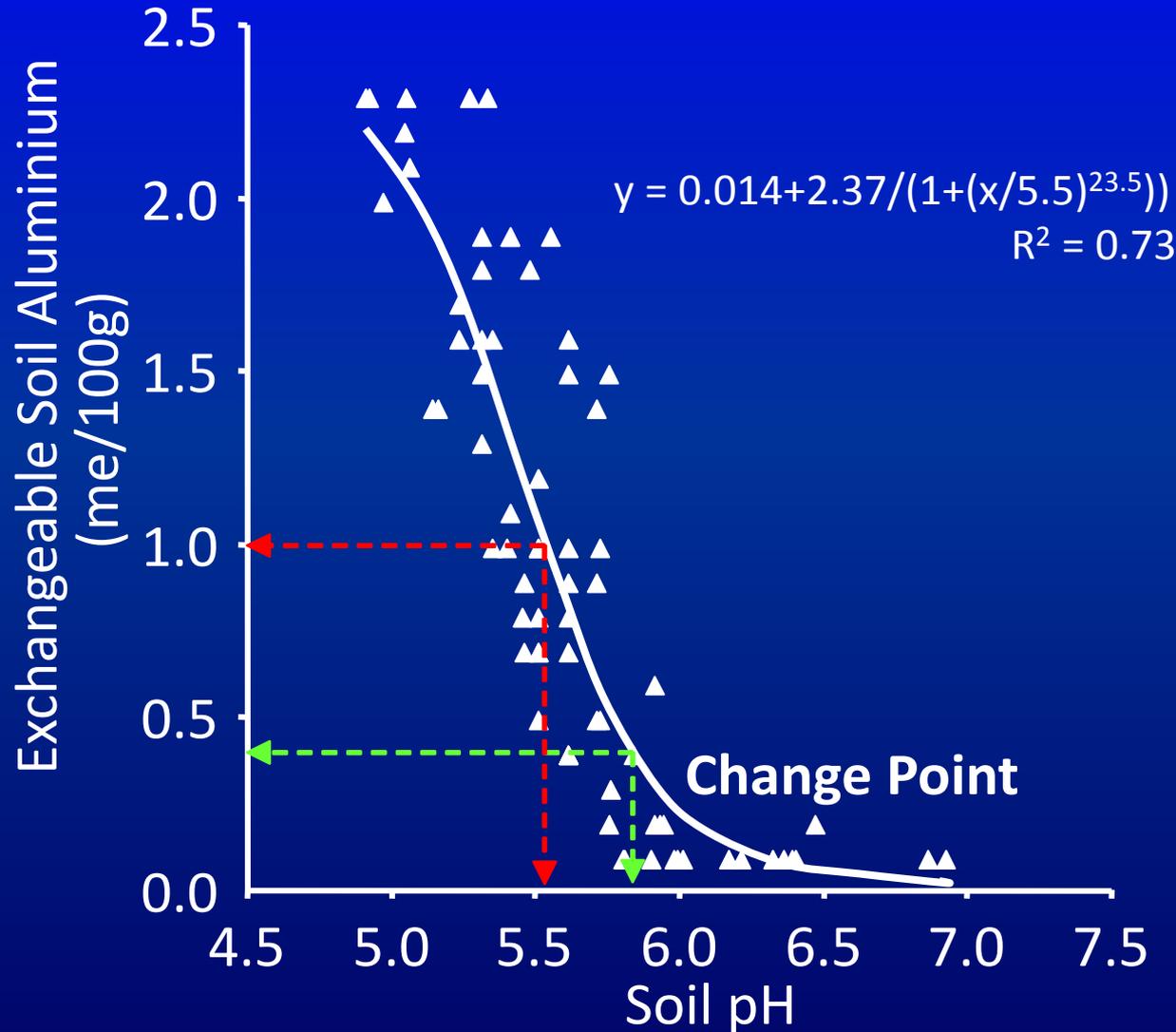
Fertiliser 250-500 kg/ha



Typical 0.15 m soil test results for pre (2008) and post (2010) fertiliser applications from three Central Otago farms.

Pre-Development (2008)	pH	Olsen P ($\mu\text{g/ml}$)	Potassium (QTU)	Sulphur ($\mu\text{g/g}$)	Aluminium (mg/kg)
Hills Creek	5.2	10	5	14	2.6
Huntleigh	5.2	10	5	1	6.3
Styx	5.2	13	13	3	5.7
Post-Development (2010)					
Hills Creek	5.8	19	9	31	0.9
Huntleigh	6.0	18	4	25	1.5
Styx	6.1	29	13	23	1.1

Soil pH & exchangeable Aluminium



No Lime - Lucerne

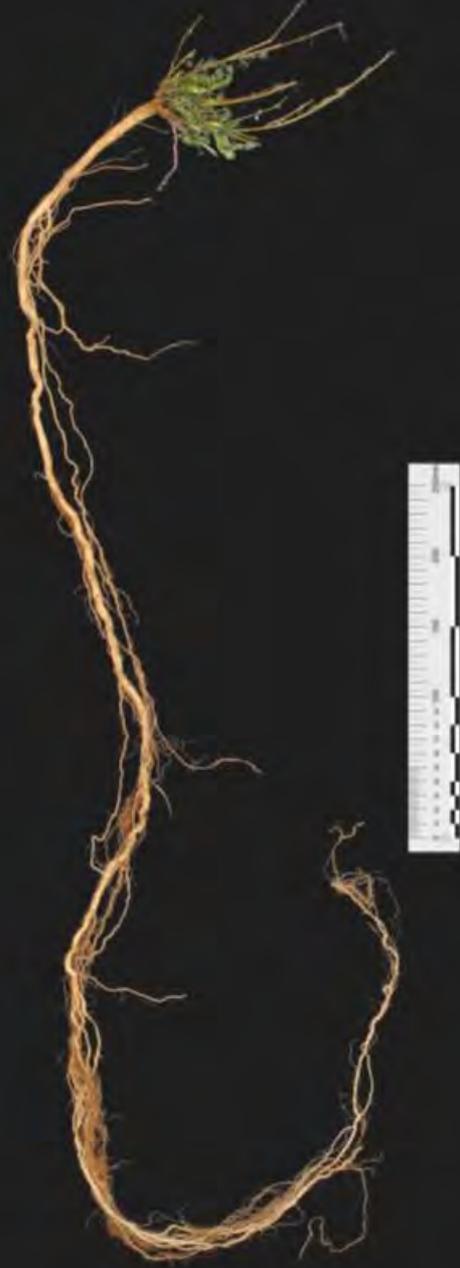


Lucerne root

~8 months after sowing

> 1.5 m length

Photo: D Hollander
Lincoln University



Autumn Spraying

- Timing is Critical
- Most important tool
- Glyphosate, granstar, penetrant

Key Results

- Conserve soil moisture
- Kill mass root systems

2nd Spray – Spring

Glyphosate, insecticide, penetrant



Result from Autumn spray, photo taken 1 November 2010

Source: Kearney *et al.* 2010

Drilling seed with fertiliser

Direct drilling = seed + fertiliser



Styx Station

Sown 21/11/2007

Photo taken 1/11/2010



Pasture growth

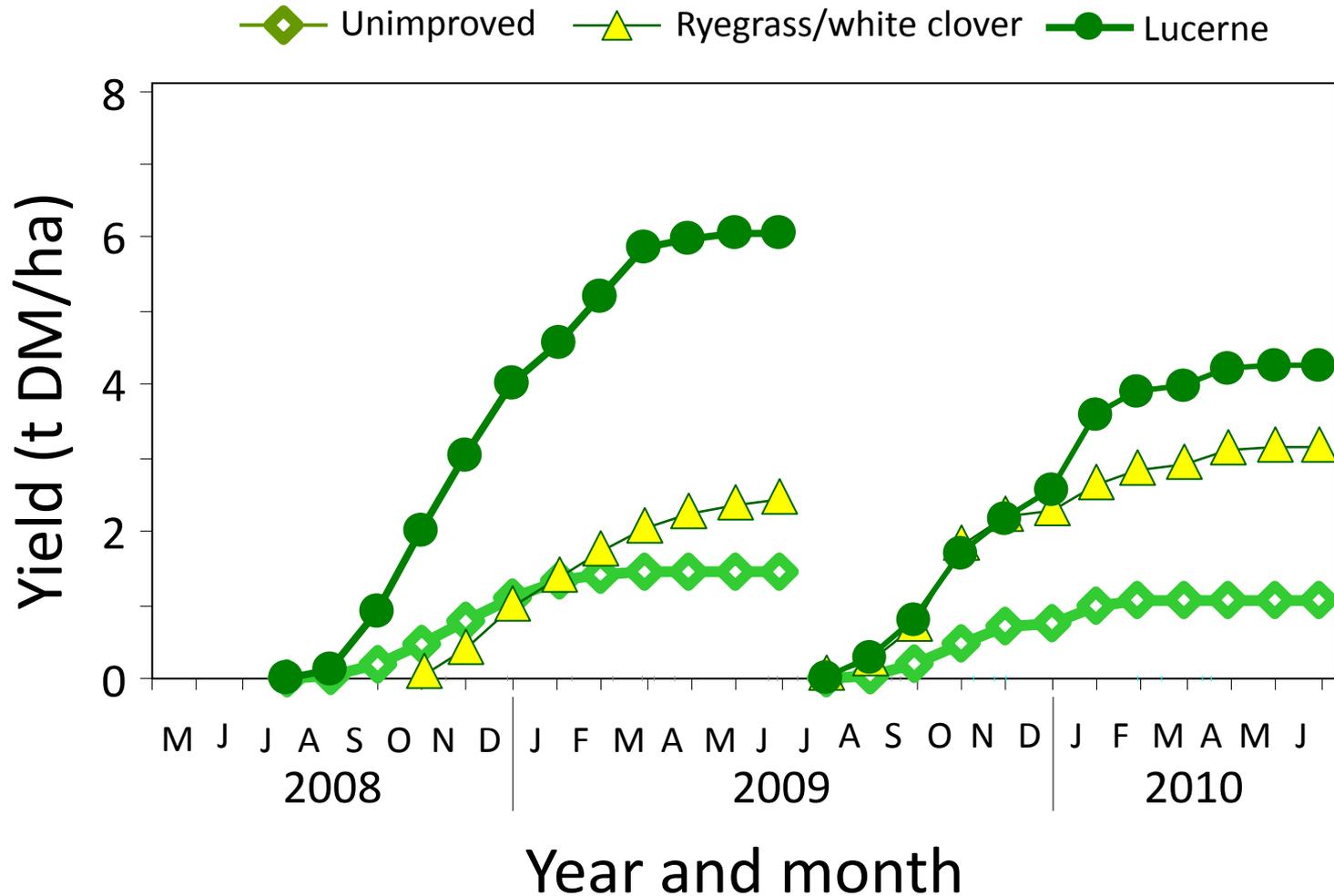




Photo: Bonavaree
Marlborough





Photo: 'Bonavaree'
Marlborough



Redrill poorly established areas

Un/successful methods

- full cultivation
- direct drilling after pasture
- direct drilling after crops
- oversowing on riverbed
- oversowing on hill country
- undersown barley
- undersown rape
- spring sown
- autumn sown



Photo: Bog Roy Station



Photo: Bog Roy Station



Photo: Bog Roy Station



Photo: Bog Roy Station

2011 10 16



Photo: Bog Roy Station

2011 10 16

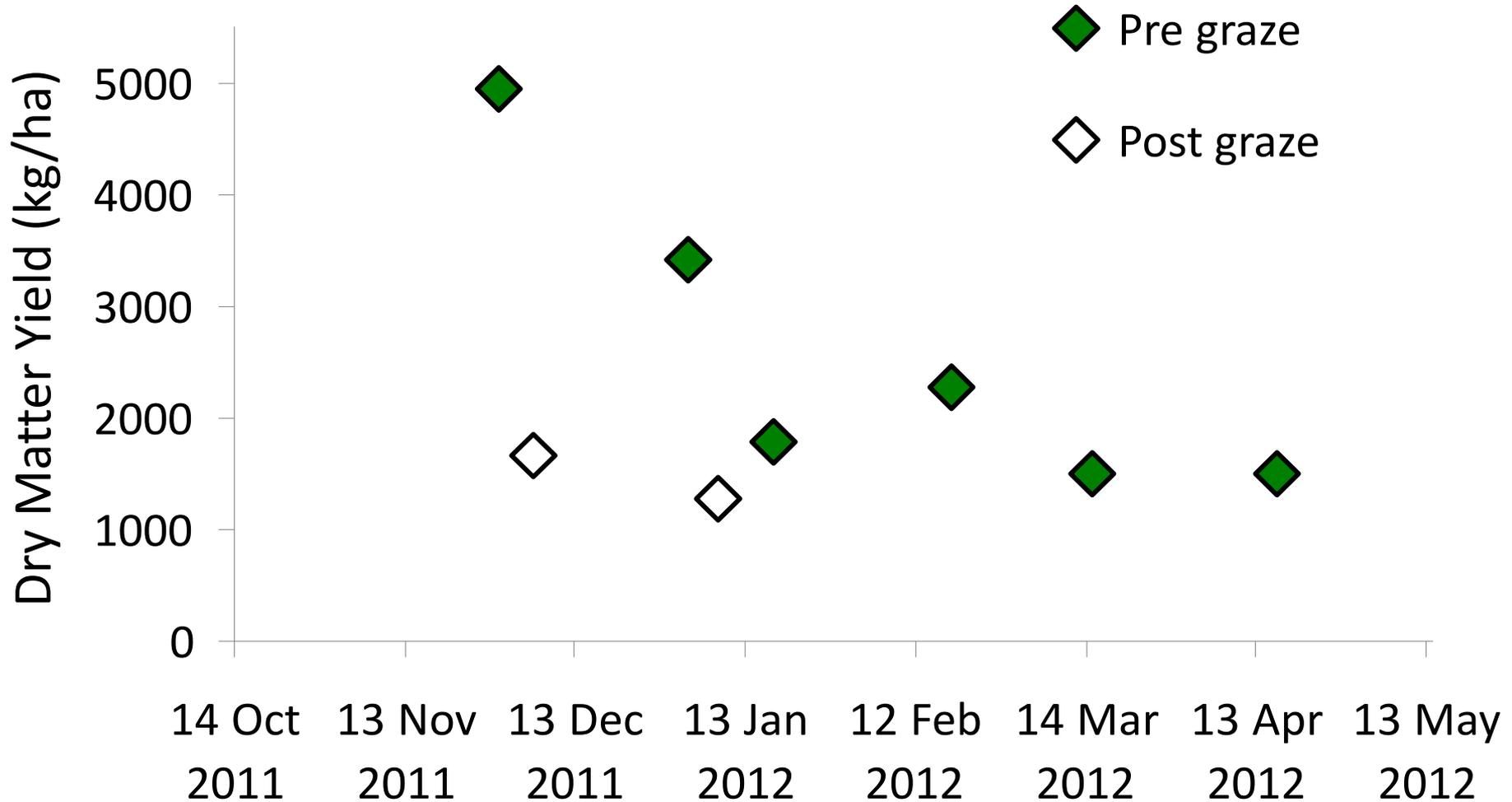


Photo: Bog Roy Station

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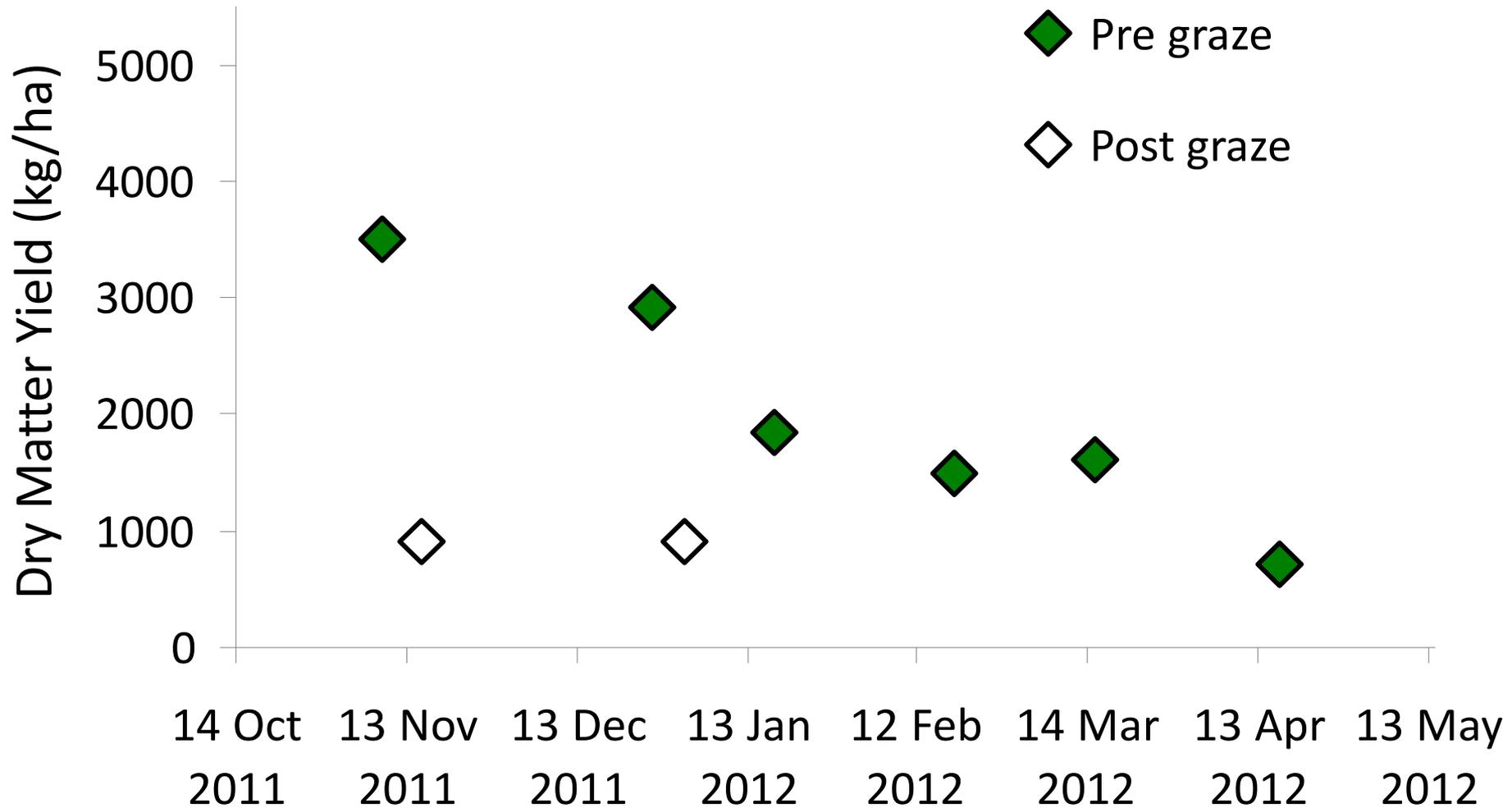
DM yield: improved paddocks

Top Davids - irrigated lucerne



DM yield: improved paddocks

Appletree - dryland lucerne



DM yield: improved paddocks

RG2 - dryland cocksfoot/lucerne

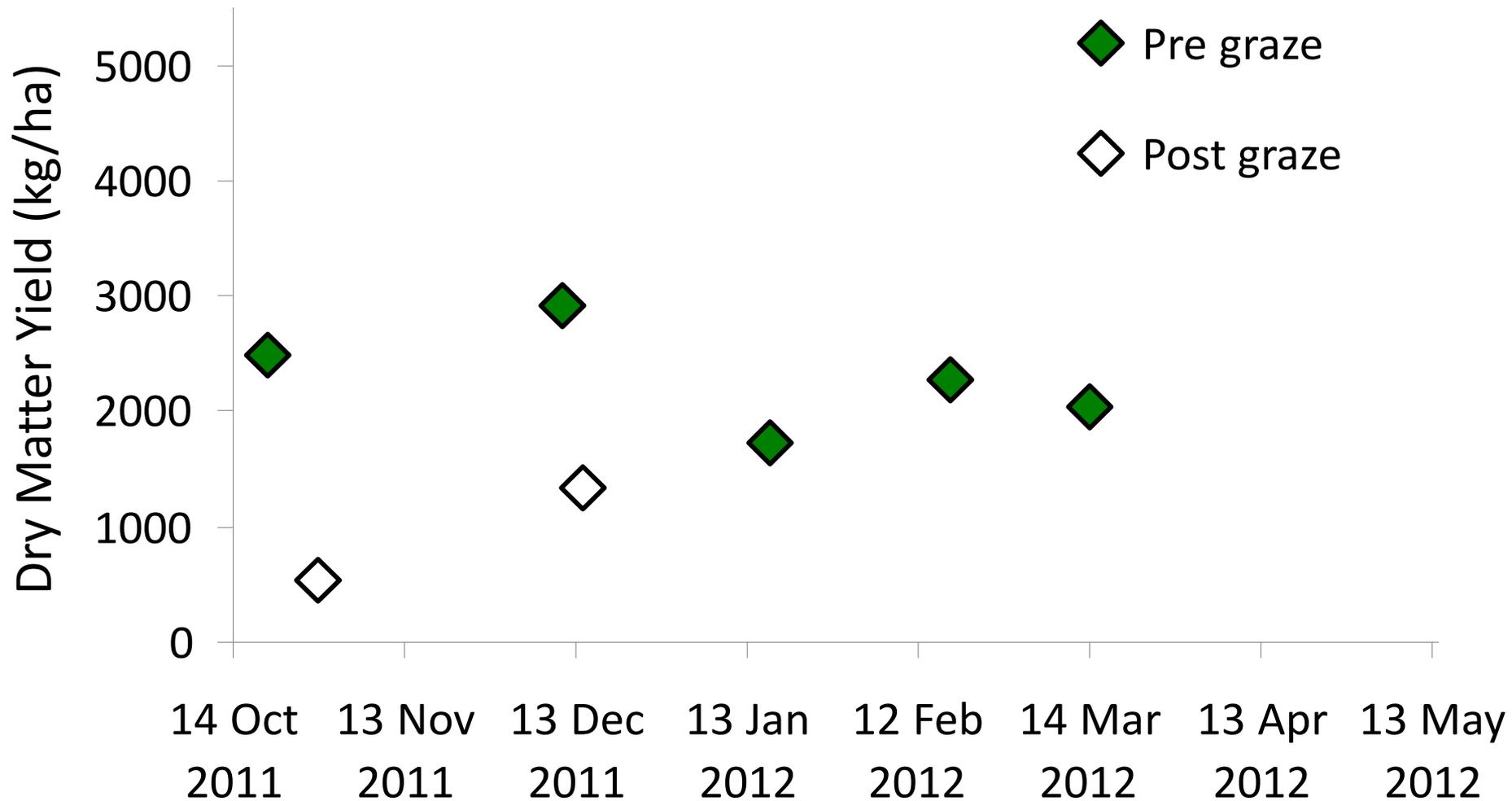


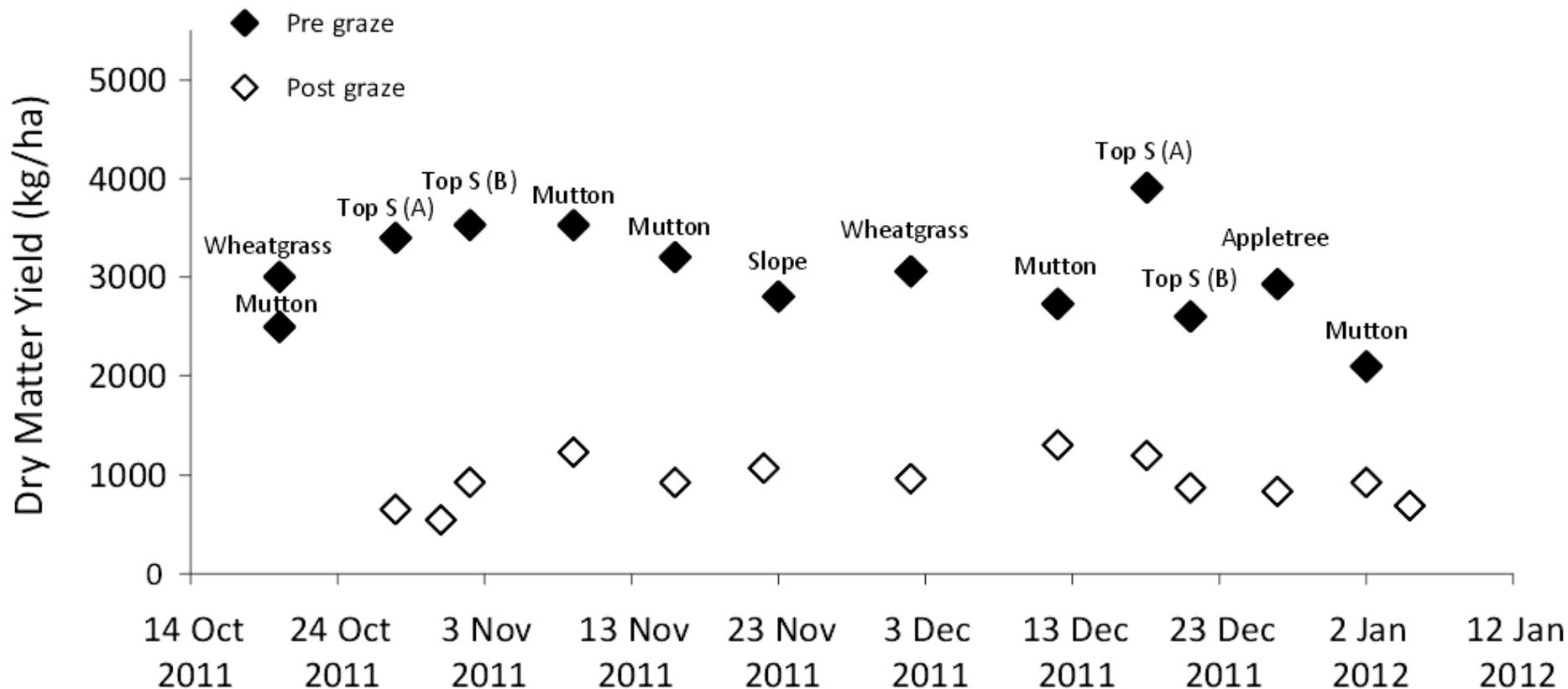


Photo: Bog Roy Station

2011 10 7

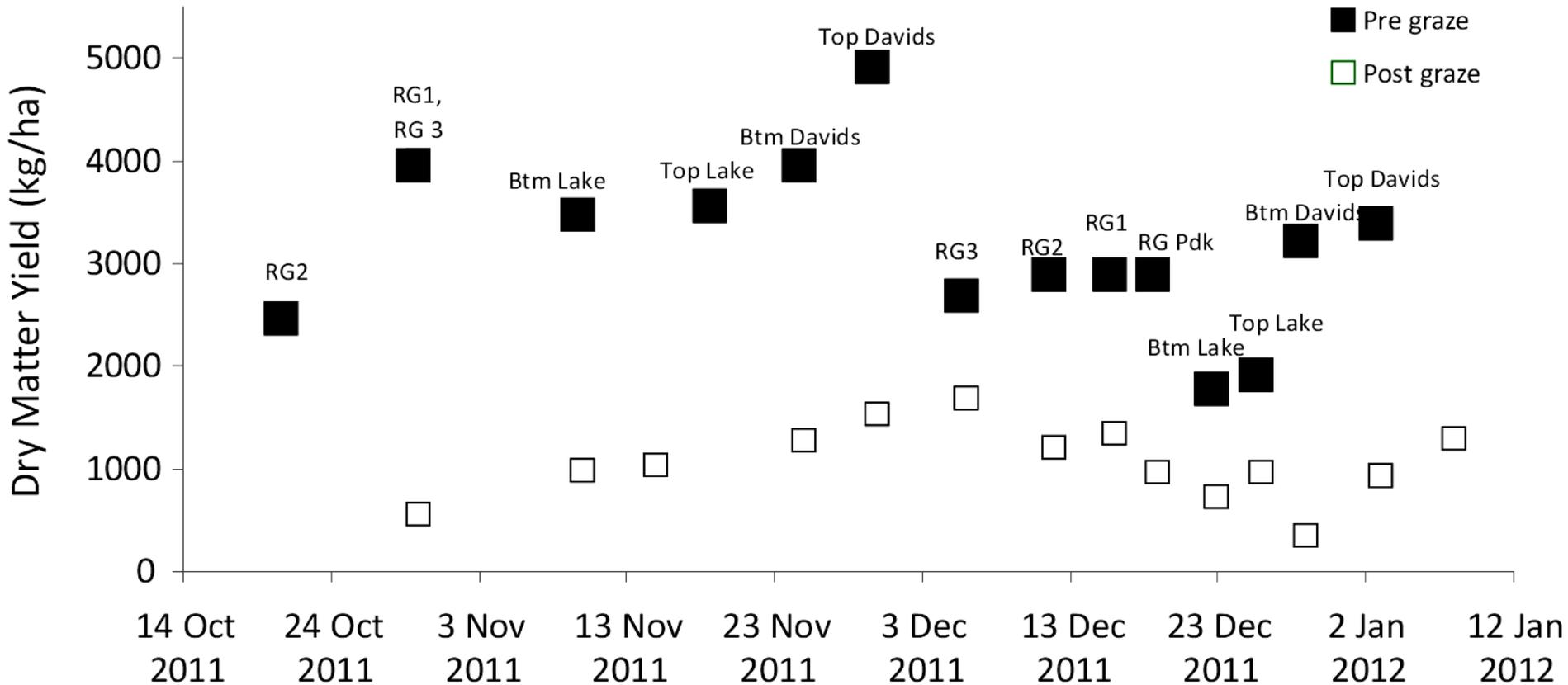
Paddock DM and mob rotation

Mobs 1, 2 & 3

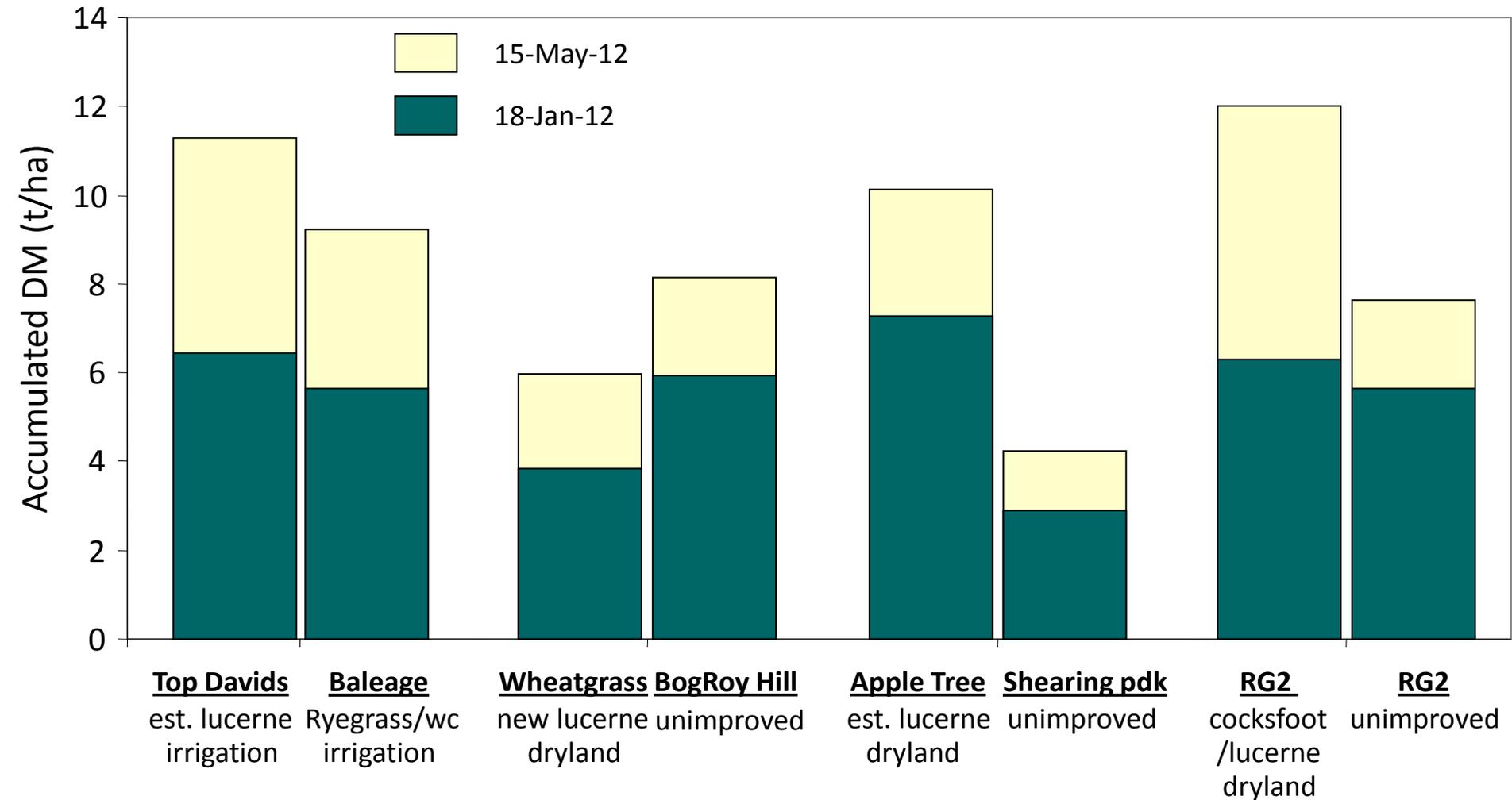


Paddock DM and mob rotation

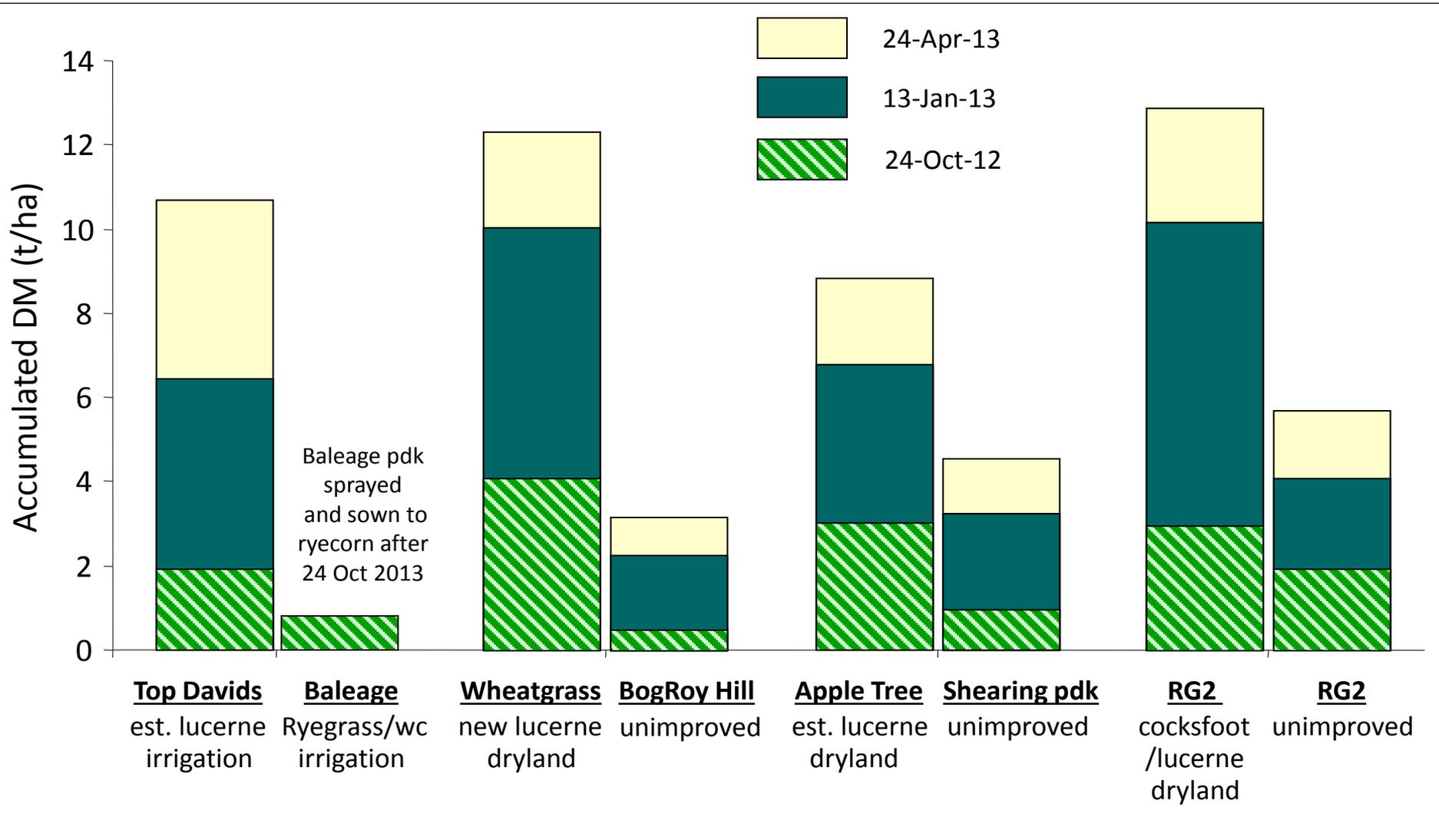
Mobs 4, 5 & 6



DM yield: Paired paddocks 2012



DM yield: Paired paddocks 2013





2011 10 7

'Bonavaree' production changes over 10 years

	2002	2012	Change
Land area (ha)	1100	1800	↑ 64%
Sheep numbers	3724	4158	↑ 12%
M. A. Scanning (%)	140	190	↑ 36%
Lambing (%)	117	145	↑ 24%
Lamb weights (kg)	13.3	19.0	↑ 43%
Lamb sold (kg)	38324	74460	↑ 94%
Wool (kg)	18317	20869	↑ 14%
Sheep:cattle	70:30	50:50	



Lambing onto Omaka Barley – North Face

Posted on August 27, 2012 by Cath Goulter

Omaka Barley is a great crop to use at Bonavaree. Barley is used here because it really fits in well with the Avery's system. The Omaka variety has been bred locally, and is very suitable for reliable dry matter production in a Marlborough dryland environment.

It is a multipurpose crop at Bonavaree, in that it is used as a green feed crop, and as a break crop. The Omaka is grazed multiple times from March till the end of August. Dry matter production is usually between 6-8 T/ha, and is grazed by both cattle and sheep.

Omaka Barley is also used regularly at Bonavaree for the purpose of breaking weed/pest cycles, and increasing base soil fertility in preparation for sowing lucerne, or a Bonavaree mix. Barley is used as the 2nd break crop in a multi stage lucerne renovation system that has been working very well. The 1st break crop used is an Annual Ryegrass that is grazed by multiple bearing ewes at lambing, and prime bull beef production. We will be following the progress of this renovation system through, with regular updates.

Some paddocks are used to grow Omaka Barley for two consecutive years, but because of the Avery's wider interest in establishing paddocks with Lucerne, barley is normally used as a 2nd break crop in the renovation process.



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References

- Kearney, J. K., Moot, D. J. and Pollock, K. M. 2010. Dryland lucerne production in Central Otago. Proceedings of the New Zealand Grassland Association, 72, 121-126. Online: http://www.grassland.org.nz/publications/nzgrassland_publication_32.pdf*
- Moir, J. L. and Moot, D. J. 2010. Soil pH, exchangeable aluminium and lucerne yield responses to lime in a South Island high country soil. Proceedings of the New Zealand Grassland Association, 72, 191-195. Online: http://www.grassland.org.nz/publications/nzgrassland_publication_42.pdf*