The new …

… 8 May 2013

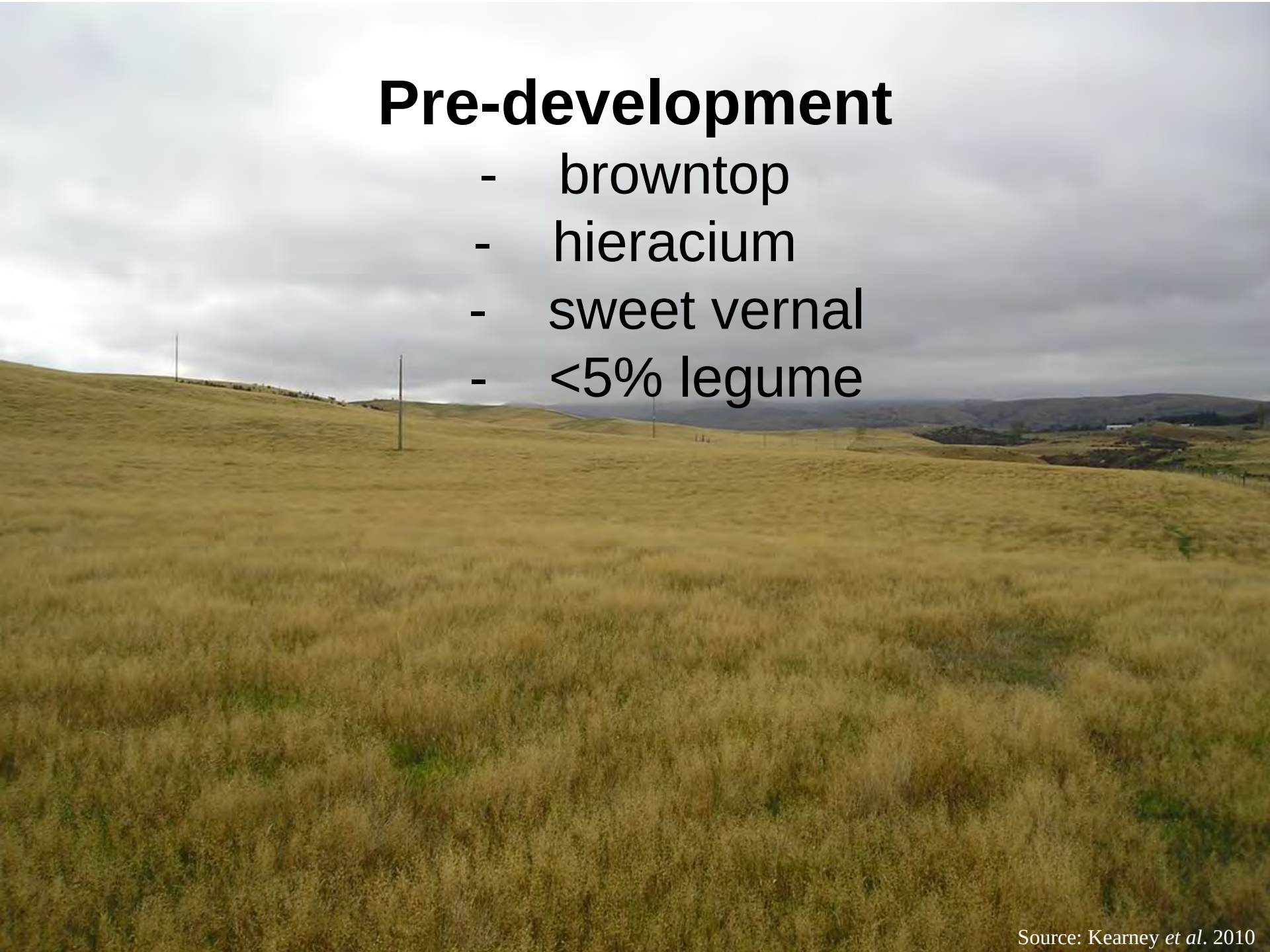
1. Lucerne establishment

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



Source: Kearney *et al*. 2010

Source: Kearney *et al*. 2010

Lime and Fertiliser Application

Lime 3-5 ton/ha

Fertiliser 250-500 kg/ha

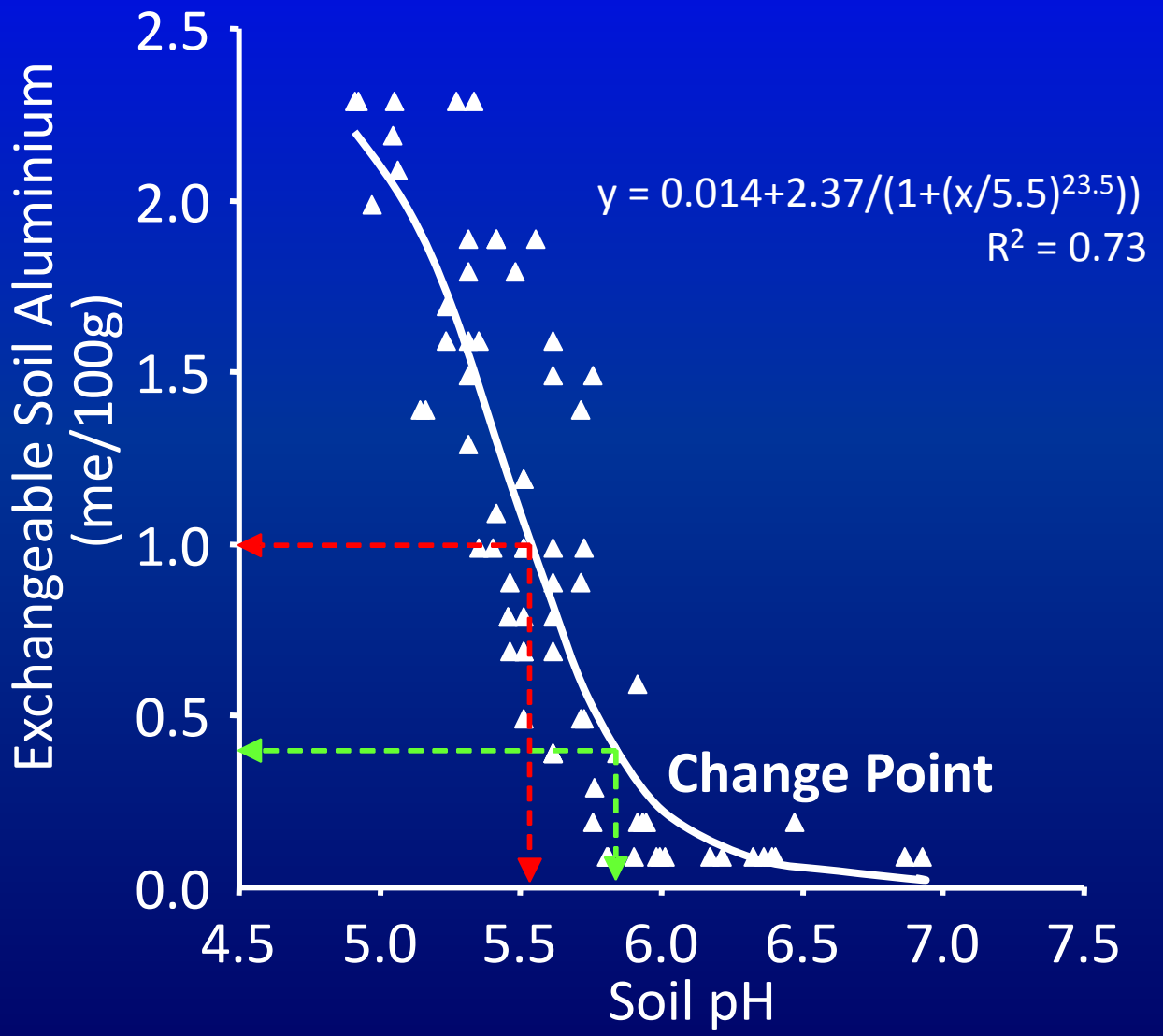
Source: Kearney *et al*. 2010

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 (µg/ml)	Potassium (QTU)	Sulphur (µg/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

Source: Kearney *et al*. 2010

Soil pH & exchangeable Aluminium



Source: Moir & Moot 2010

No Lime - Lucerne

Lucerne root

~8 months after sowing
> 1.5 m length

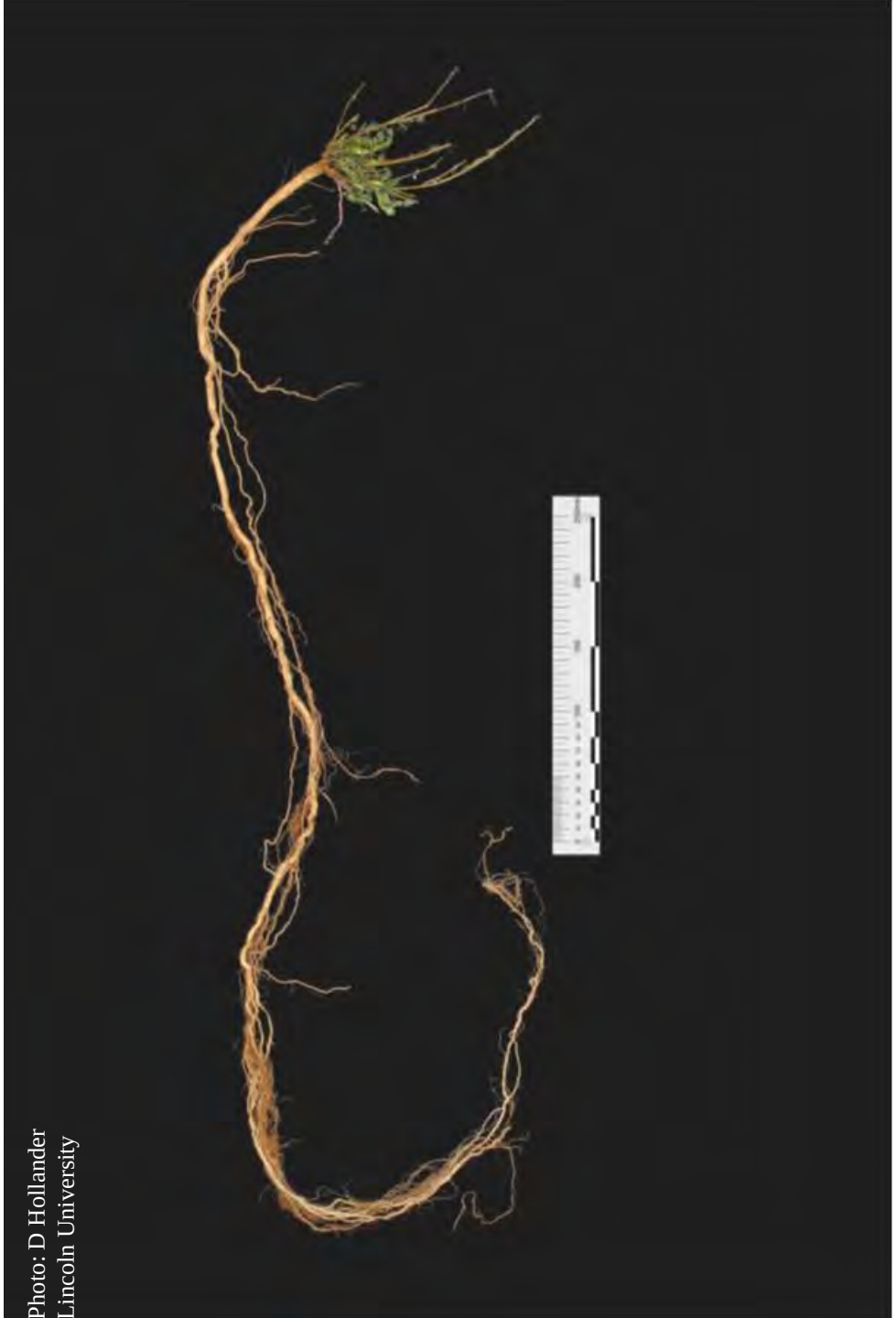


Photo: D Hollander
Lincoln University

Autumn Spraying

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

Key Results

- Conserve soil moisture
- Kill mass root systems

Source: Kearney *et al*. 2010

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

Source: Kearney *et al*. 2010

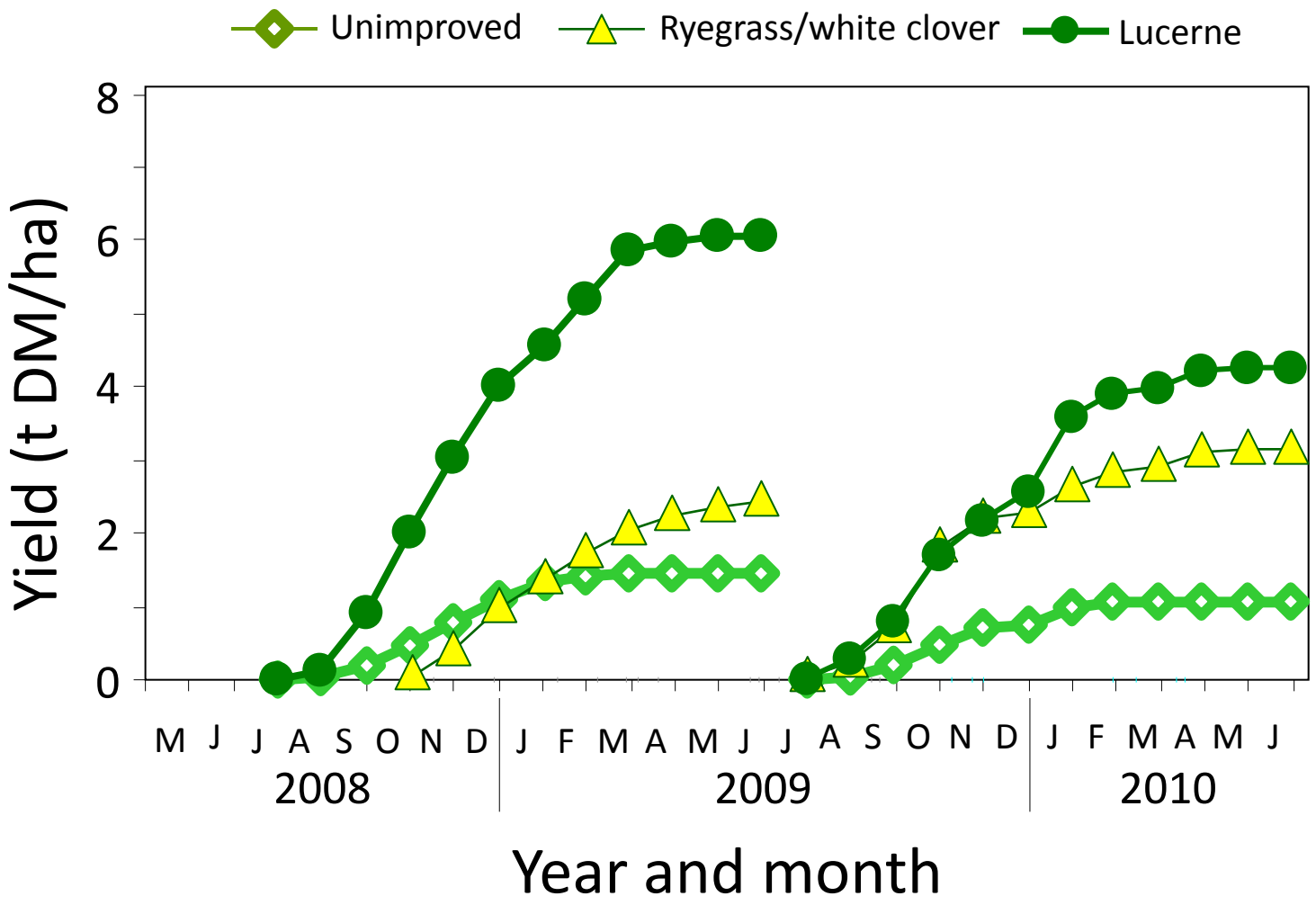
Styx Station

Sown 21/11/2007

Photo taken 1/11/2010

Source: Kearney *et al*. 2010

Pasture growth



Source: Kearney *et al*. 2010

Photo: 'Bonavaree'
Marlborough

Photo: V Fasi (LU)
Lees Valley

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

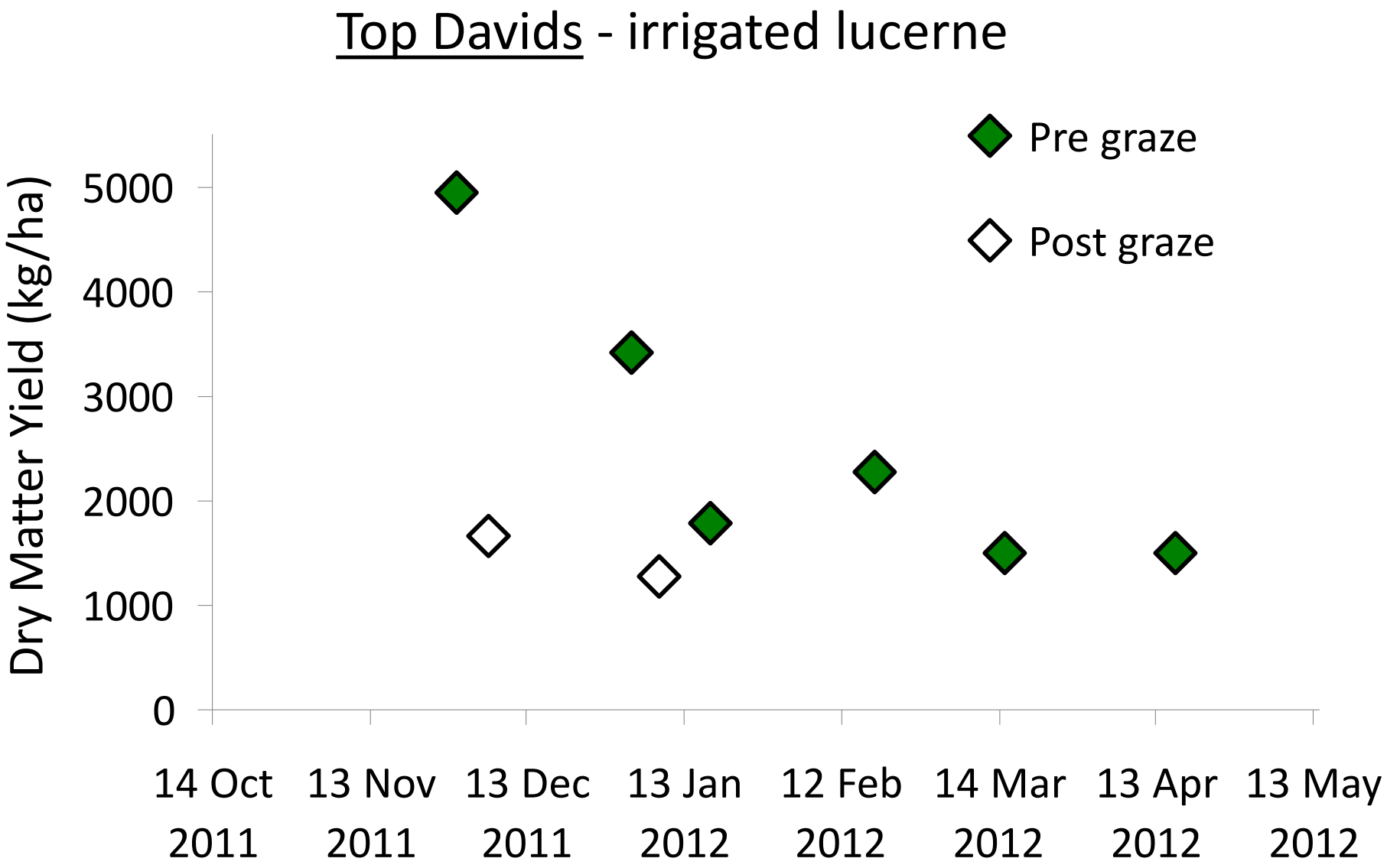
Photo: 'Bog Roy Station

Photo: Bog Roy Station

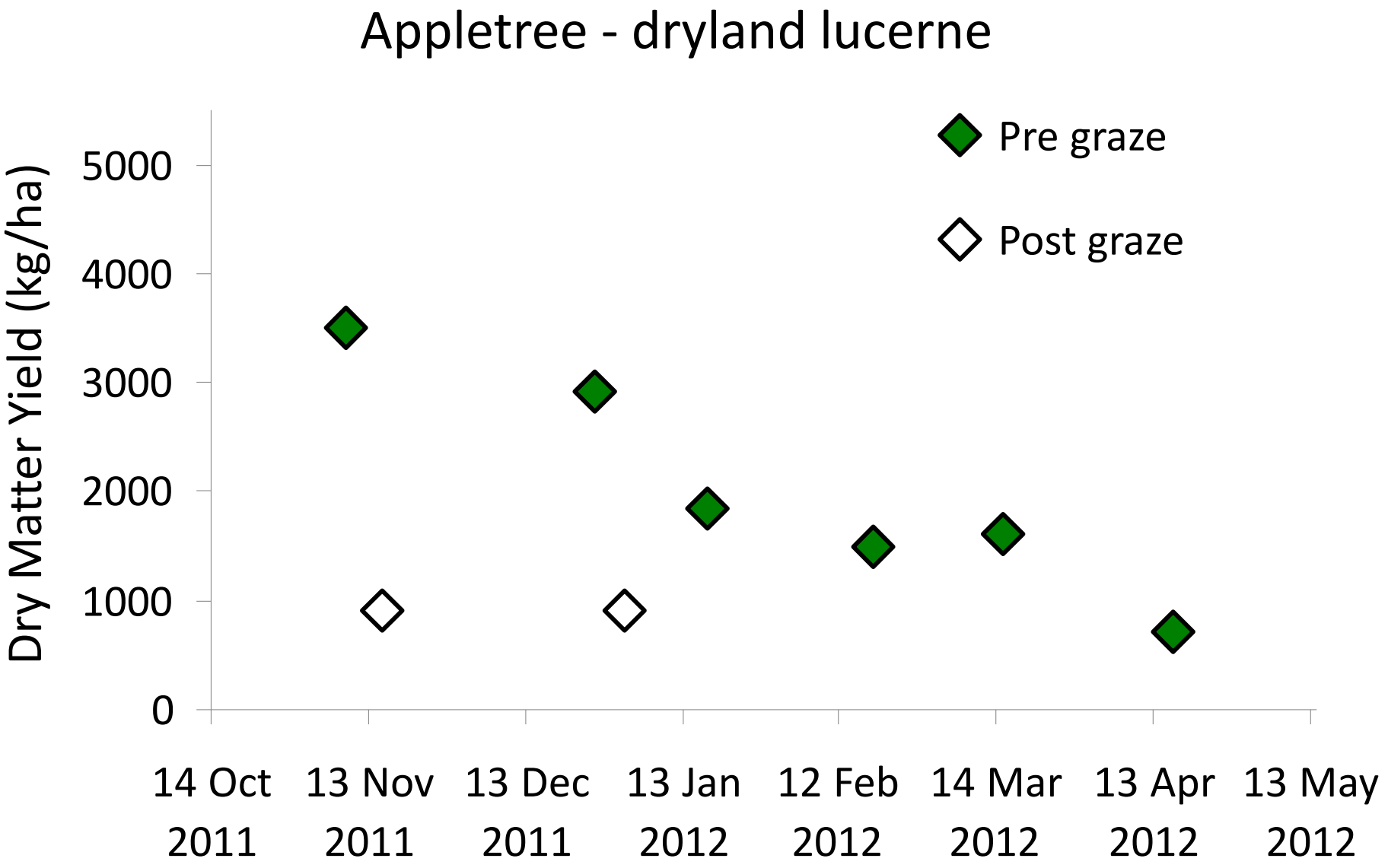
Photo: 'Bog Roy Station

Photo: 'Bog Roy Station

DM yield: improved paddocks



DM yield: improved paddocks



DM yield: improved paddocks

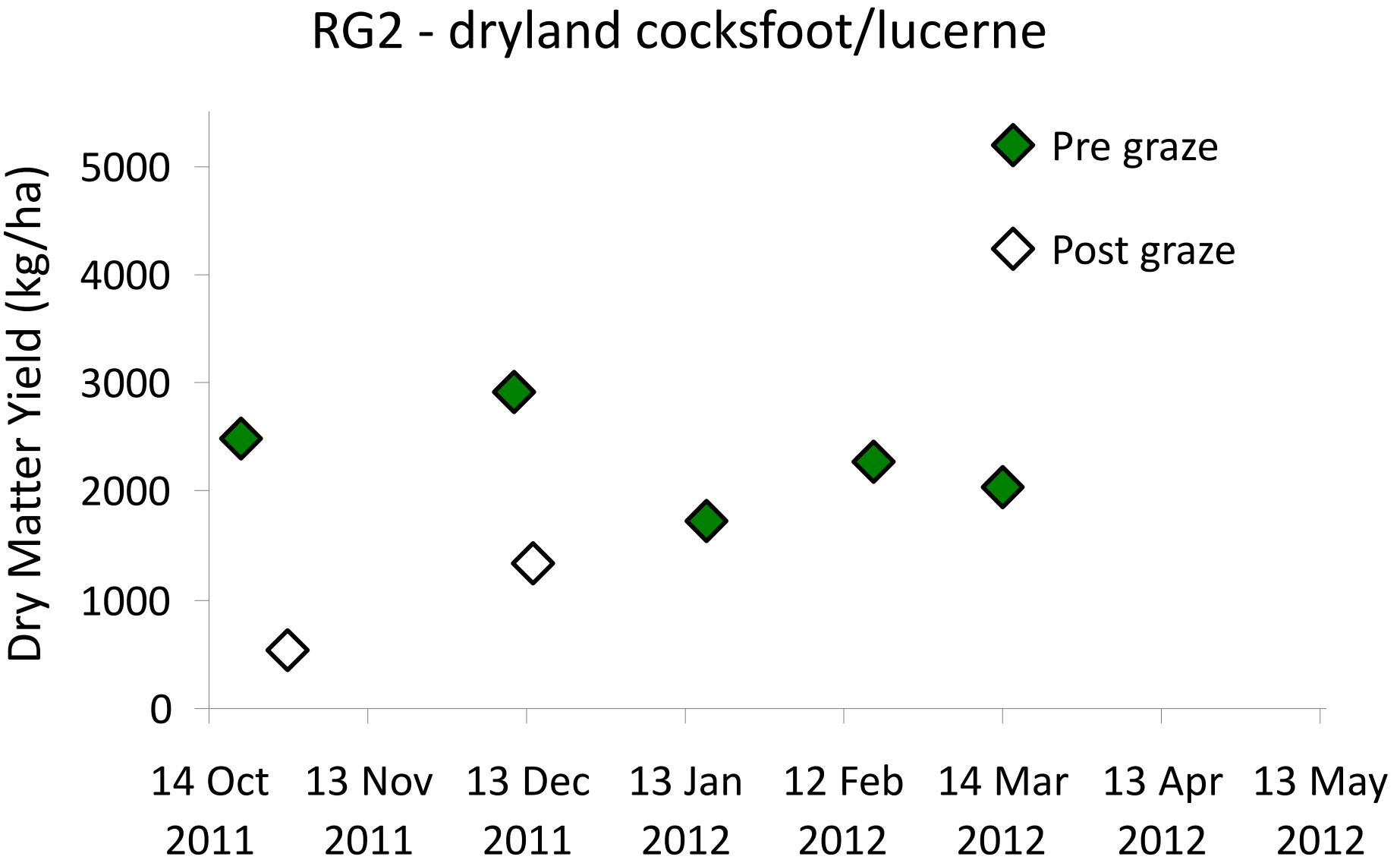
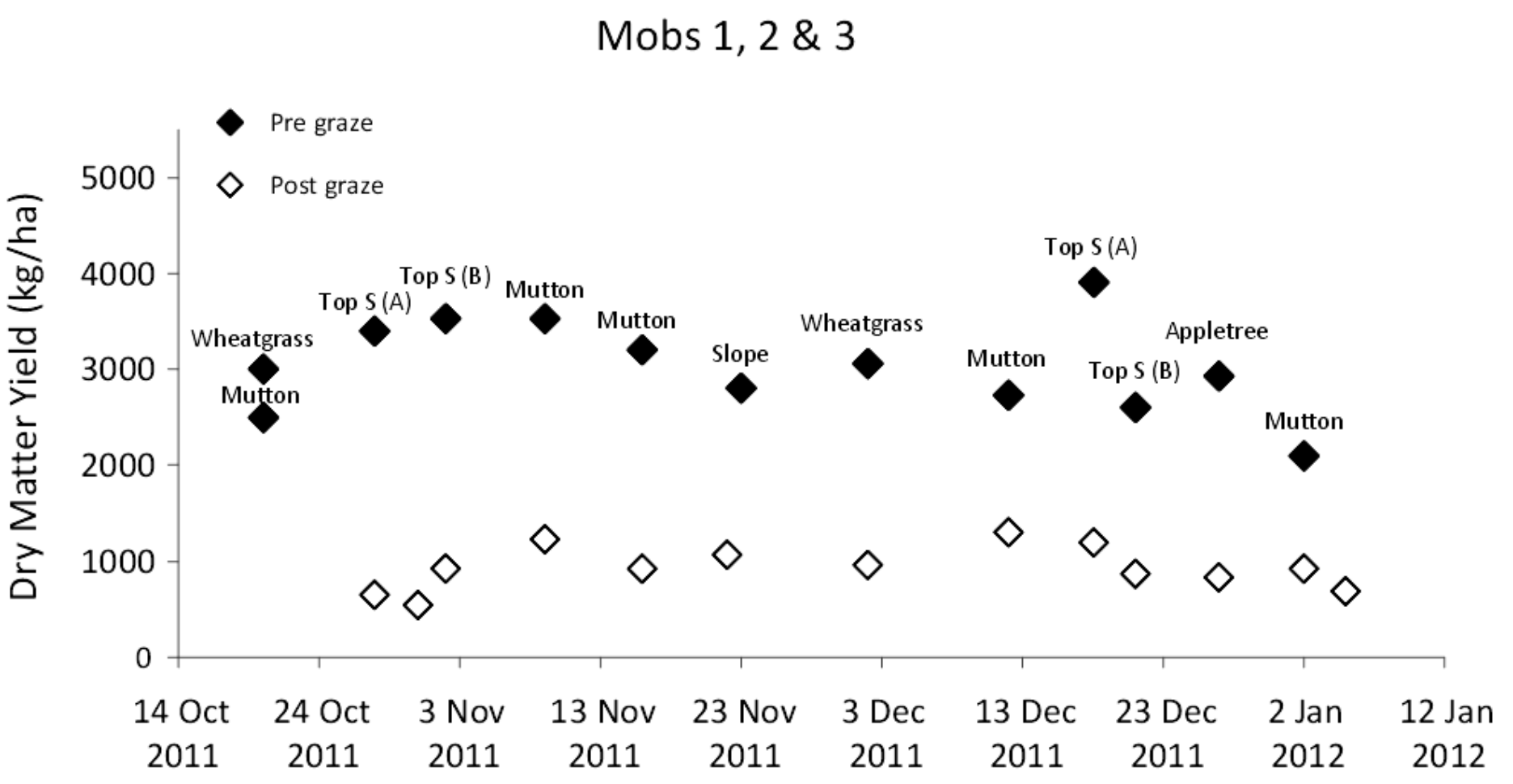
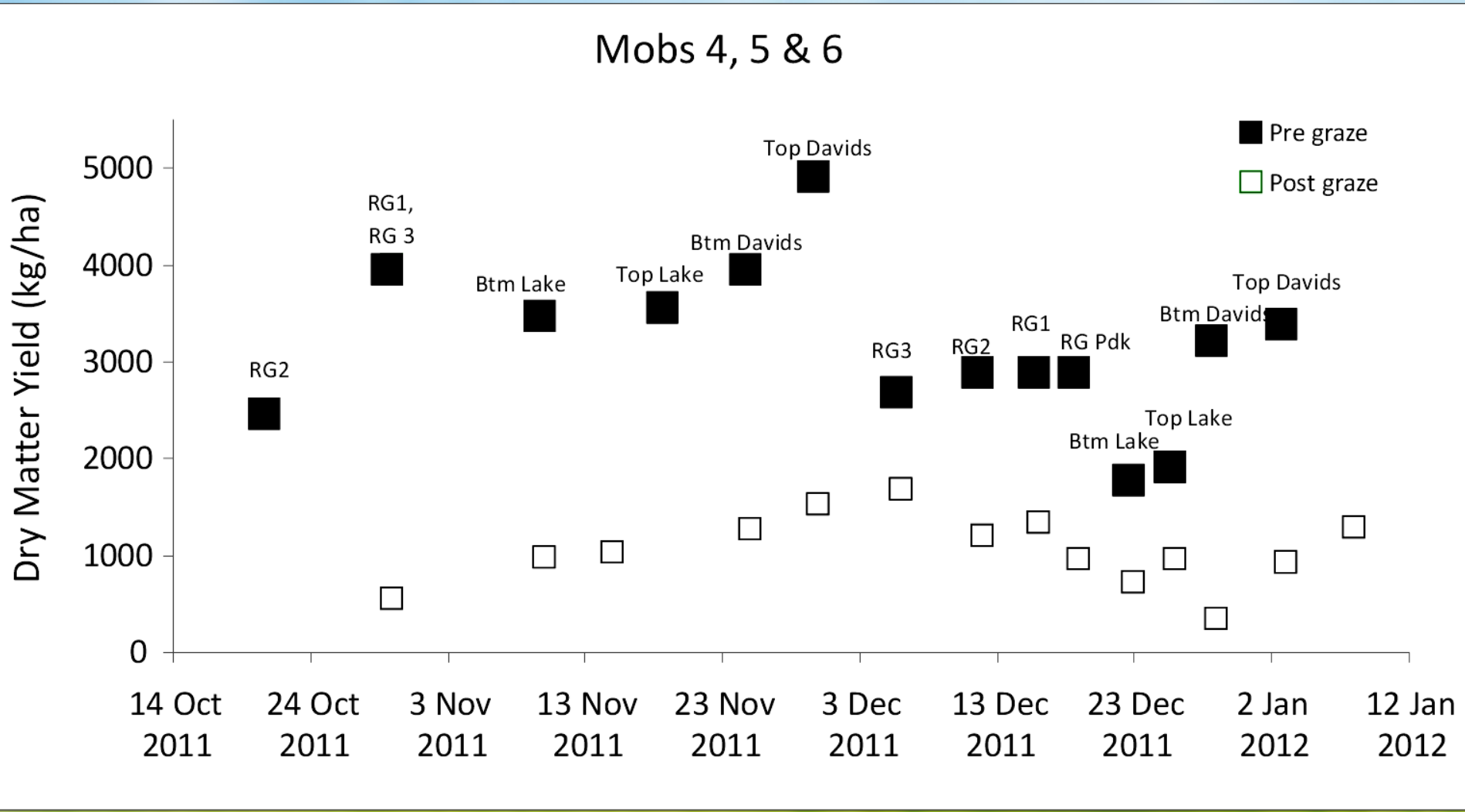


Photo: Bog Roy Station

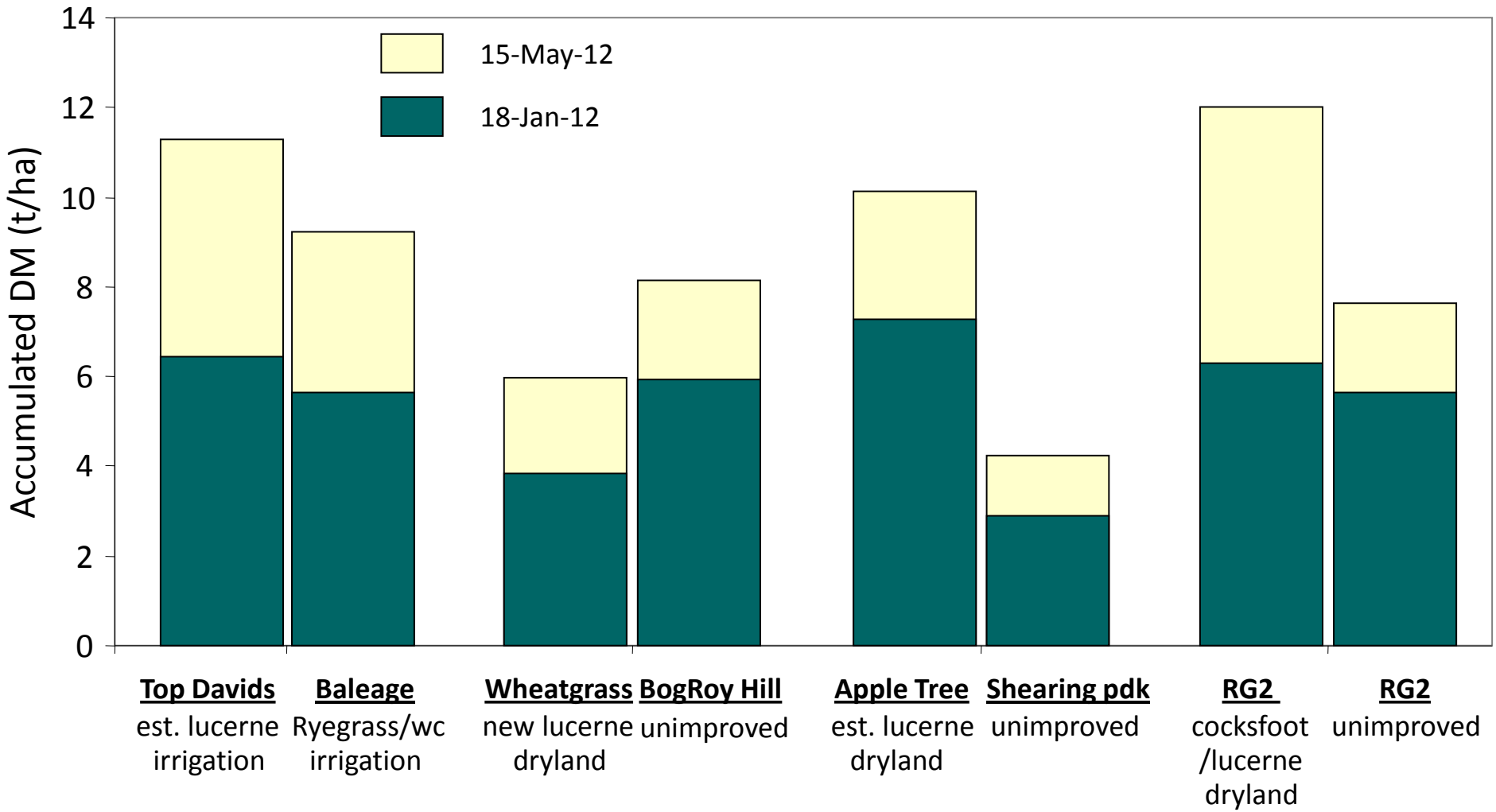
Paddock DM and mob rotation



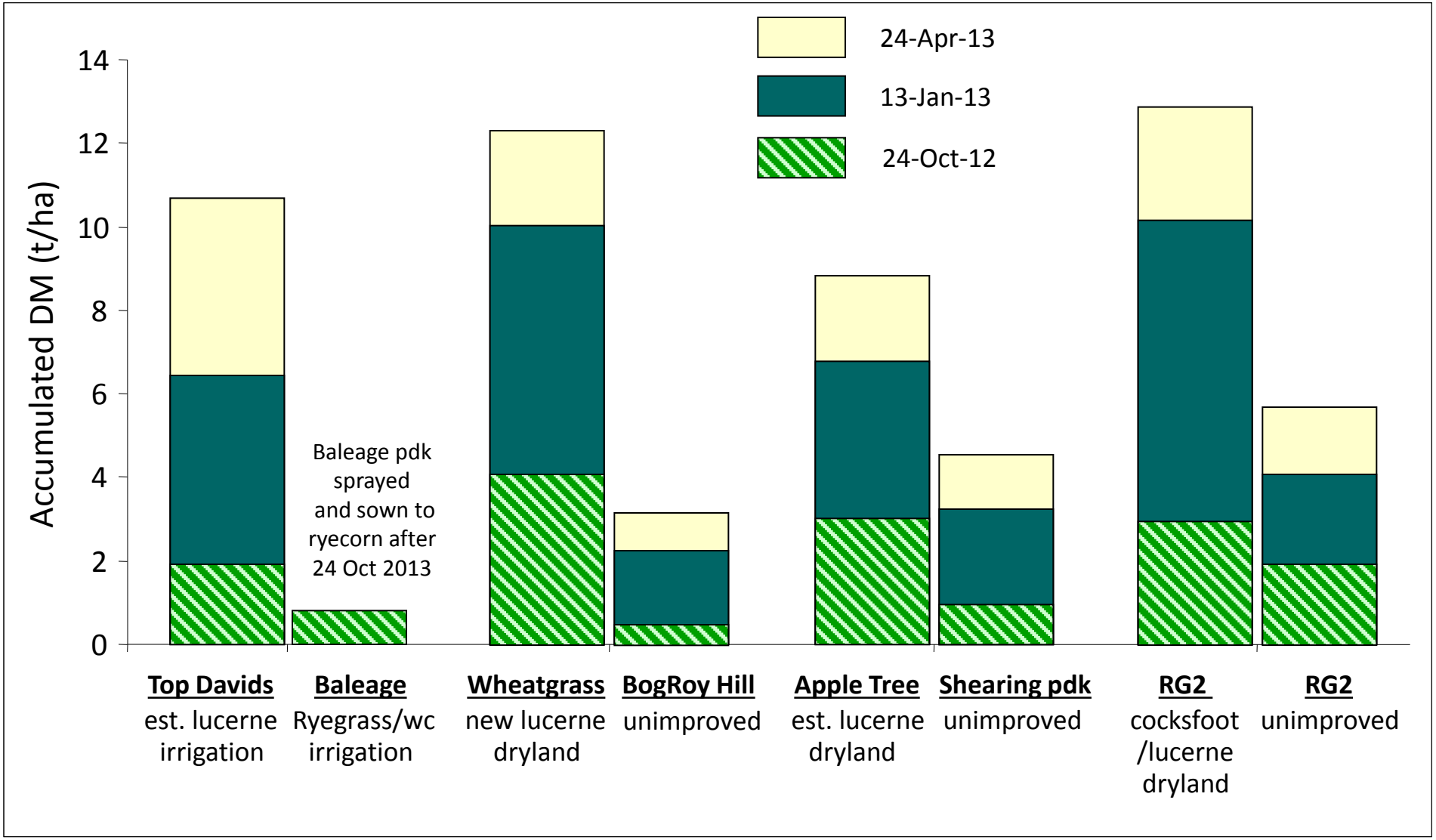
Paddock DM and mob rotation



DM yield: Paired paddocks 2012



DM yield: Paired paddocks 2013

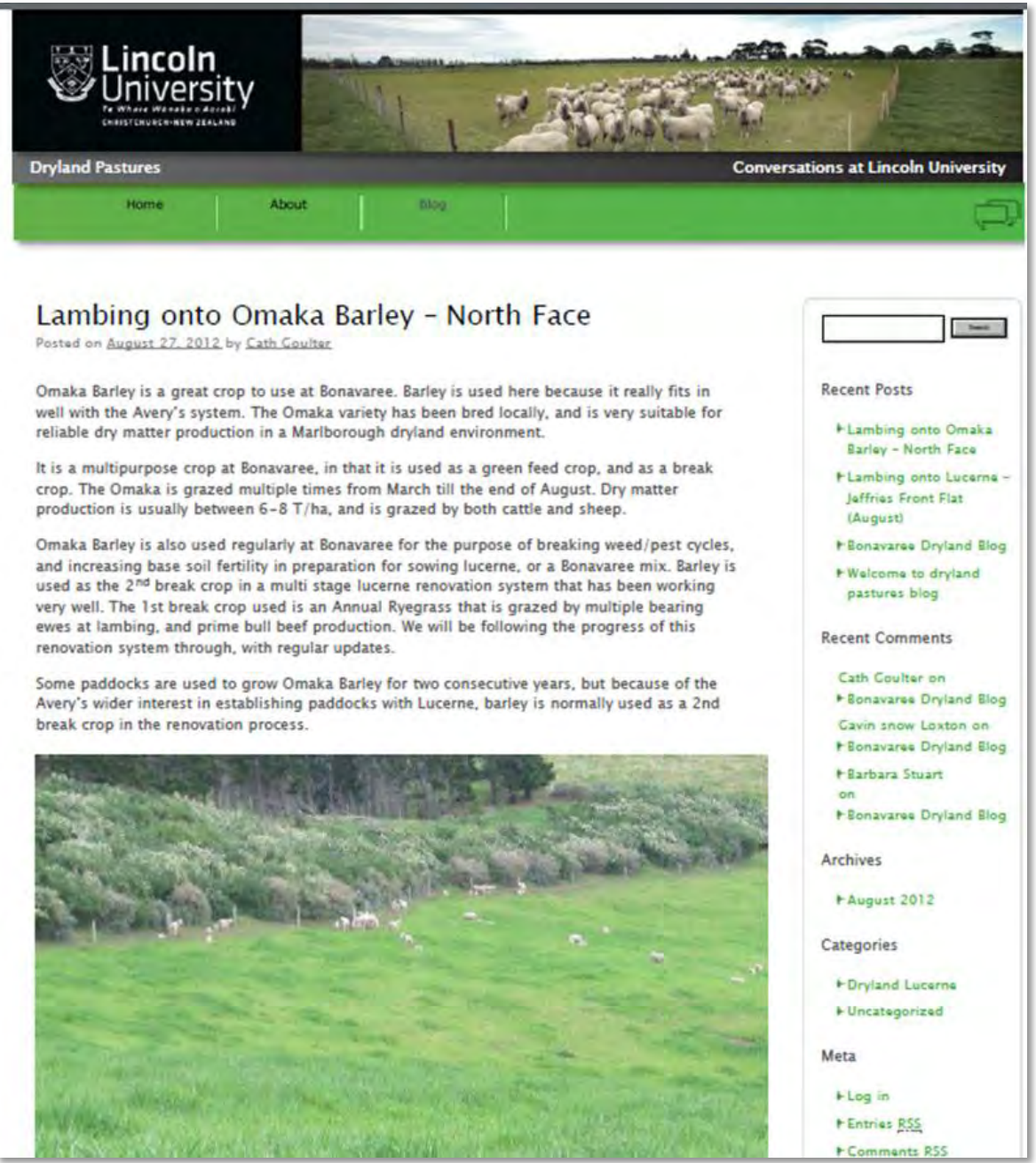



2011 10 7

‘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	

www.lincoln.ac.nz/conversation/drylandpastures/



The Blog……

- On-farm activity diary
- Slide shows, photos and video
- Ability for farmers to comment/question/query
- Farmers and researchers can respond

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