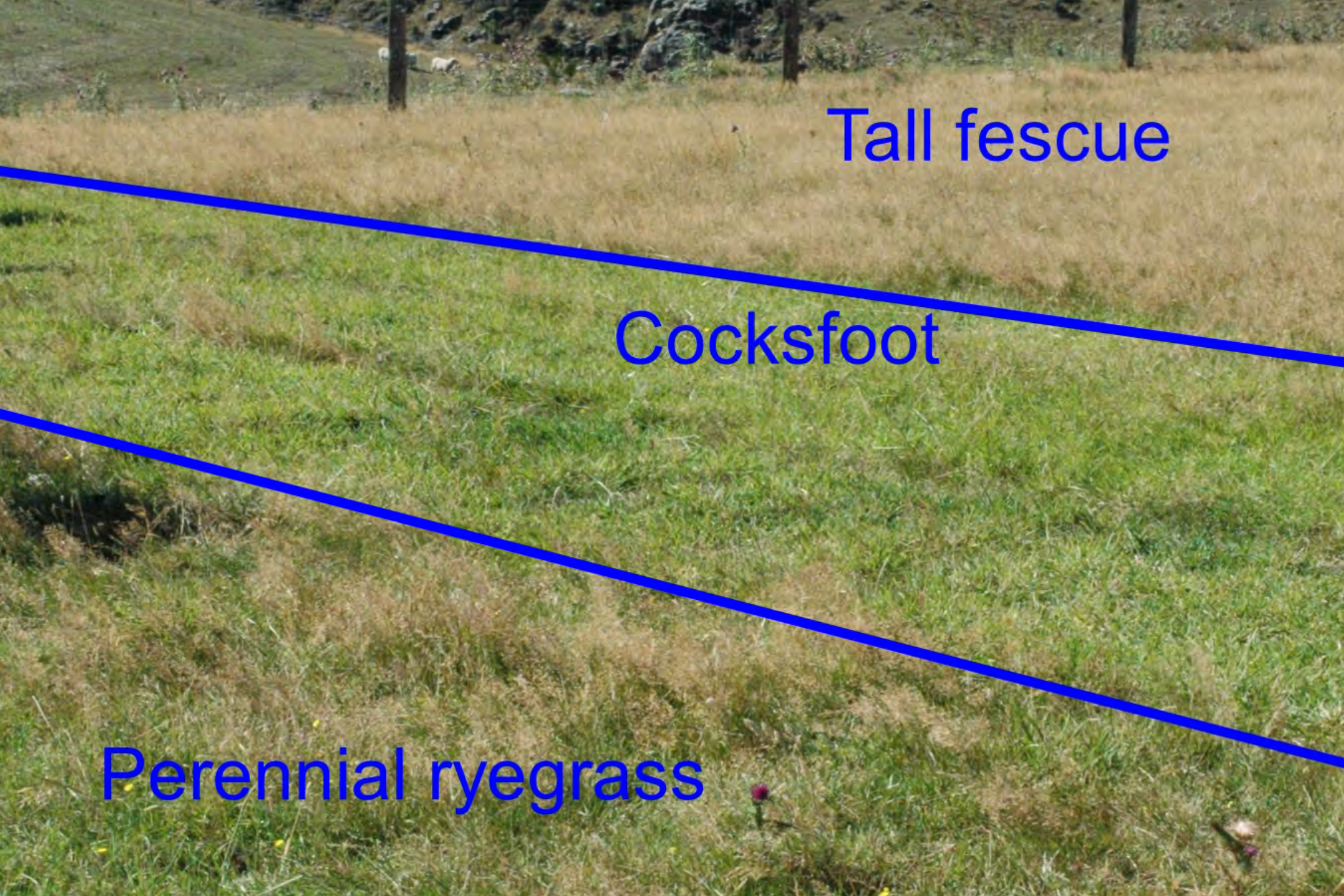
LUCERNE

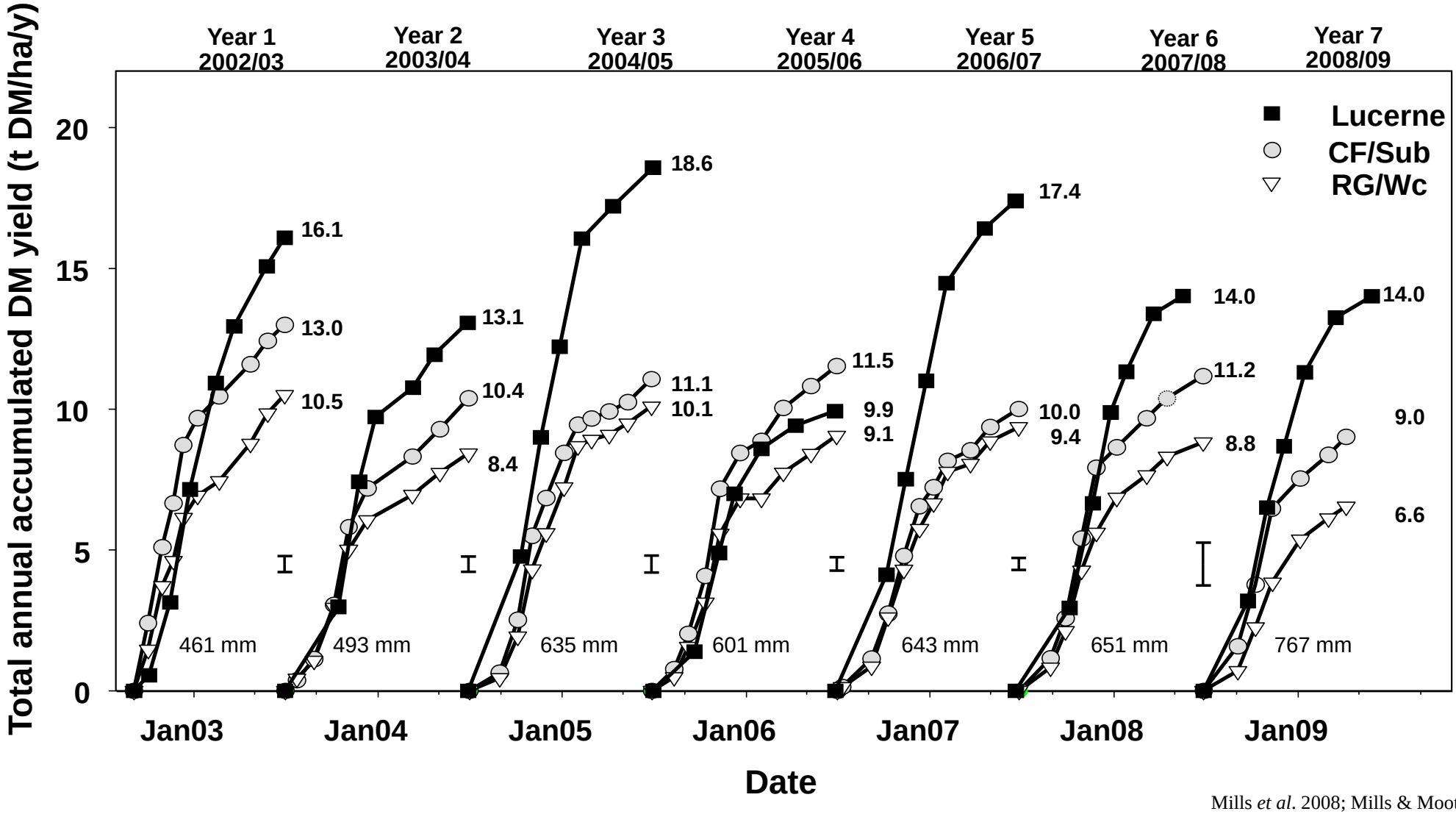
- agronomy and grazing management

Dr Derrick Moot

Professor of Plant Science


Tall fescue
Cocksfoot
Perennial ryegrass

MaxClover - Lincoln University



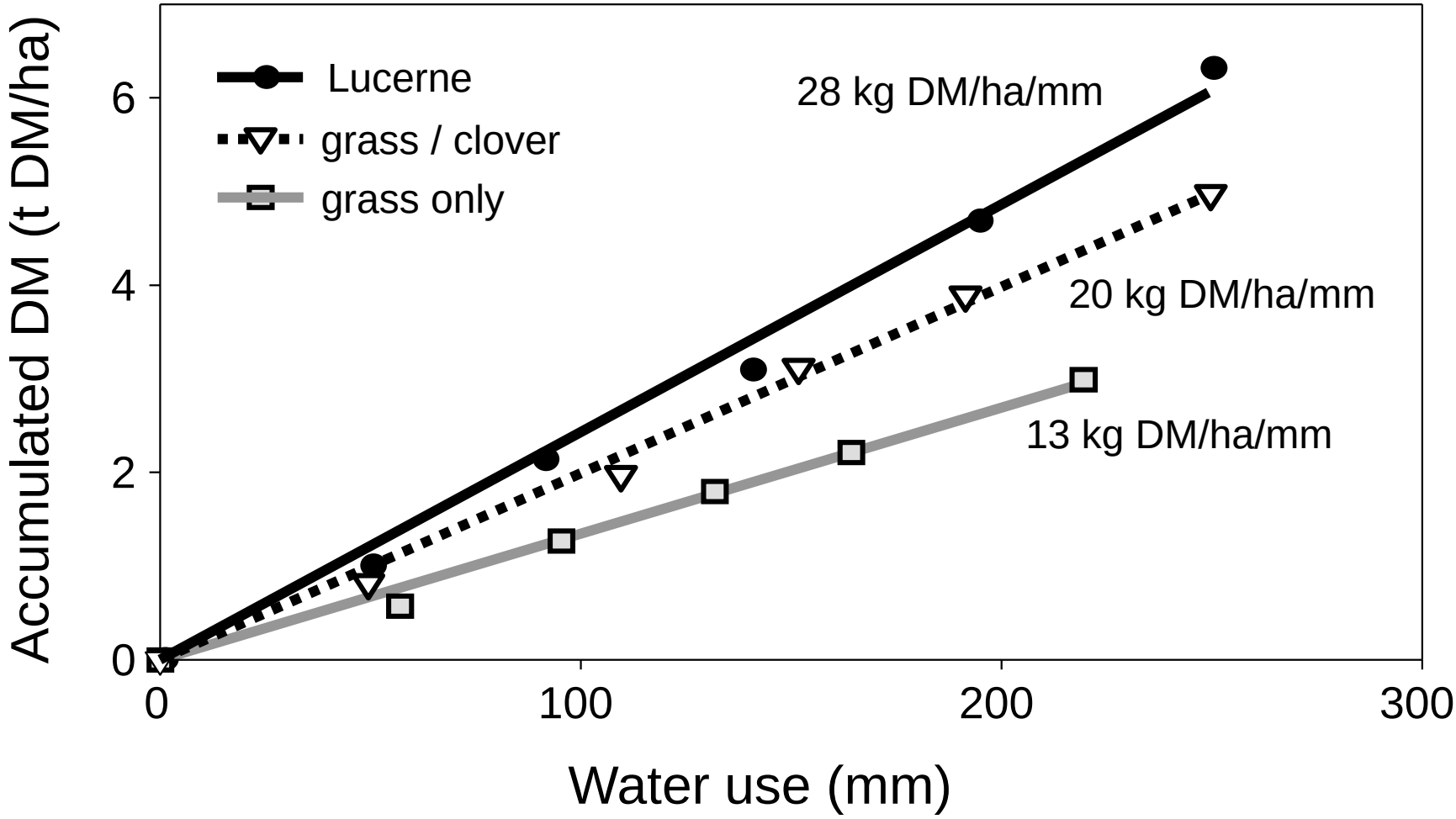
Mills *et al*. 2008; Mills & Moot 2010

RG/Wc pastures

Unsown species <5% in Year 1 …….>45% in Year 6

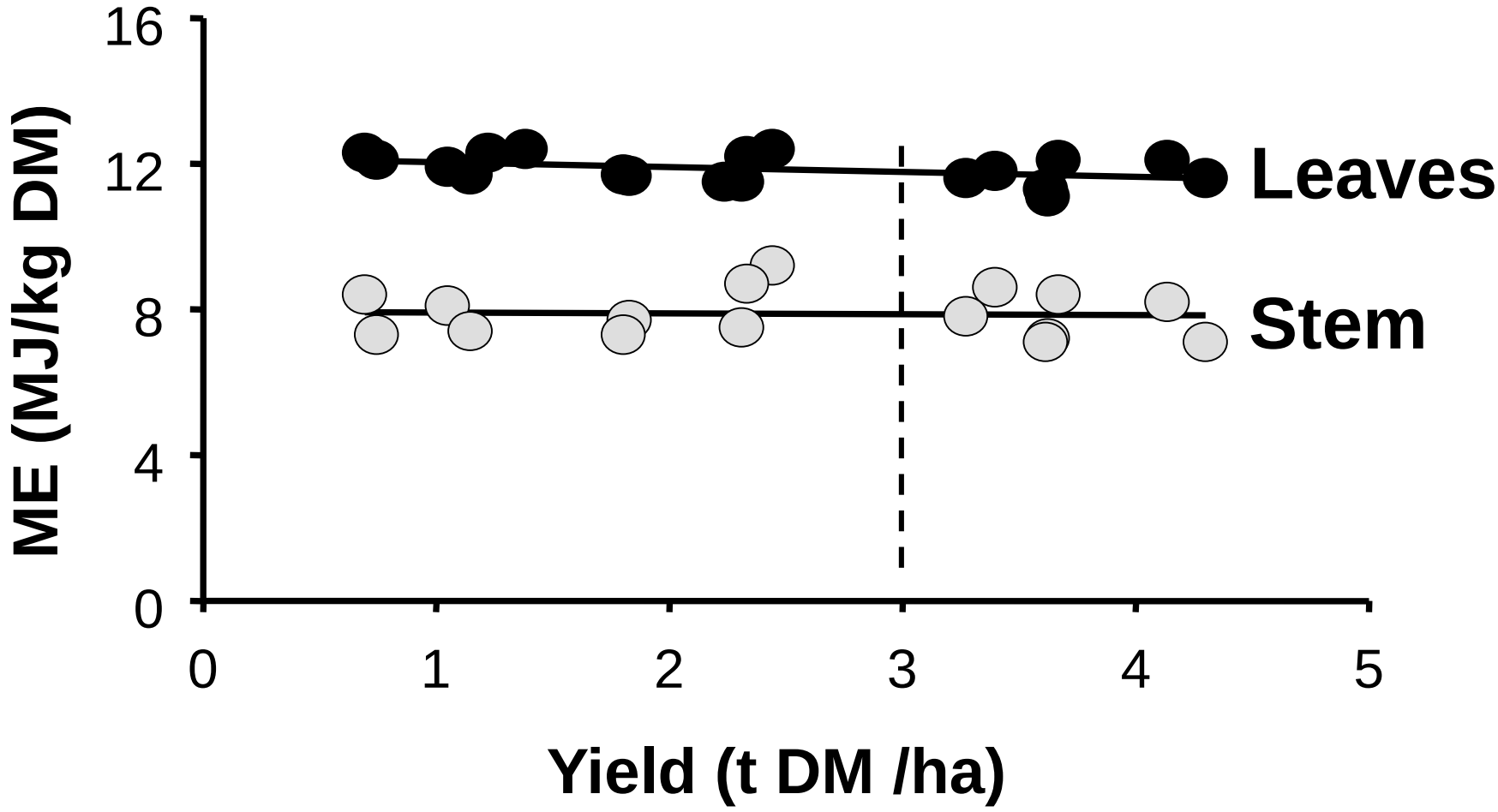
Lucerne pastures

Spring WUE: legume = (nitrogen)



Moot *et al*. 2008

Metabolisable energy of lucerne

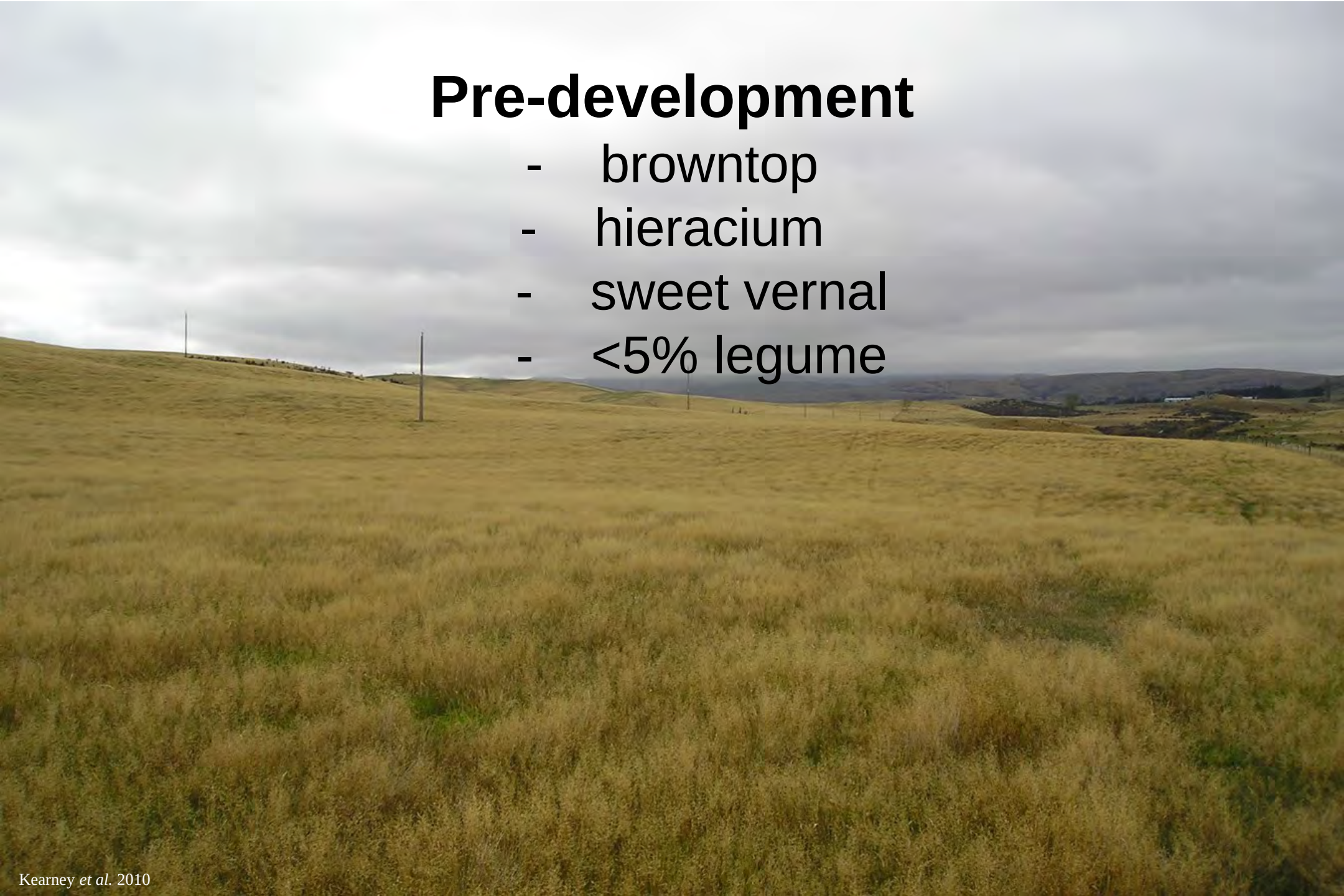


Brown & Moot 2004

1. Lucerne establishment

Soils - deep free draining
- pH 6.0 – 7.0
- rg/wc fertility

Sowing - 10-25 mm
- inoculated 8-10 kg/ha
- spring or autumn (grass grub)
- cultivated or direct drilled
- after fallow?



Pre-development

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

Kearney *et al.* 2010

Lime and Fertiliser Application

Lime 3-5 ton/ha

Fertiliser 250-500kg/ha

Kearney *et al*. 2010

Autumn Spraying

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

Key Results

- Conserve soil moisture
- Kill mass root systems

Kearney *et al*. 2010


2nd Spray – Spring
Glyphosate, insecticide, penetrant
Result from Autumn spray, photo taken 1 November 2010
Kearney *et al*. 2010

Kearney *et al*. 2010

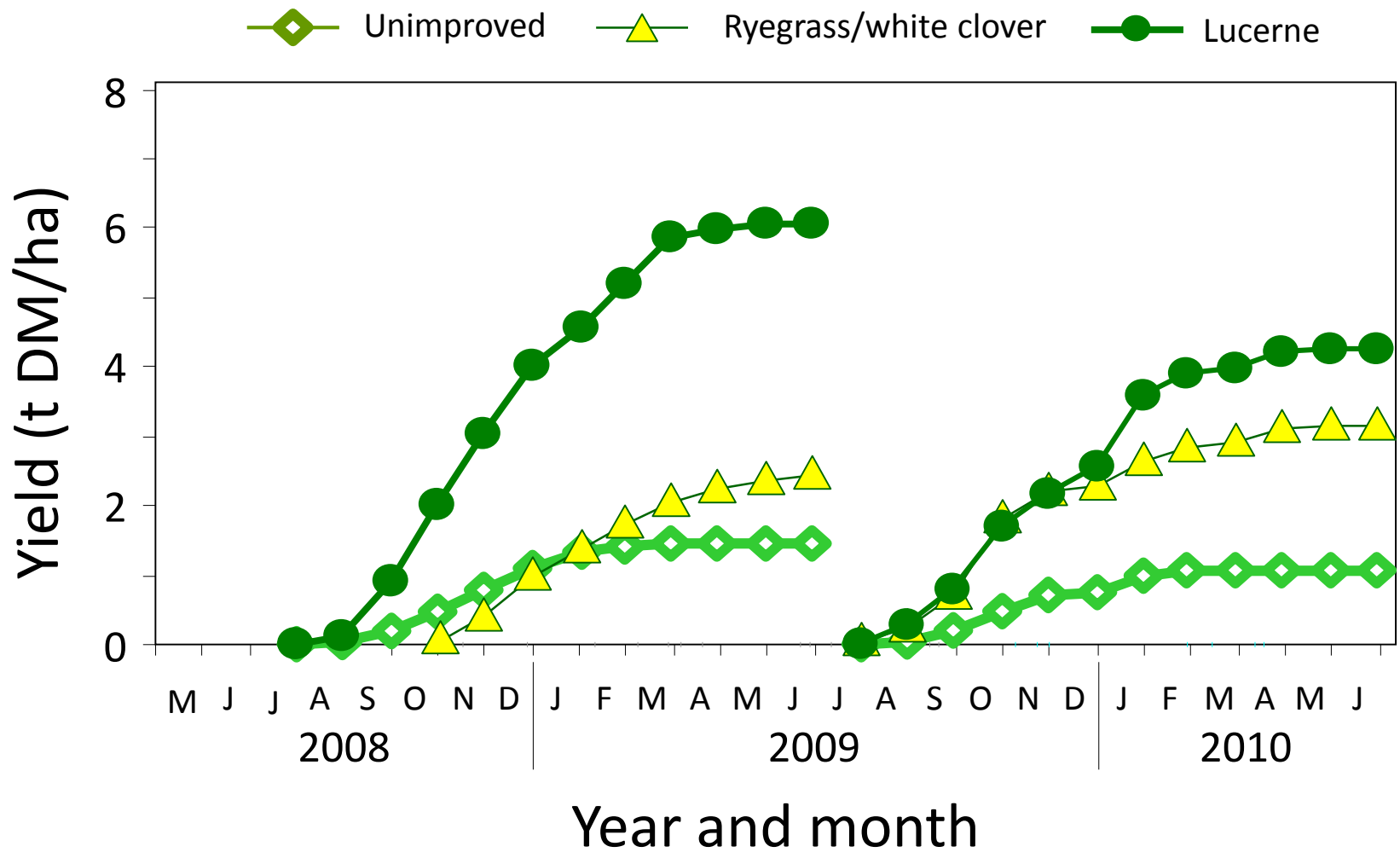
Styx Station

Sown: 21/11/2007

Photo taken: 01/11/2010

Kearney *et al*. 2010

Pasture growth



Kearney *et al*. 2010

Doug and Fraser Avery ‘Bonavaree’
1100 ha 30% lucerne (65% of easier country)

Photo: Doug Avery ‘Bonavaree’

Seasonal grazing management

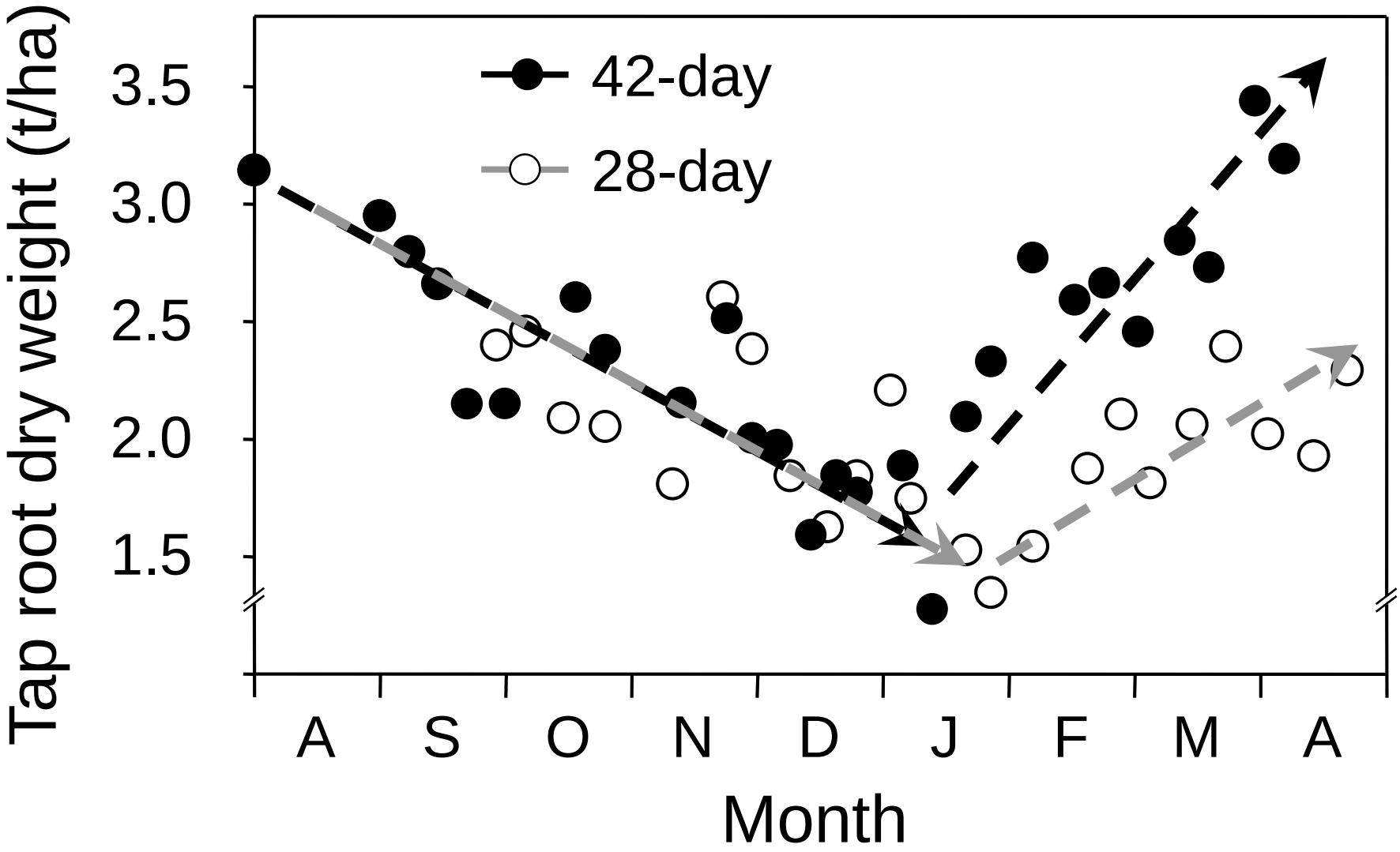
Spring

- 1st rotation aided by root reserves to produce high quality vegetative forage.

- can graze before flowers appear (~1500 kg DM/ha) ideally ewes and lambs but

Never lamb on or set stock lucerne

Partitioning to roots



Moot *et al.* 2003

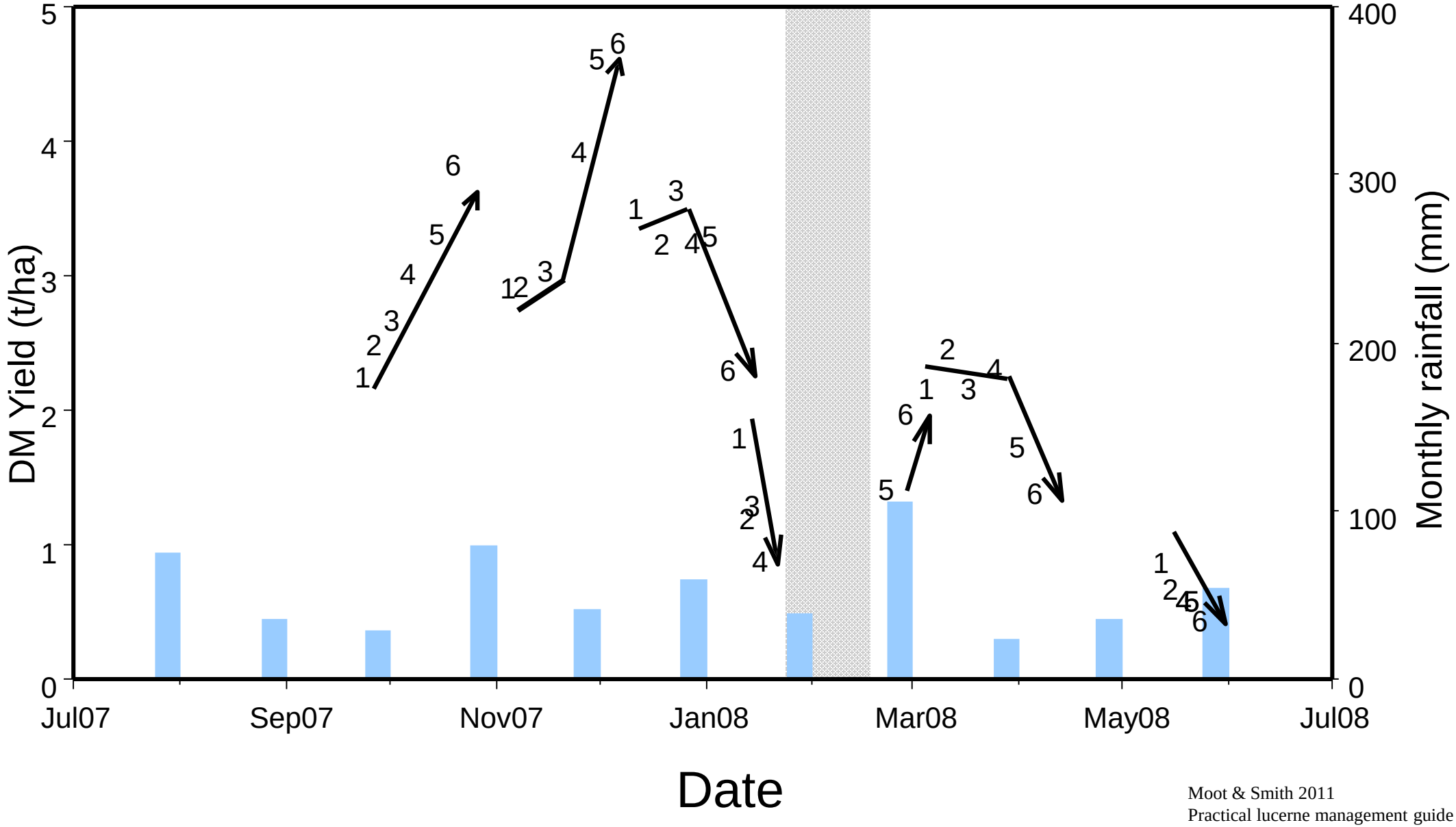

Photo: Edmar Teixeira
Linoln University

‘Bonavaree’ Marlborough
July 2010

Maximize reliable spring growth – high priority stock

Rotation 1 Pre-graze
Plot 1 (21/9/07)
2.3 t DM/ha
20-25 cm tall

Grazing Rotations at Lincoln University



Moot & Smith 2011
Practical lucerne management guide

Photo: 'Bonavaree'

Photo: 'Bonavaree'

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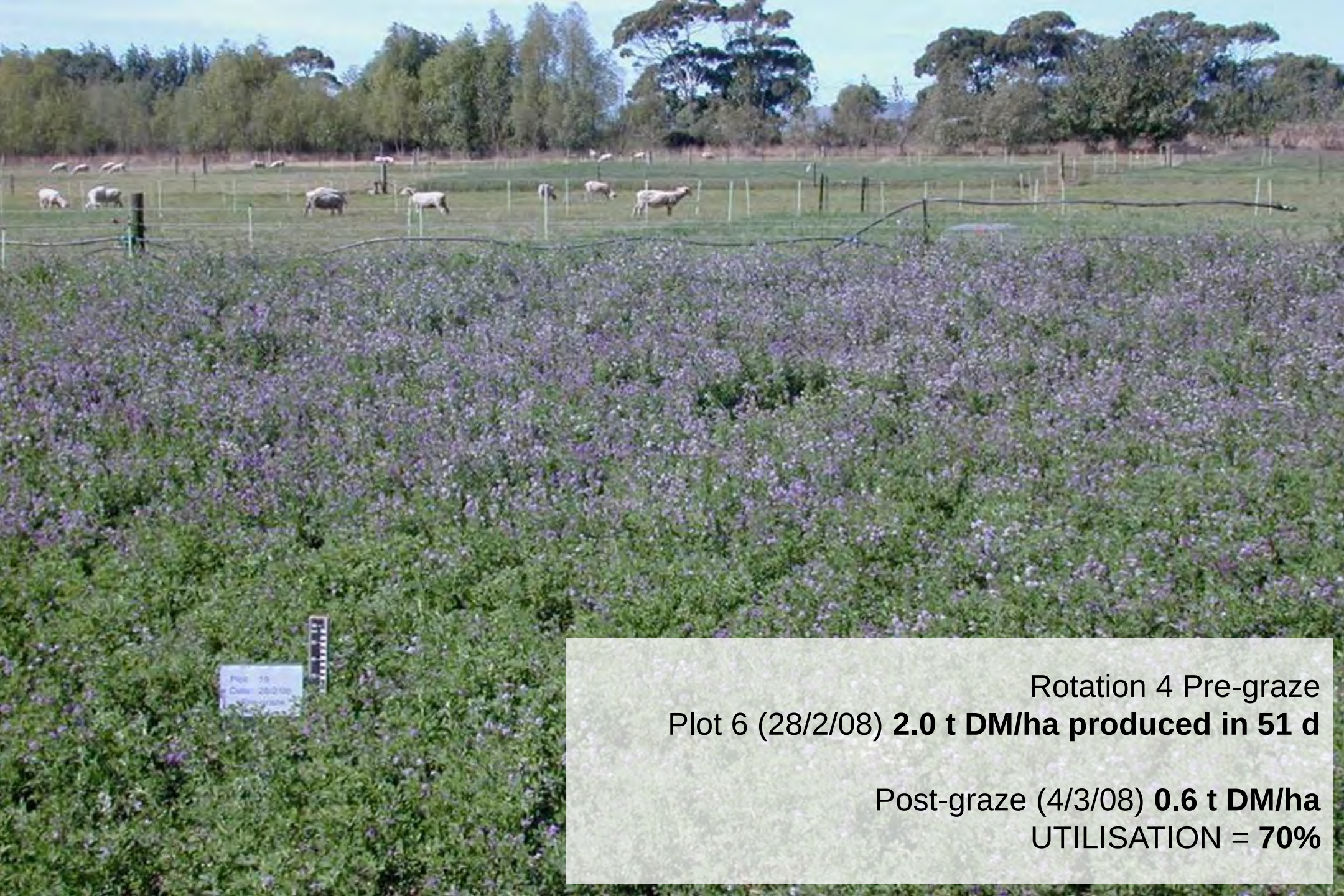
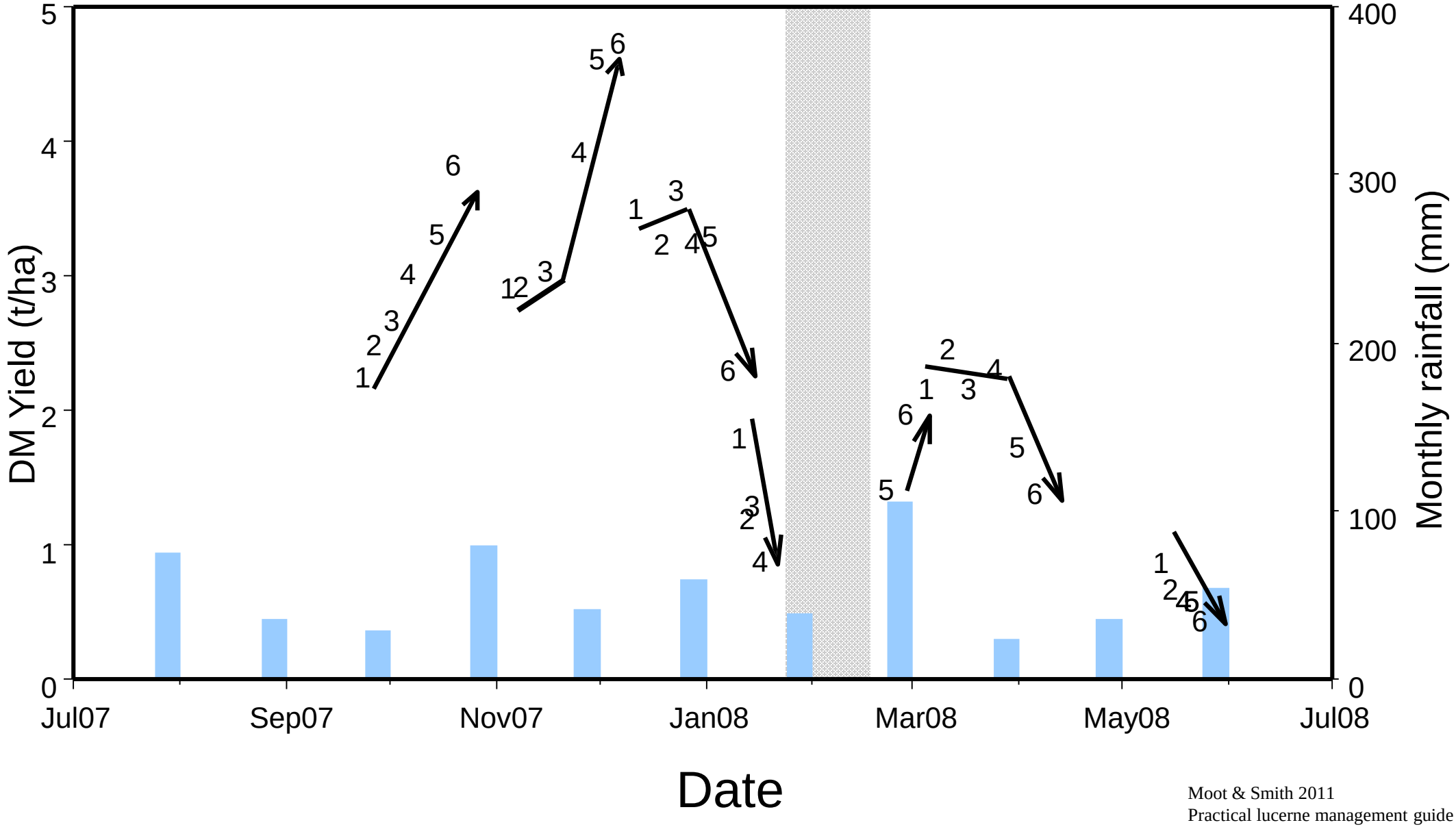


Rotation 4 Pre-graze
Plot 6 (28/2/08) **2.0 t DM/ha produced in 51 d**

Post-graze (4/3/08) **0.6 t DM/ha**
UTILISATION = **70%**

Grazing Rotations at Lincoln University



Moot & Smith 2011
Practical lucerne management guide

Seasonal grazing management

Late autumn/winter (*May-July*)

- hard grazing once growth stops (frost)
  $\Rightarrow$ decrease aphid population

- spray for weeds 10-14 days after winter graze

  - grazing/spraying early July
  - nodes developing at low temperatures

3. Animal health

- **Redgut:** problem on high quality feeds – fibre
- **Bloat:** cattle more than sheep – capsules
- **Na def.** (0.03%): salt licks/fence-line weeds/pasture
- Require 0.11% Na - sheep/beef/dairy (13%)
- **Leaf spot in autumn:** avoid flushing on older lucerne
  - new regrowth or tops only are O.K.

Ewe hoggets grown on lucerne 54 kg ave

Photo: 'Bonavaree'

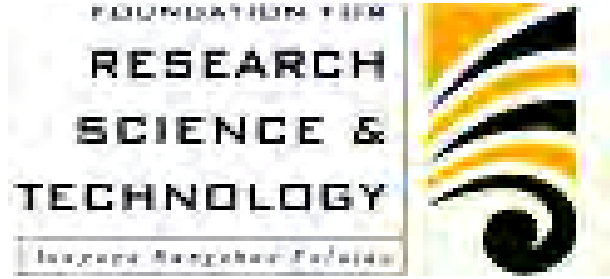
Corriedale 2th flushed on wilting lucerne

Lucerne (is not grass!!!)

- flushing at Bonavaree

Acknowledgements

- Beef & Lamb NZ Ltd/ Pastoral21
- Lincoln University
- MAF Sustainable Farming Fund



References

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- Lincoln University
- MAF Sustainable Farming Fund

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Moot, D.J. and Smith, M.C. Practical Lucerne Management Guide. 9 pp. Online: www.lincoln.ac.nz/dryland

Lucerne: agronomy and grazing management

Professor Moot gave this presentation at:

The Beef+Lamb NZ Science Day at Massey University

On:

28 Mar 2011