



**Lincoln
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Te Whare Wānaka o Aoraki
AOTEAROA • NEW ZEALAND



Perennial lupin establishment and yield when sown at five different rates at Glenmore Station, Lake Tekapo.

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New Zealand's specialist land-based university

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Note:

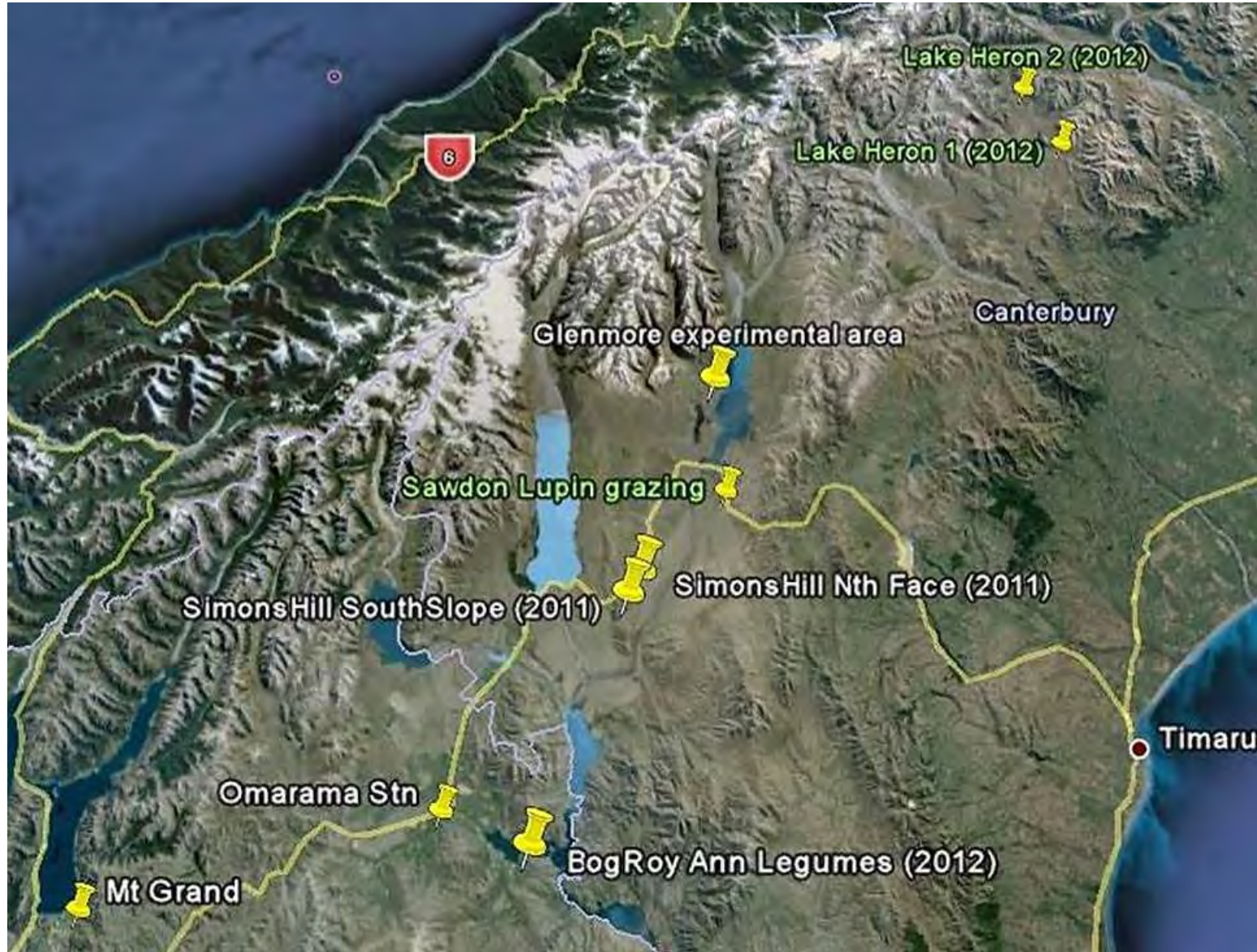
This presentation was made on 6 Nov 2014 in Alexandra at the New Zealand Grassland Association Annual Conference.

It is associated with the following scientific publication:

Moot, D. J. and Pollock, K. M. 2014. [Perennial lupin establishment and yield when sown at five different rates at Glenmore Station, Lake Tekapo](#). *Proceedings of the New Zealand Grassland Association*, **76**, 53-59.

NZ Merino forage projects

Lake Heron
Sawdon
Glenmore
Simon's Hill
Bog Roy
Omarama
Mt Grand



Timaru

Glenmore Station

- Glacial moraine
- Low pH, high soluble aluminium
- Rainfall: 630 mm (estimated from NIWA, Tekapo)
- Resident vegetation:
 - mostly browntop, sweet vernal, Kentucky bluegrass, some fescue tussock and hieracium
 - some white clover, annual striated and suckling clover, annual haresfoot trefoil, sorrel

Glenmore



- Browntop
- dominated pasture

Also:

Poa pratensis

Haresfoot trefoil

Sweet vernal

Suckling clover

White clover

Hawkweed









Preparation for sowing – spring 2012



10 Dec 2012

Lupin 0 t lime/ha



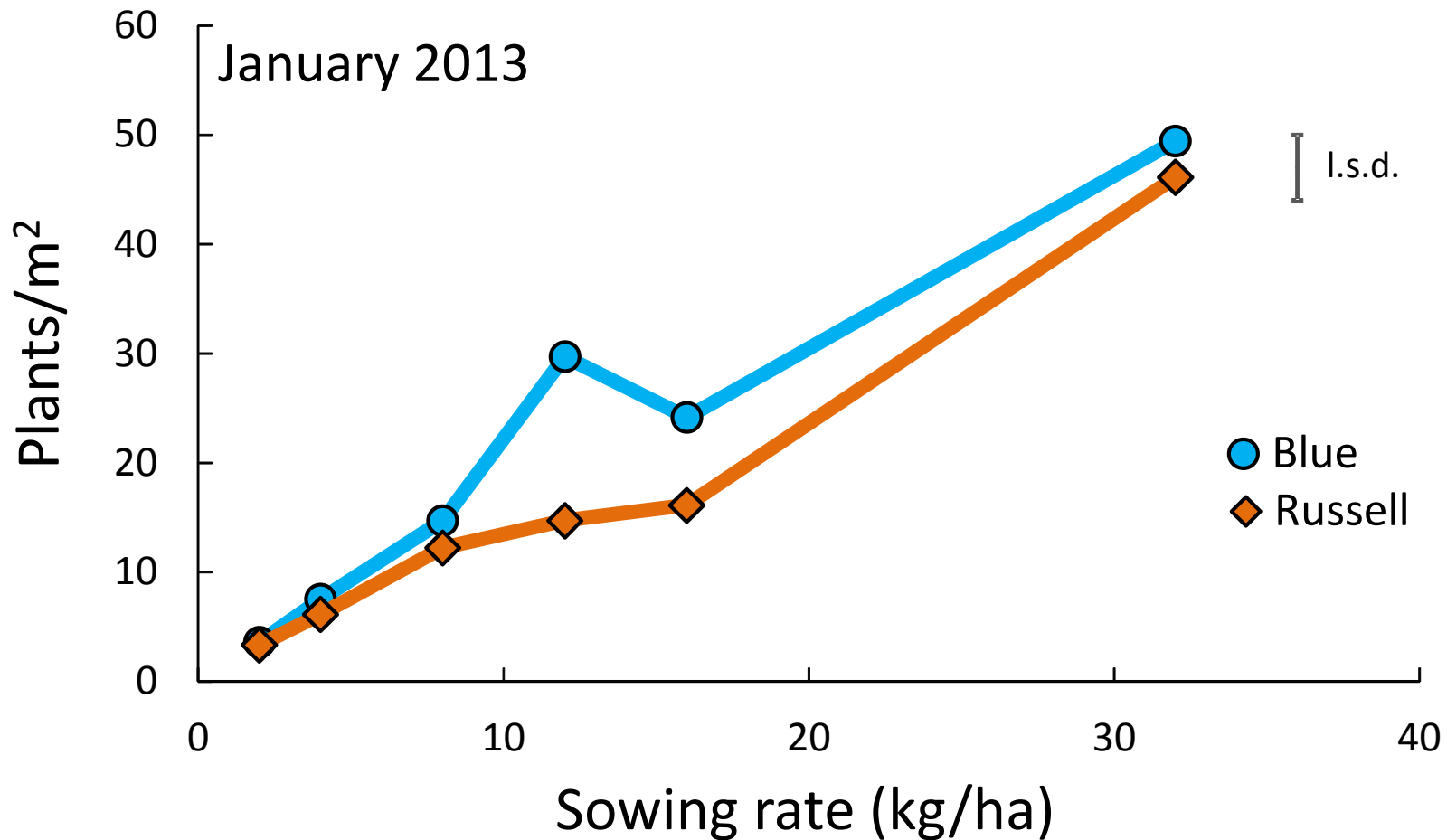
Experimental

- Two lime rates (0 or 3t lime/ha)
- Two perennial lupins (Russell and blue)
- 5 sowing rates (2, 4, 8, 12, 16 and 30 kg/ha)

10 Dec 2012 - Flexiseeder

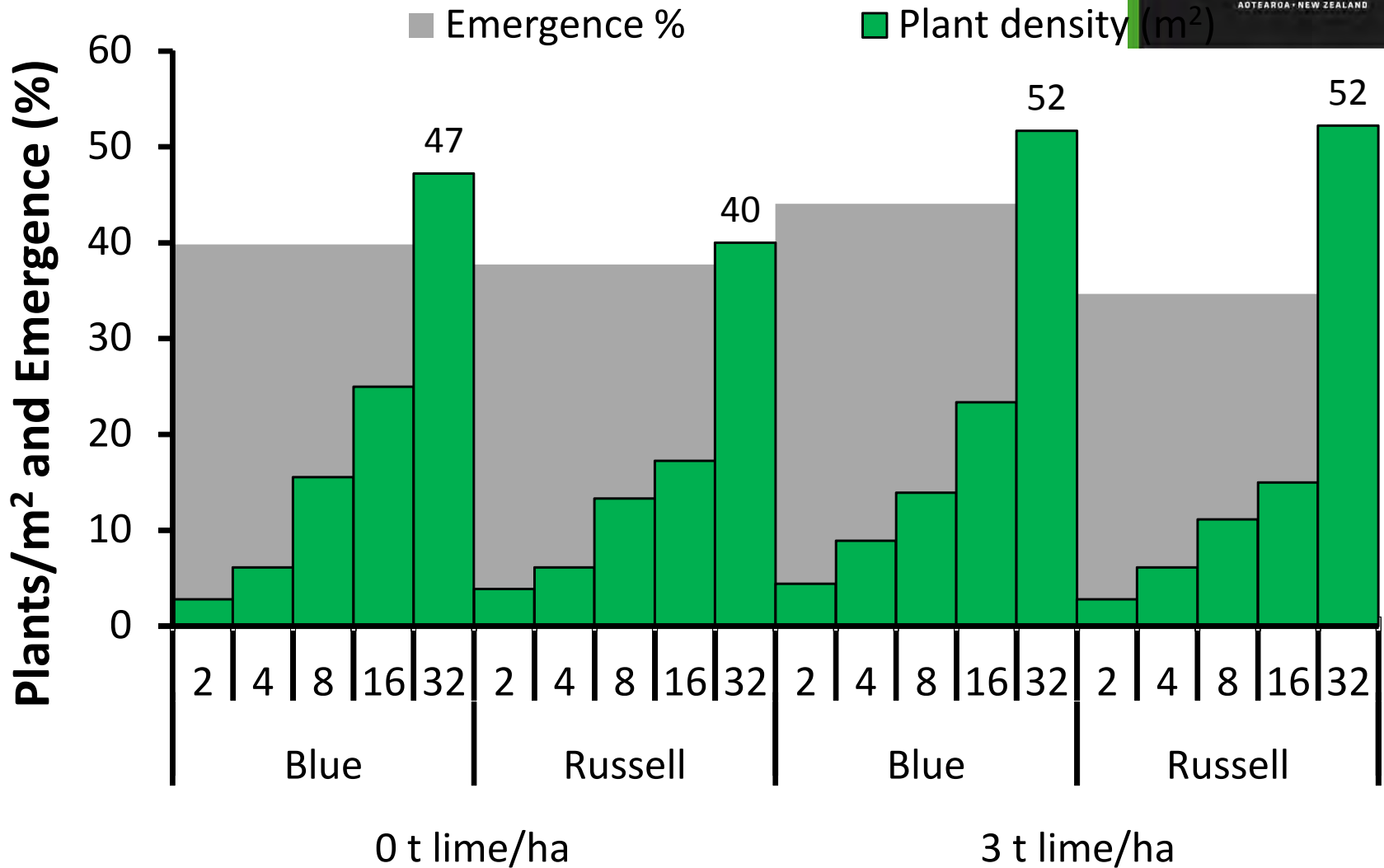


Lupin population@ 6 weeks



Year 1: Lupin seedlings @ 6 weeks







32 kg seed/ha

12 kg seed/ha



Year 1: Lupin seedlings @ 6 weeks

Year 1: Lupin seedlings @ 7 weeks



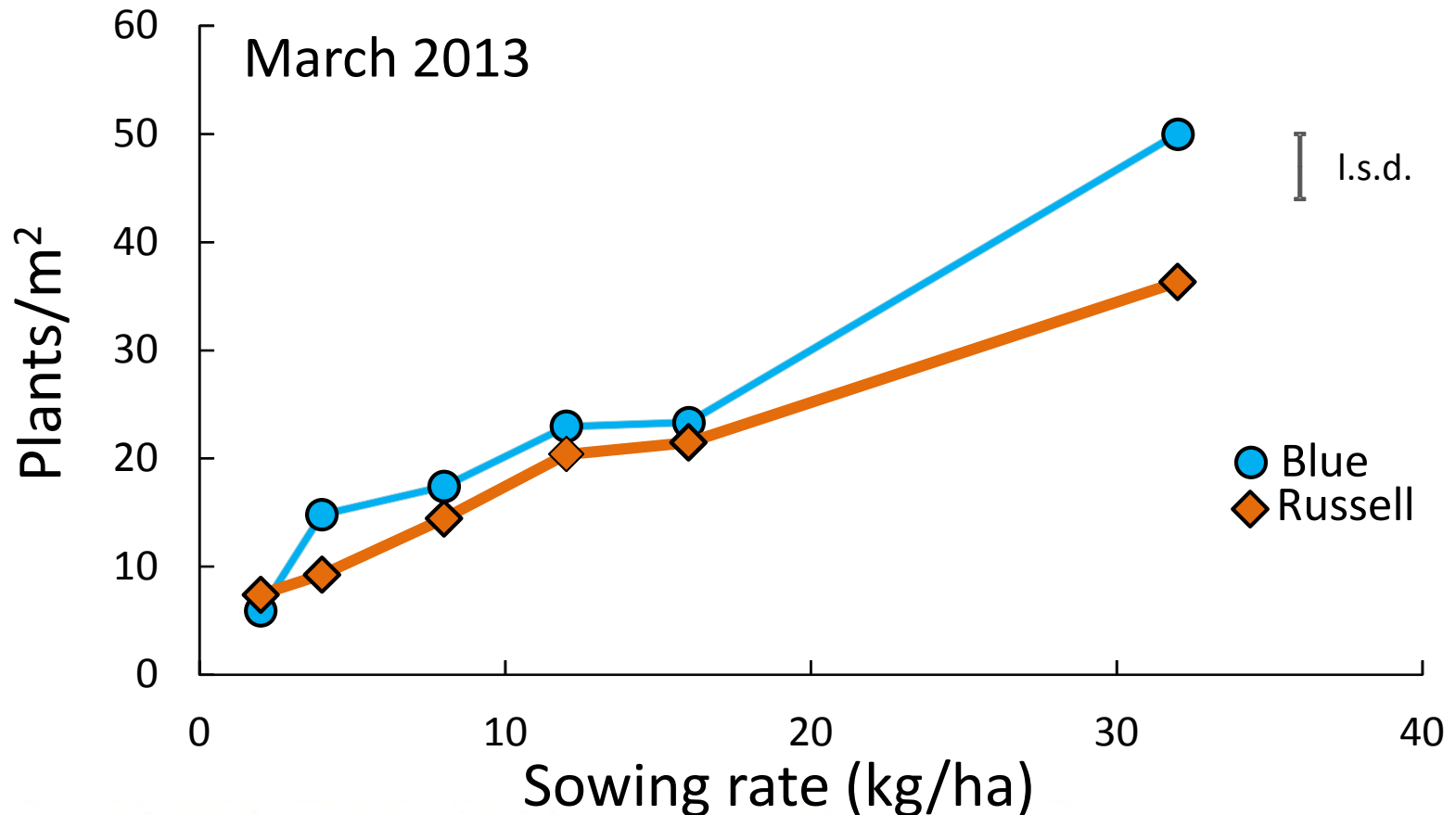
32 kg seed/ha

12 kg seed/ha

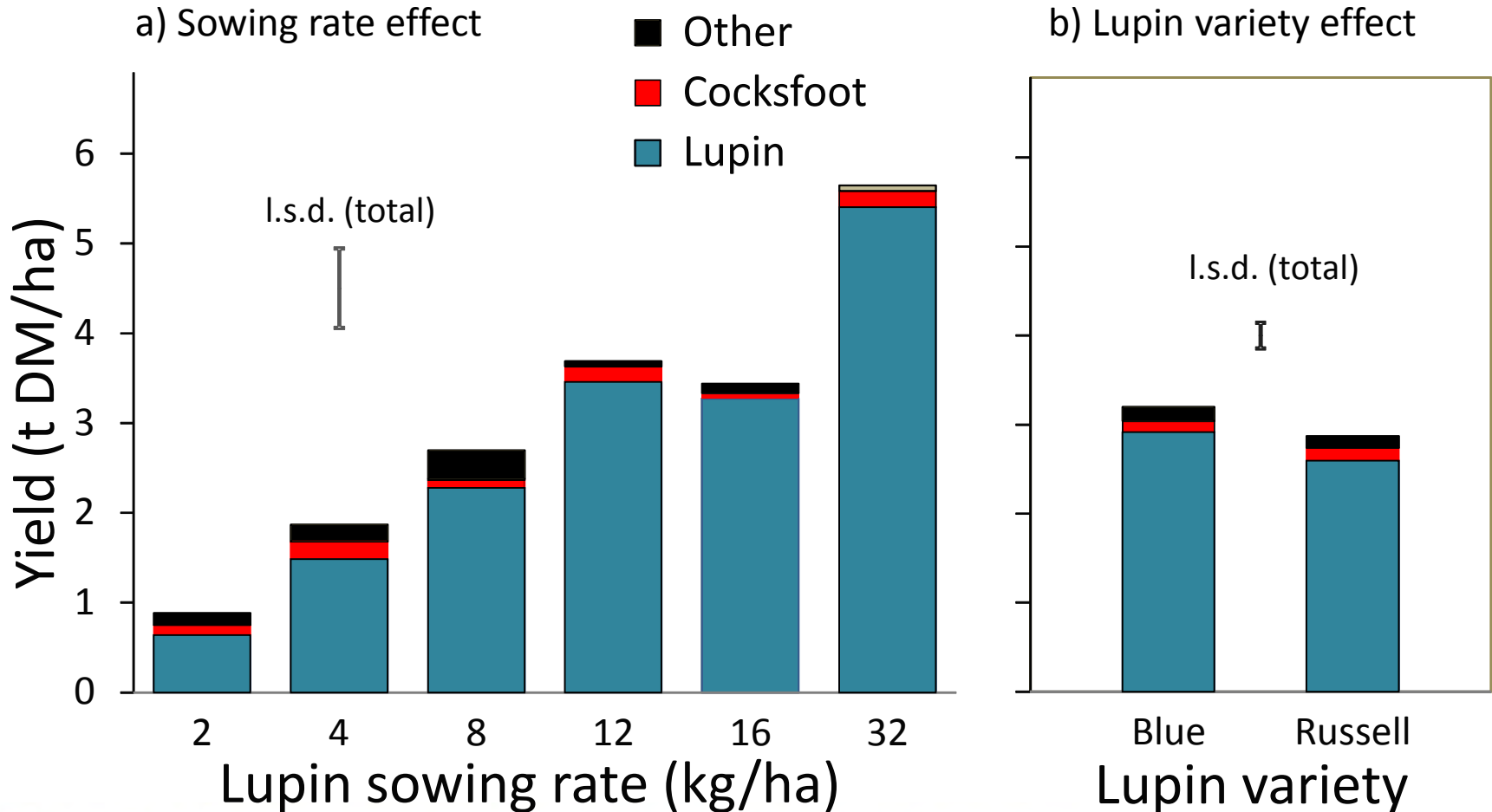
Year 1: Lupin seedlings @ 8 weeks



Lupin population@ 3 months



DM Yield: @ 4 months





Blue

Russell

Year 1 April: 2 kg seed/ha



Russell

Blue

Year 1, April: 8 kg seed /ha

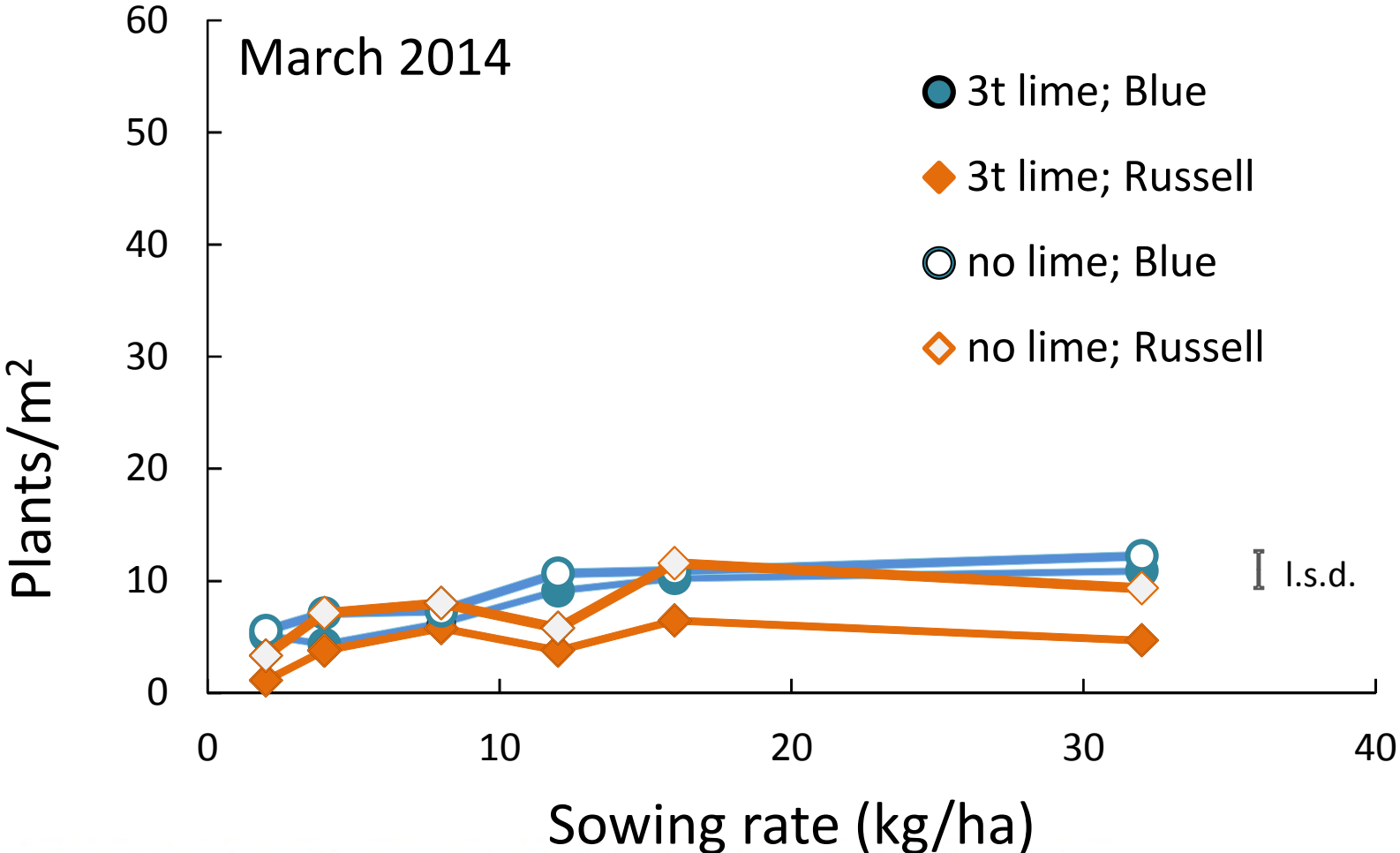


Russell

Blue

Year 1 April: 32 kg seed /ha

Lupin population@ 15 months





2 kg seed/ha

Year 2: 17 September 2013



8 kg seed/ha

Year 2: 17 September 2013



32 kg seed/ha

Year 2: 17 September 2013



2 kg seed/ha

Year 2: 1 October 2013



8 kg seed/ha

Year 2: 1 October 2013



32 kg seed/ha

Year 2: 1 October 2013



2 kg seed/ha

Year 2: 3 December 2013



8 kg seed/ha

Year 2: 3 December 2013



32 kg seed/ha

Year 2: 3 December 2013



9 December 2013 - 1200 Merino 2-tooths.

Residual lupin and cocksfoot





2 kg seed/ha

Year 2: regrowth to end of March 2014



8 kg seed/ha

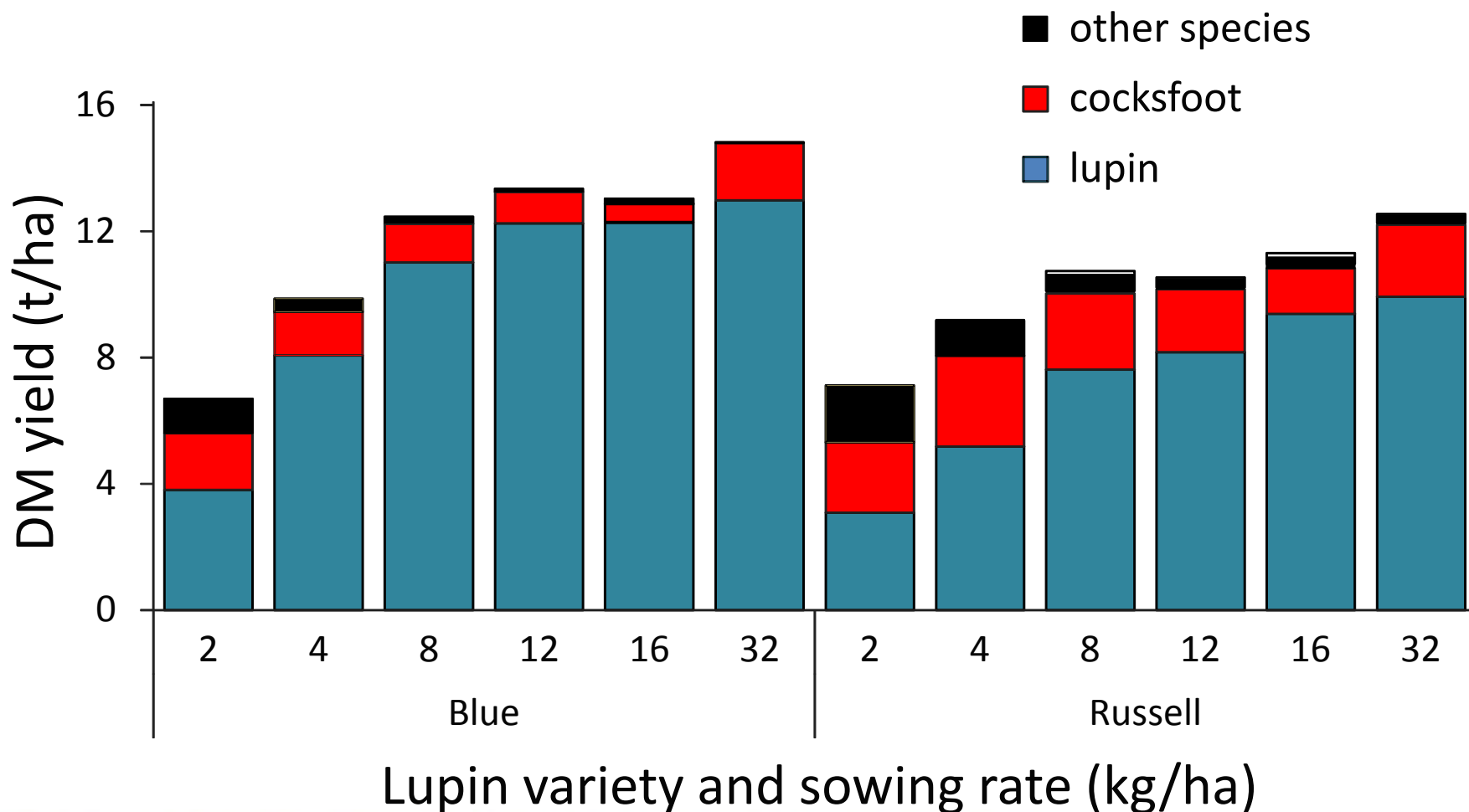
Year 2: regrowth to end of March 2014



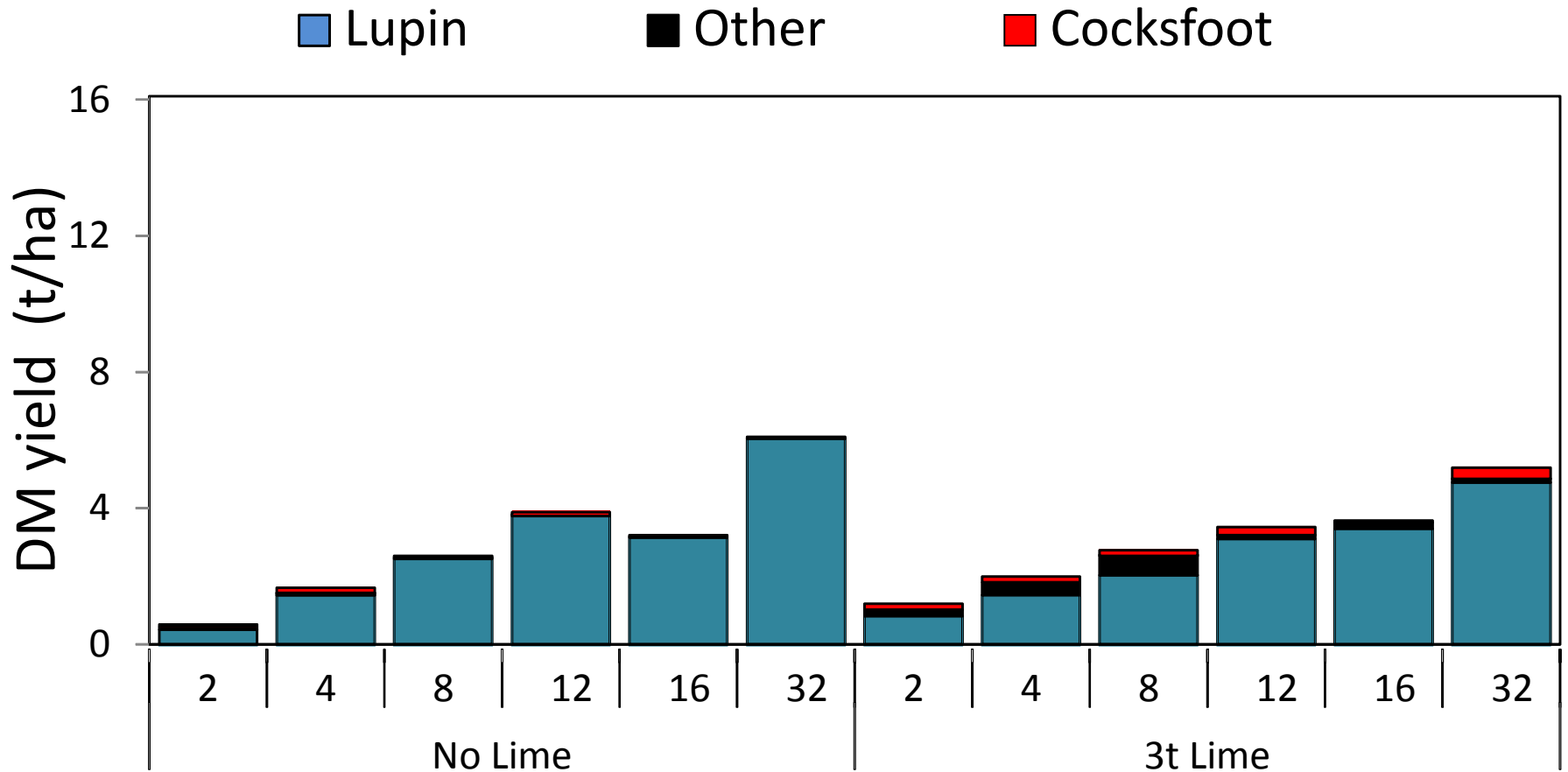
32 kg seed/ha

Year 2: regrowth to end of March 2014

DM Yield: Year 2 (Sept-April)



DM Yield: Year 2 (Jan-Apr)



Lime (t/ha) and lupin sowing rates (kg/ha)



2 kg seed/ha

Year 3: 4 October 2014



8 kg seed/ha

Year 3: 4 October 2014



32 kg seed/ha

Year 3: 4 October 2014

Paddocks of lupin

- Sown December 2013
- After 1 year of ryecorn





Ryecorn paddock to be sown to lupin



Six weeks after sowing



Seedlings @ 6 weeks after sowing



Caucasian clover and cocksfoot included in the seed mix



4 months after sowing



4 October 2014 recovery after autumn graze

31 October 2014





Lambs to lupins: 31 Oct 2014

Lupins - to date

- Autumn + spring herbicide (burn) ryecorn
- Sow in warm soil temperatures after fallow (December)
- Sow at 10 – 20 mm
- Sow at 8 kg/ha with cocksfoot + Cc
- Inoculate
- Fert 50 kg ha S Super/yr
- Graze in year 1 (post- flowering)

Acknowledgments

- Will and Em Murray – for daring to try
- Denis Fastier – keeping academics grounded
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