



On-farm comparison of pasture production in relation to rainfall in Central Otago

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Note:

This presentation was made by Julie Kearney on 15 Nov 2010 at Lincoln University at the New Zealand Grassland Association Annual Conference (held in association with the Australian Agronomy Society Annual Conference).

It is associated with the following scientific publication:

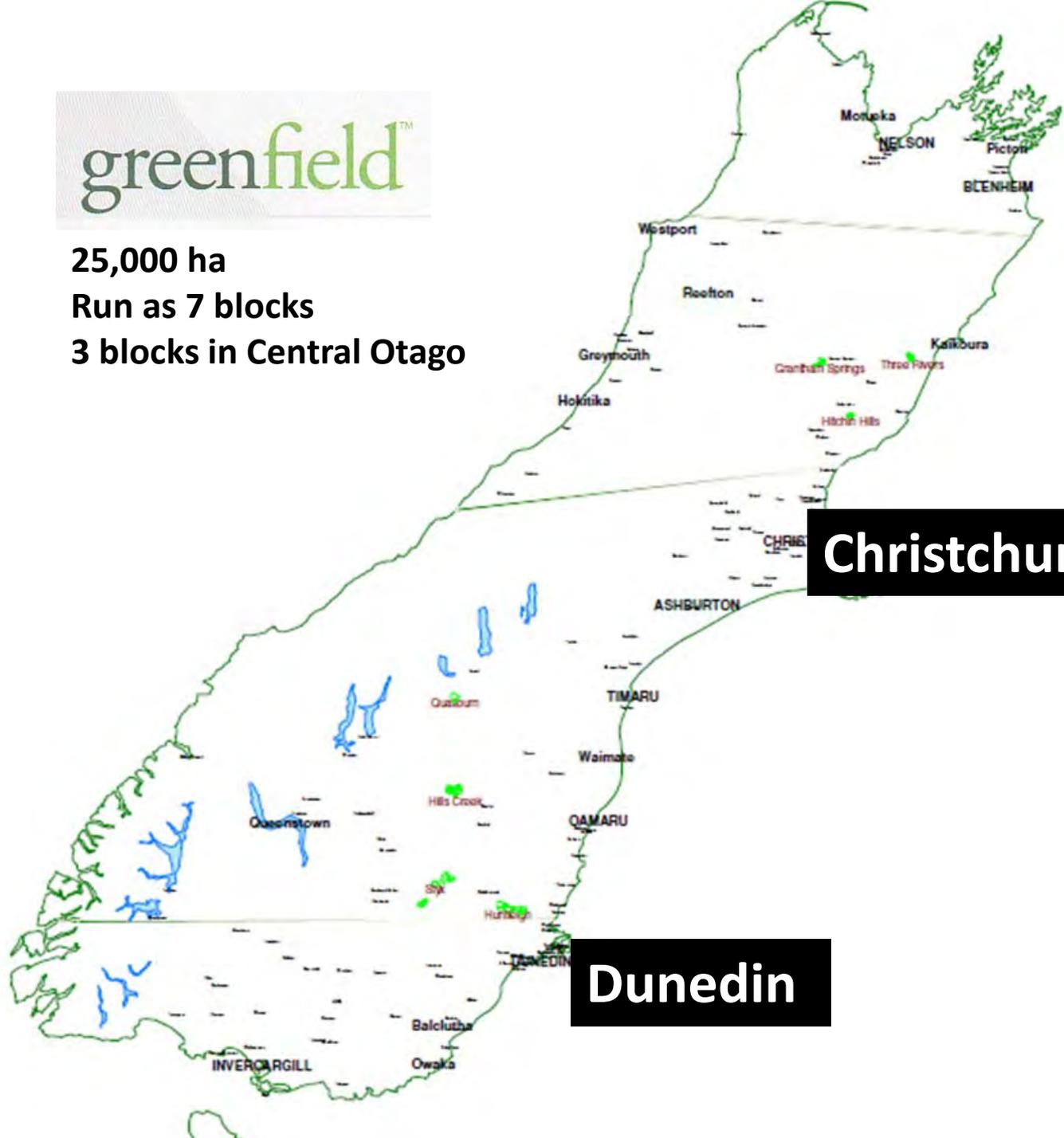
Kearney, J.K., Moot, D.J. and Pollock, K.M. 2010. [On-farm comparison of pasture production in relation to rainfall in Central Otago](#). *Proceedings of the New Zealand Grassland Association*, **72**, 121-126.

greenfield™

25,000 ha

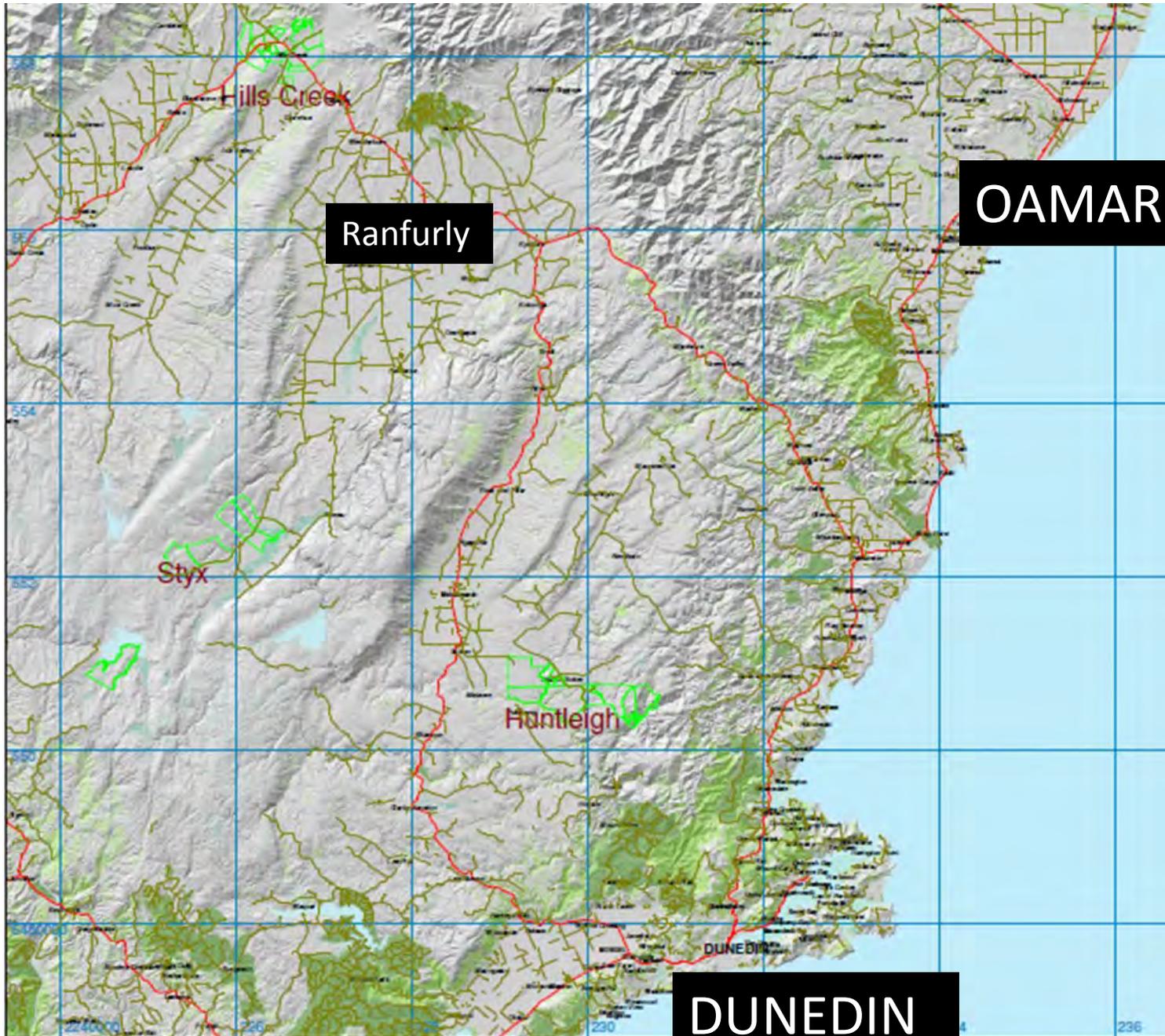
Run as 7 blocks

3 blocks in Central Otago



Christchurch

Dunedin



Ranfurly

OAMARU

DUNEDIN

120 – 150 day winters

Rainfall: 400 – 600 mm/year

Altitude: 200 – 800m





- Traditionally used for fine wool and store lamb production
- Extensive farming



- **Low palatability**
- **Low production**
- **Low legume**



Lime and Fertiliser Application

Lime 3-5 ton/ha

Fertiliser 250-500kg/ha



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

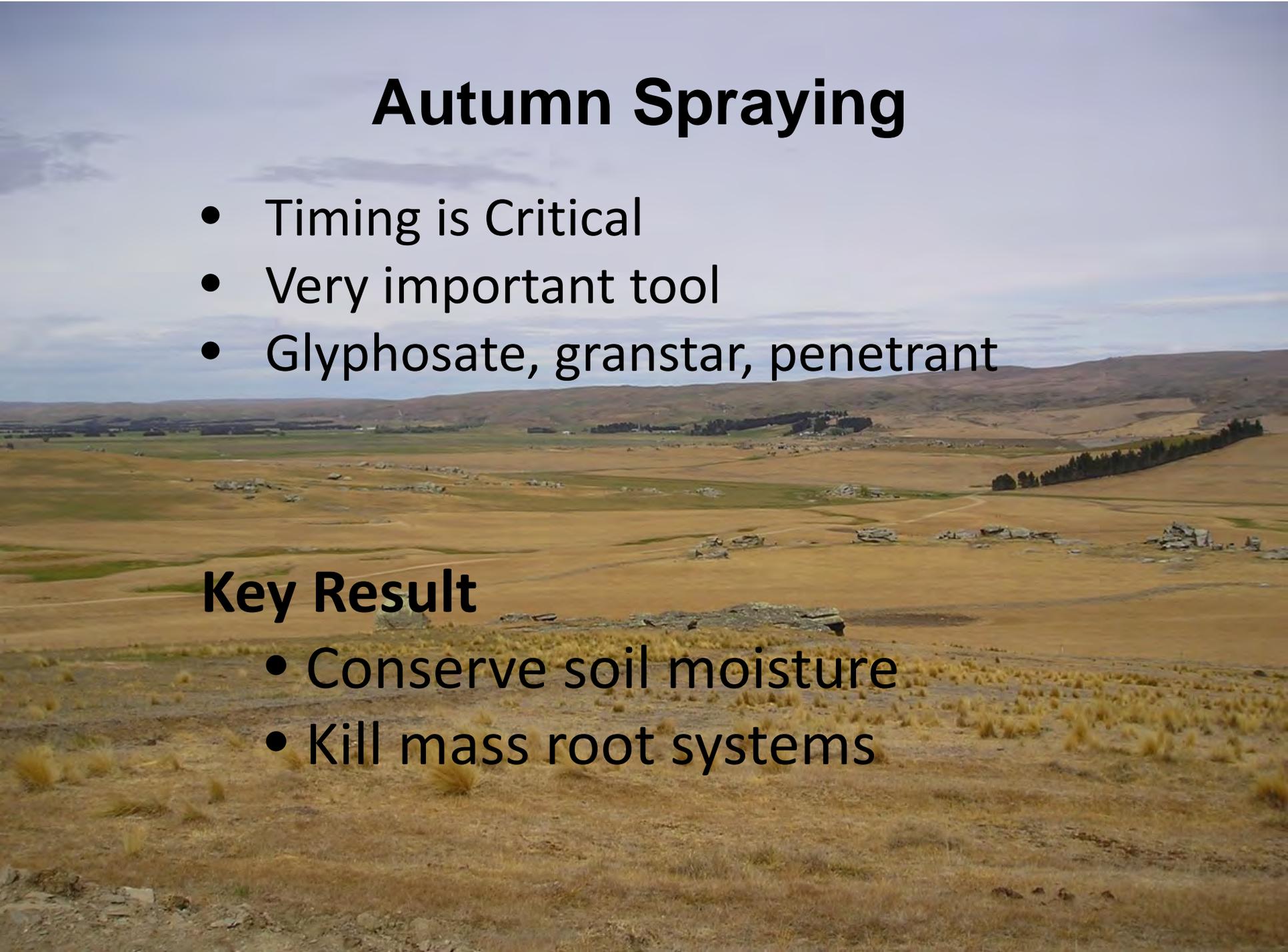
	pH	Olsen P (ug/ml)	Potassium (QTU)	Sulphur (ug/g)	Aluminium (mg/kg)
Pre-Development (2008)					
Hills Creek	5.2	10	5	14	2.6
Huntleigh	5.2	10	5	1	6.3
Styx	5.2	13	13	3	5.7
Post-Development (2010)					
Hills Creek	5.8	19	9	31	0.9
Huntleigh	6.0	18	4	25	1.5
Styx	6.1	29	13	23	1.1

Autumn Spraying

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

Key Result

- Conserve soil moisture
- Kill mass root systems





2nd Spray – Spring

Glyphosate, insecticide, penetrant

Result from Autumn spray, photo taken 1 November 2010

Drilling seed with fertiliser
Direct drilling = seed + fertiliser



Sown

21/11/2007

Photo taken

1/11/2010

Styx Station



Sown

4/11/2008

Photo taken

5/11/2010

Hills Creek Station



Hills Creek Station – Boundary view



Sown 16/10/2009

Photo taken 19/10/2010

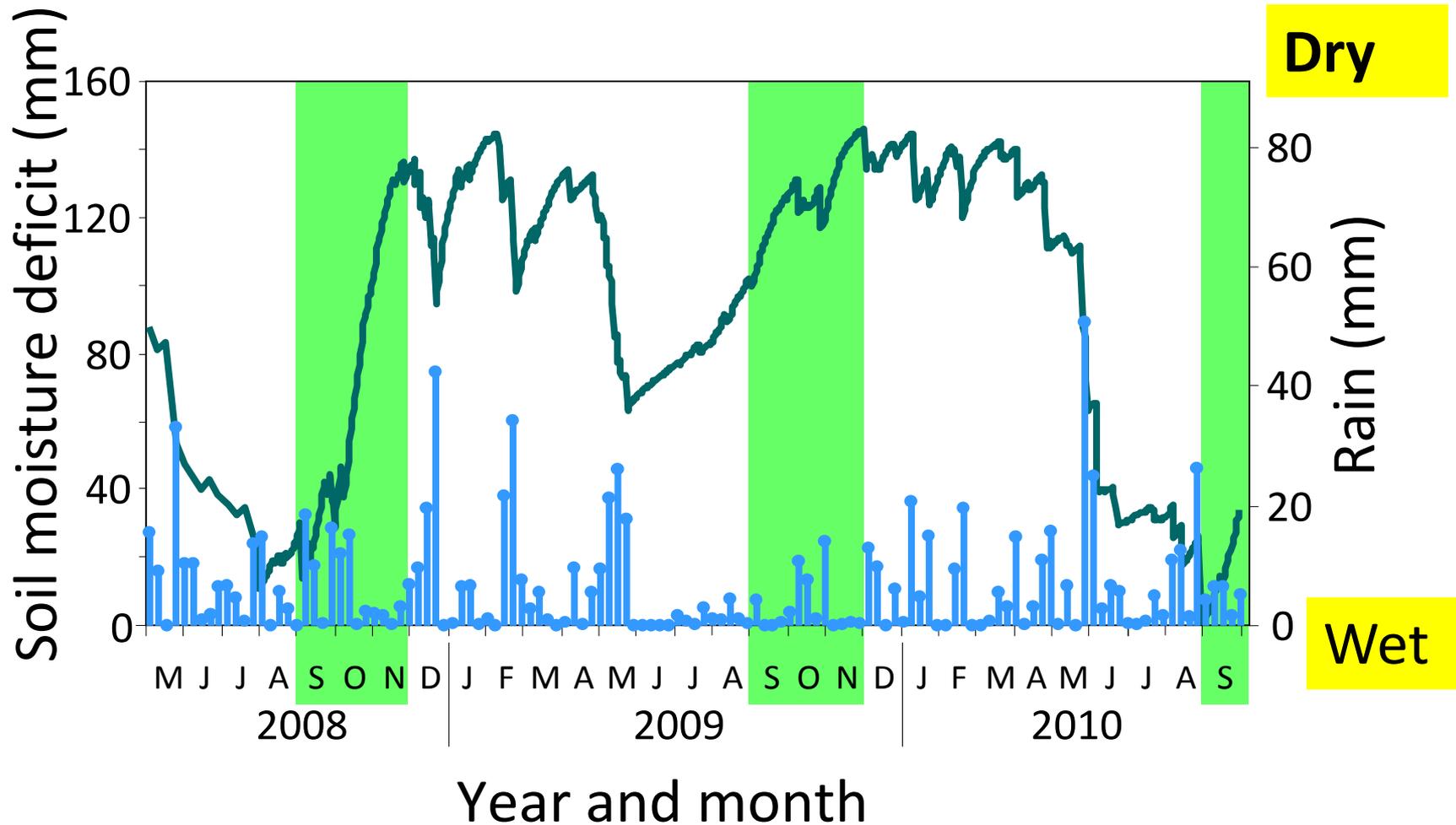
Huntleigh Station



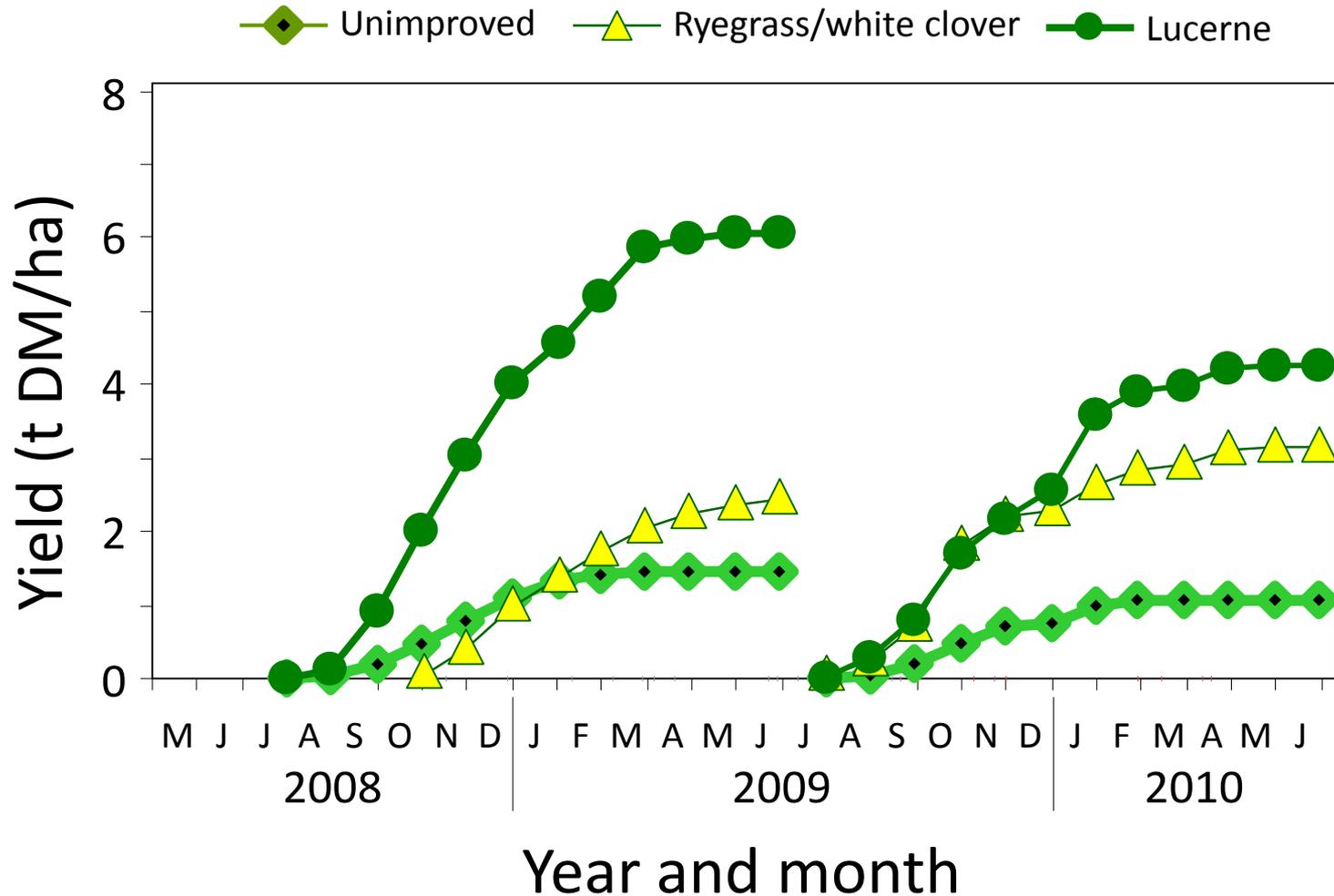


Composition of ryegrass/white clover

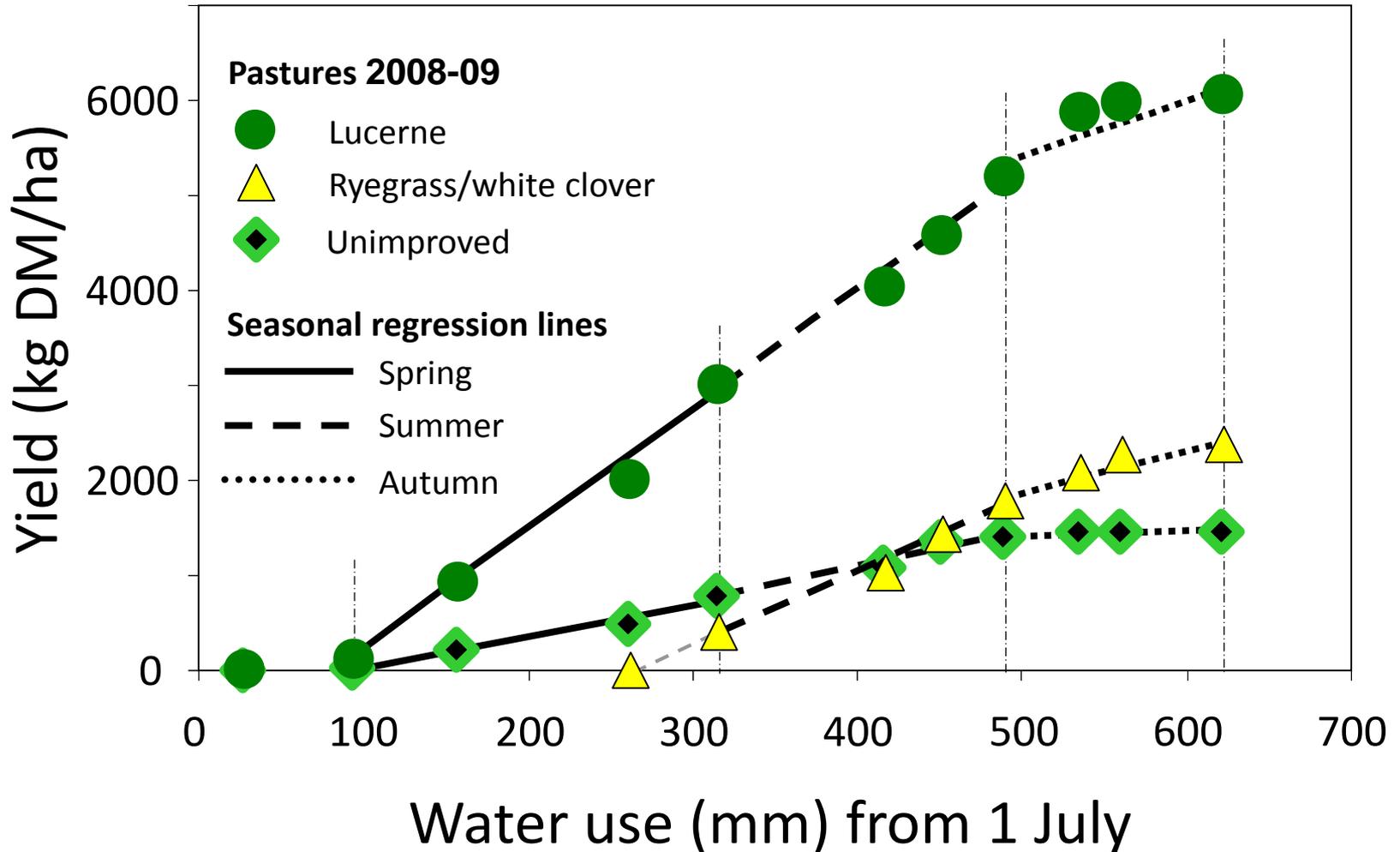
Potential soil moisture deficit - Ranfurly



Pasture growth



Yield and water use



Flexible system – Multiple uses

- Stock grazing
- All stock classes



Supplement Production

- Balage/Hay/Silage/Chaff.....



Conclusion

- Lucerne more than tripled DM prouduction
- **Development techniques**
 - Lime and fertiliser
 - Autumn spraying
 - Direct Drill with fertiliser

Huge Potential in dryland NZ