RED MEAT UPDATES

TASMANIA

22 July 2016

Development and management of new phalaris cultivars

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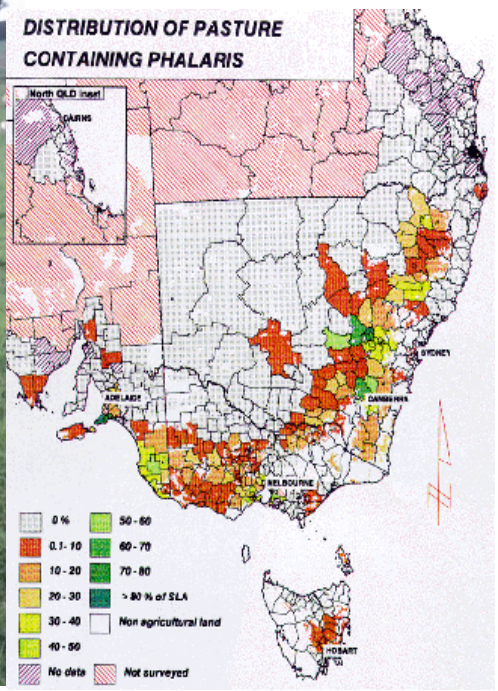
Phalaris aquatica in Australia

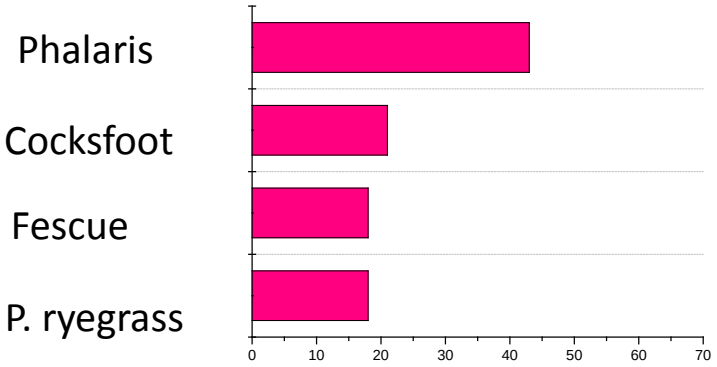


- Proven perennial grass for south-eastern Australia
- In use for more than a century
- Most widely sown perennial grass in southern Australia (2011 MLA Feedbase survey)
  - Phalaris 1.97 M ha
  - Perennial ryegrass 1.59 M ha
  - Cocksfoot 0.87 M ha
  - Tall fescue 0.45 M ha

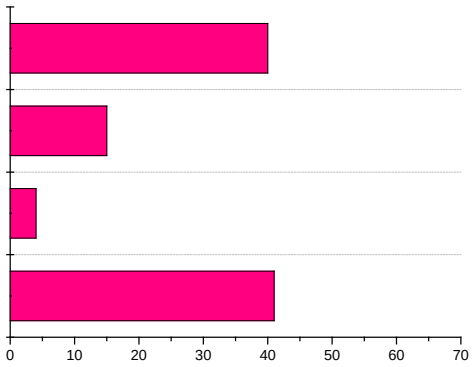
MLA Feedbase survey (Donald 2012)

Main temperate sown grasses (% by area basis)

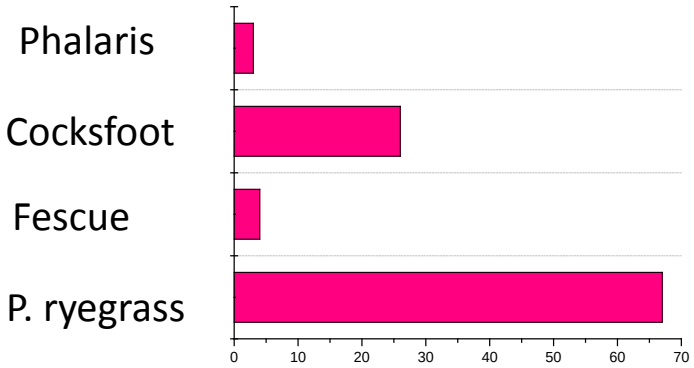
NSW

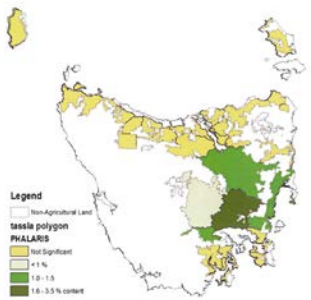


Victoria

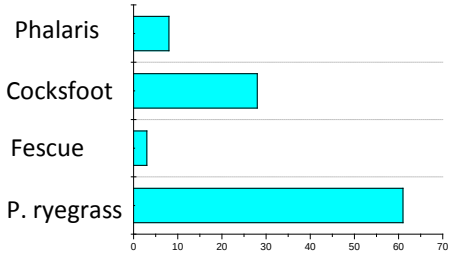


Tasmania





North & South Midlands Tas.



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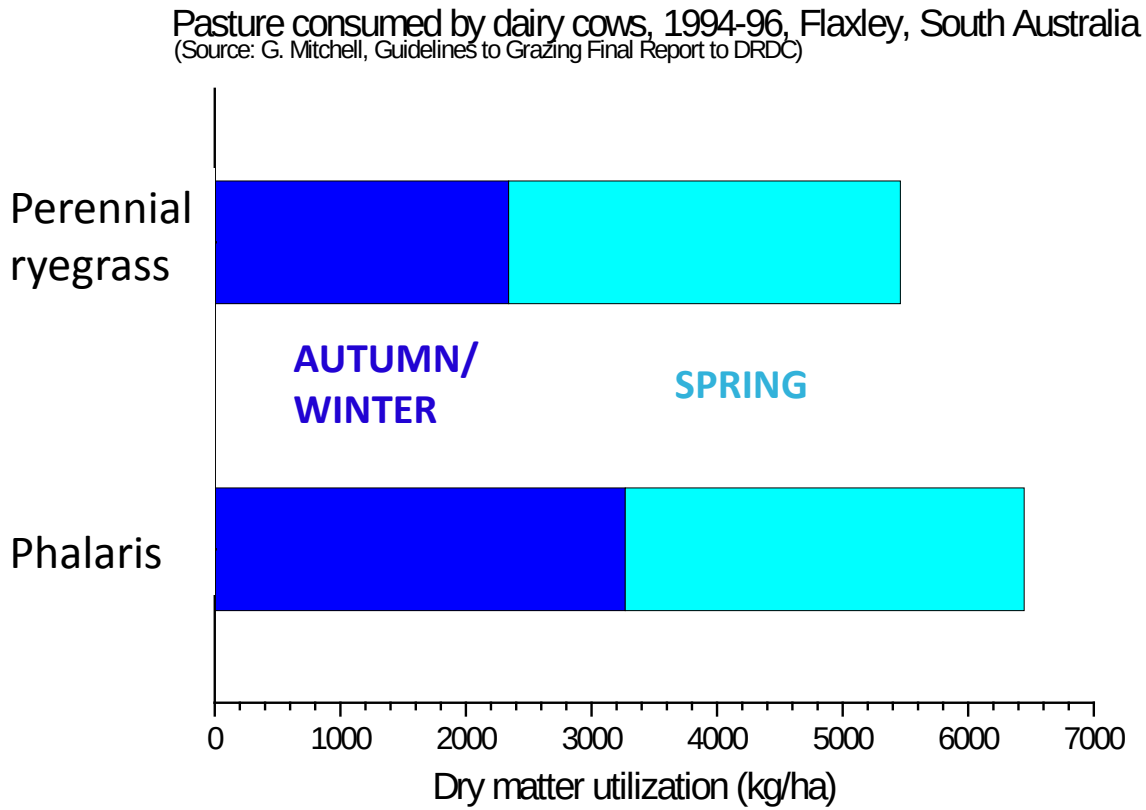
Drought survival

High autumn/winter productivity



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Other features of phalaris

- Deep root system
- Partially dormant during summer
- Tolerates waterlogging and mild salinity
- Very resistant to pasture grubs
- High nutritive quality when vegetative
- Slower to establish than ryegrass
- Tolerates heavy grazing when established
- Occasionally toxic to livestock

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Where phalaris fits

- Where drought limits use of perennial ryegrass
- Long-term pasture (20^{+} years)
- Best suited to heavier soils, but wide range tolerated
- Lower-mid slopes (soil depth)
- All livestock enterprises
- Where pasture grubs a problem

Companion legumes

- Good compatibility with clovers
- Subterranean clover the most common companion legume
- Wide range of legumes are suitable (annual/perennial)

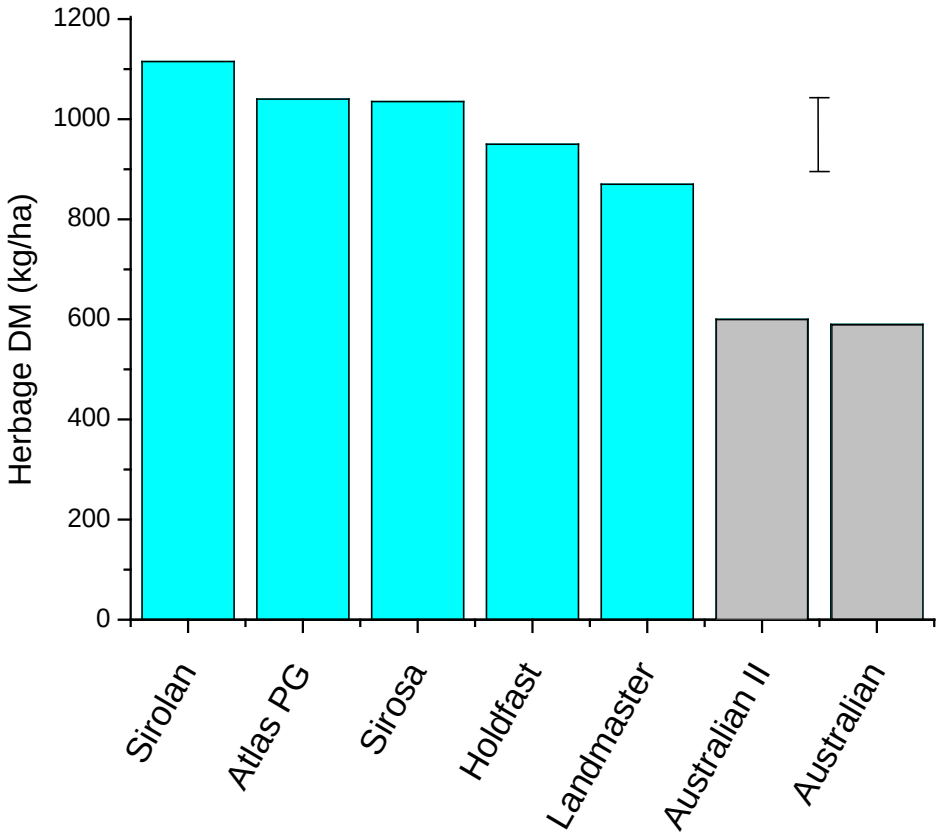
Phalaris cultivars in Australia

	Semi-winter dormant	Winter-active type		
	Australian type	General purpose	Marginal soils (acid, shallow, low fertility)	Drier margins of cropping zone (Higher dormancy)
Older cultivars	Australian Uneta* Australian II* Grazier*, etc Maru	Sirosa Holdfast*	Landmaster *	Sirocco Sirolan Atlas PG*
More recent	Fosterville	Holdfast GT* Lawson* Stockman	Advanced AT*	

* Seed-retaining cultivar

Winter yield comparison

Mean Year 2 sward winter yield at Tamworth, Yass, Hamilton



Advanced AT

Improved acid soil tolerance

- Soil acidity is widespread and increasing under agriculture
- Soil acidity thought to be probable cause of poor establishment and persistence

Improved aluminium (Al) tolerance

Aluminium tolerance improves

- Root growth in strongly acid soils
- Seedling drought survival

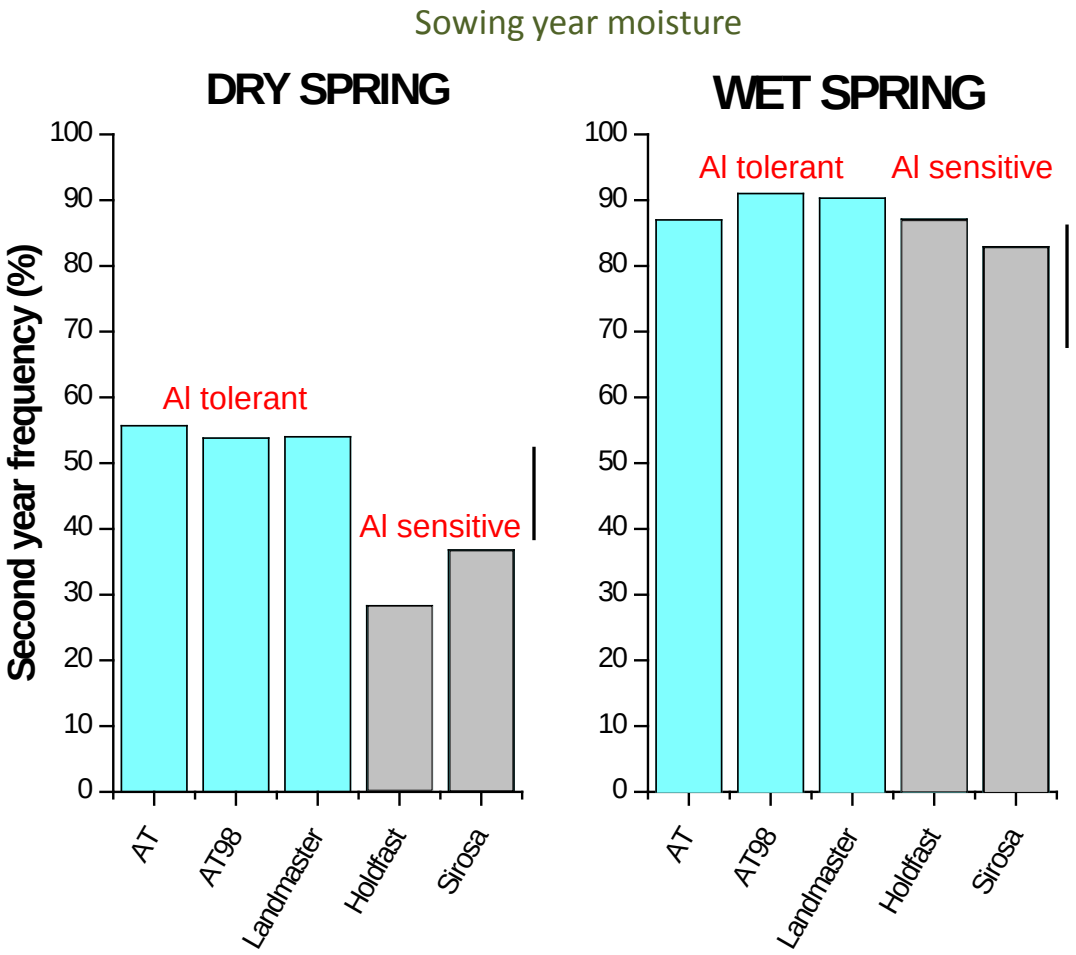
Sirosa **Advanced AT**

Root growth in 100 µM Al

Aluminium tolerance interacts with moisture at establishment

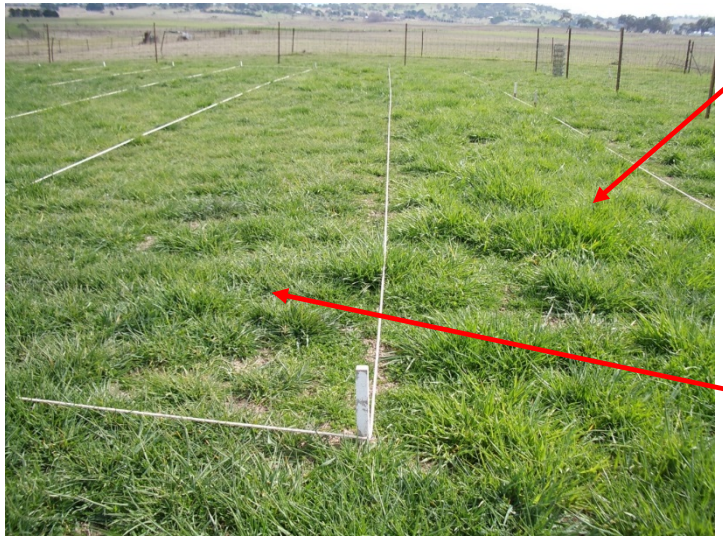
Dick's Ck site

Soil 0–40 cm: pH_{Ca} 4.1, Exch. Al 43%



Grazing tolerance

More erect winter-active cultivars are less tolerant of heavy grazing/continuous stocking than more prostrate semi-winter-dormant types

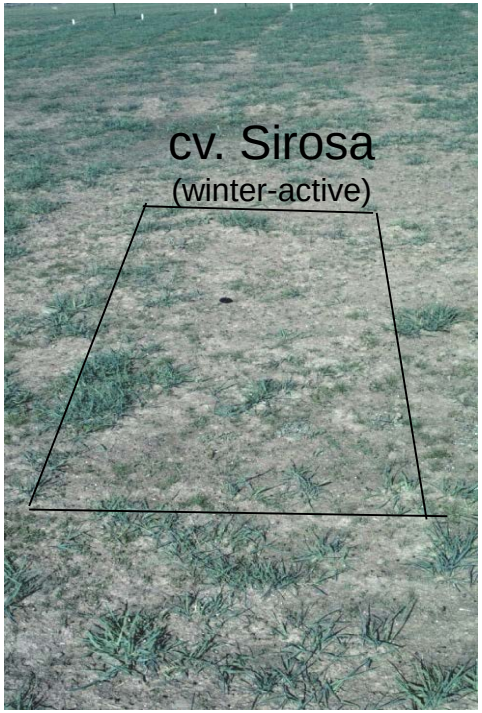


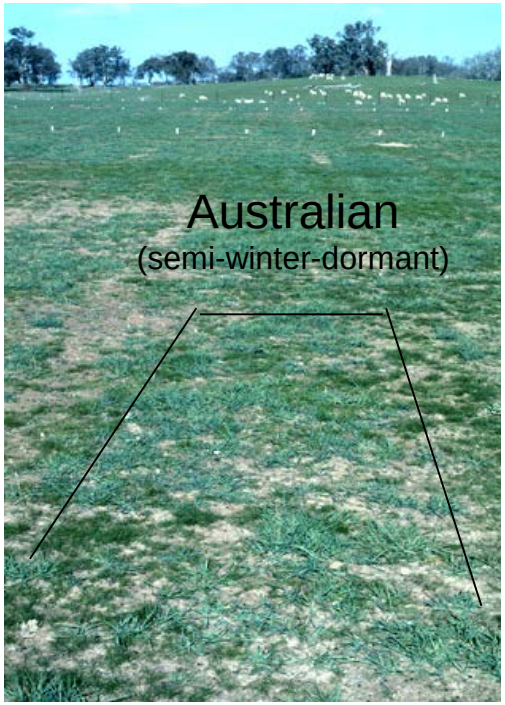
Winter-active type

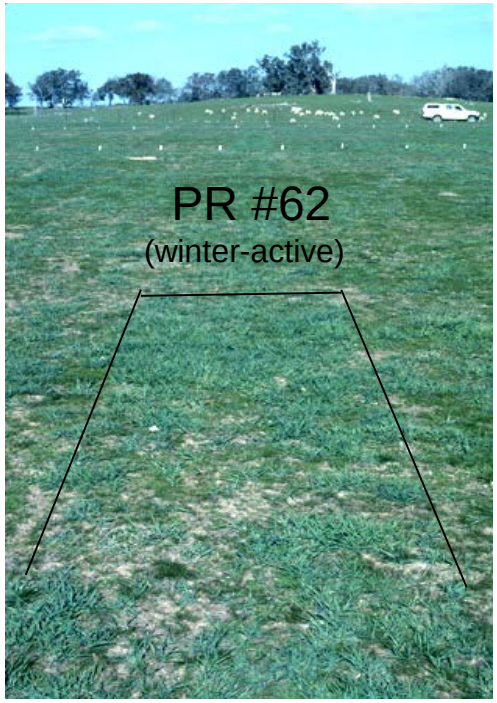
Semi-winter dormant type

Multiple stresses

Overgrazing through drought on acid soil







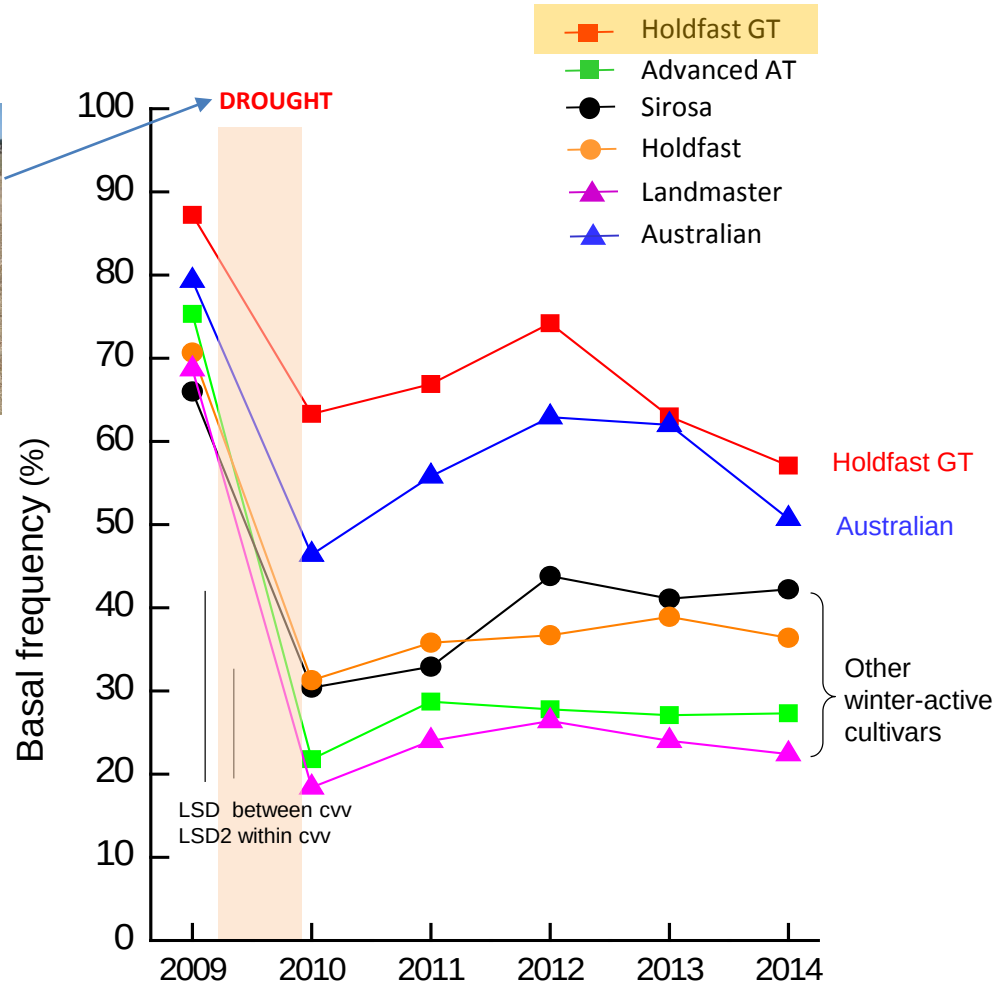
Holdfast GT

Winter-active cultivar with improved grazing tolerance

Genotype x soil fertility x management experiment

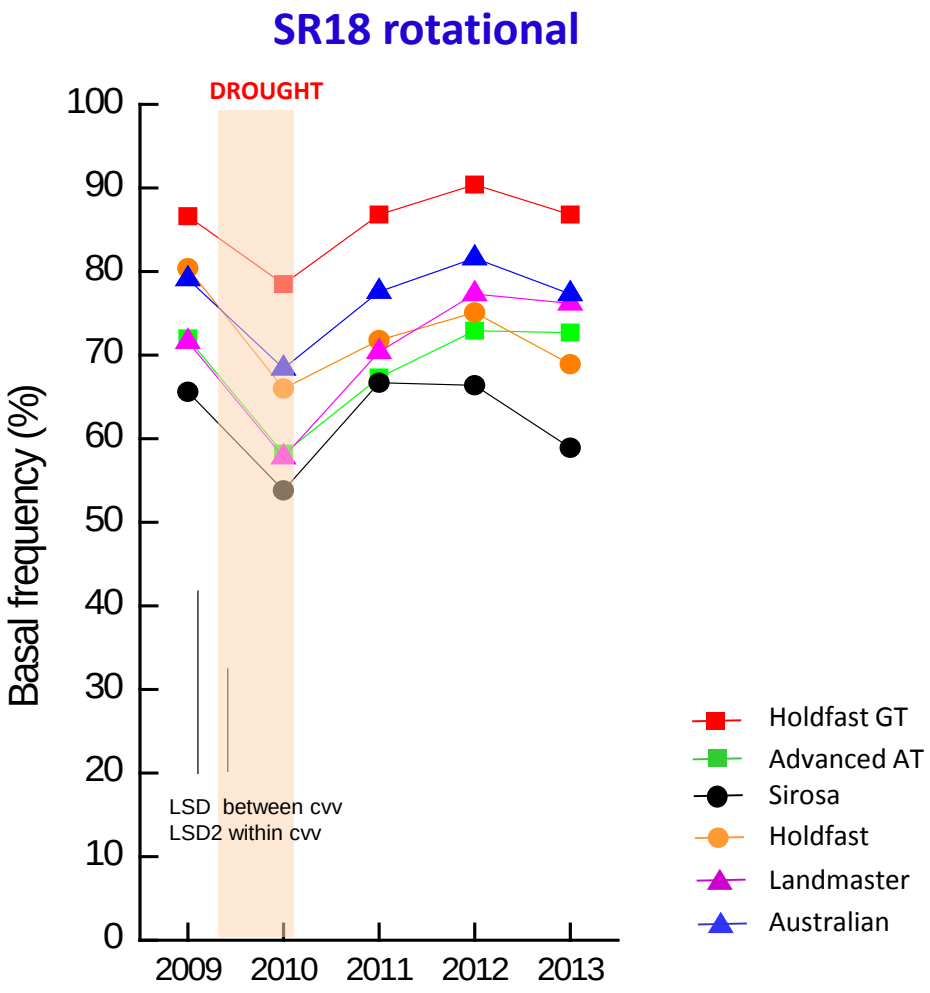
SR18 continuous stocking

Early December 2009

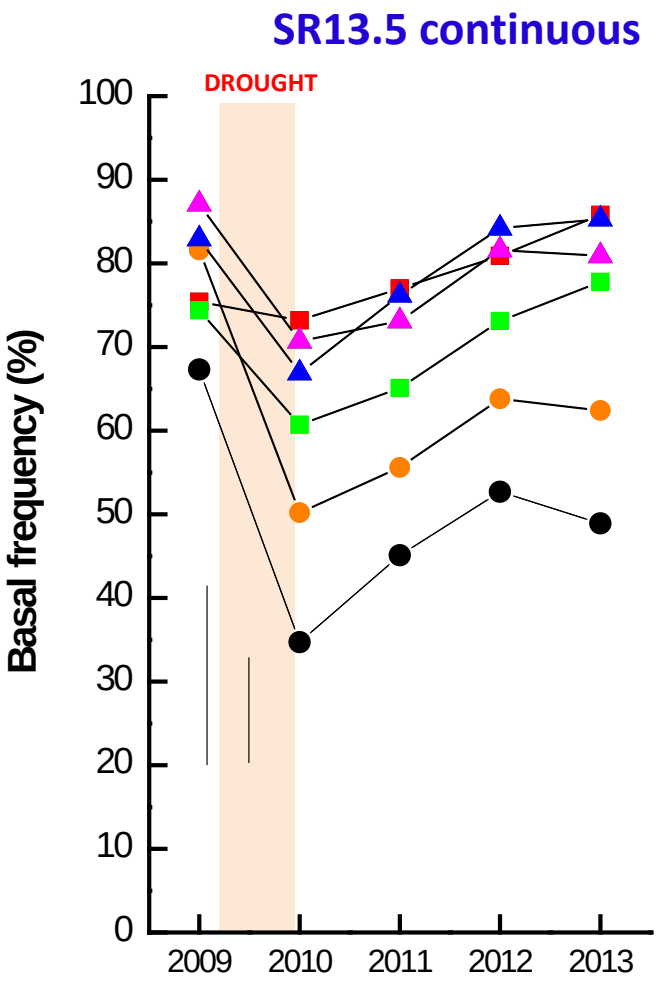


Persistence also improved by …

Rotational stocking



Reduced stocking rate



Grazing management guidelines

- Graze young stand carefully
  - Little if any in year of sowing, care in second year
- Winter-active types better suited to rotational stocking at high stocking rate
  - Holdfast GT much more tolerant of continuous grazing pressure
- Spring management
  - <3000kg/ha for quality but >1000kg/ha for persistence
- Reduce summer carryover to encourage clover
- Reduce risk of toxicity
  - Avoid turning hungry sheep onto pure phalaris soon after breakof season
  - Prevent staggers by dosing with cobalt

Top three take home messages

1. Phalaris is a productive, drought-tolerant grass for long-term pasture

2. New cultivars are available with improved grazing and acid soil tolerance

3. Winter-active cultivars are best managed rotationally at high stocking rate but Holdfast GT tolerates continuous stocking better

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TASMANIA

Tools, resources & training

- http://www.dpi.nsw.gov.au/__data/assets/pdf_file/0007/165049/p251.pdf
  - NSW Phalaris Agfact
- http://www.evergraze.com.au/demonstration-case-studie/regional-case-studies/
  - Regional case studies including Tasmania
- http://www.evergraze.com.au/wp-content/uploads/2013/06/Evergraze-Action-Phalaris-A4.pdf
  - Phalaris grazing management