AN INITIATIVE OF

Making More From Sheep

Turning pasture into product

Brad Nutt

EVENT PARTNERS:

EVENT SUPPORTERS:

Pasture products?

- Livestock products
- Grain products
  - Pasture is the predominant “break crop” in crop rotations
  - Legume N fix = 25 kg of N per T of legume DM
  - Integrated weed control
- Land protection
  - Perennial grasses
  - Fodder shrub windbreaks
- Tactical flexibility in response to season

Drivers of pasture productivity

- Pasture production
  - Rainfall and timing of rainfall
  - Conversion of rainfall to DM

  (ave. 12 kg/ha.mm but is >20 kg/ha.mm possible or wanted?)
- Pasture quality
  - Composition (legumes)
  - Seasonality
- Feed budgeting, supplemental feeding and pasture grazing management

Pasture quality in NAR

	CP (%)	DMD (%)	ME (MJ/kg)
Mixed volunteer	18.7	77.6	11.9
Grass dominant	13.3	78.5	11.9
Legume dominant	23.5	77.5	11.7

Data from Grain and Graze 2005 – 2008, G. Moore

GrazFeed Predicts

	Intake (kg)	LWG (g)	Wool (g)
Mixed volunteer	1.57	198	17.3
Grass dominant	1.39	165	12.3
Legume dominant	1.71	271	21.3

Merino wether weaners @ 10 months, 36kg

N fertiliser on grasses

	CP (%)	DMD (%)	ME (MJ/kg)
Ryegrass 50kg N	13.1	81.7	12.4
Ryegrass 100kg N	10.6	83.6	12.7
Oats 50 kg N	7.9	72.2	10.8
Oats 100 kg N	7.3	73.1	11

RIRDC – Development of sustainable fodder crop systems with new annual pasture legumes, Wickham et al, 2007

Choose the right species and cultivar

- www.pasturepicker.com.au

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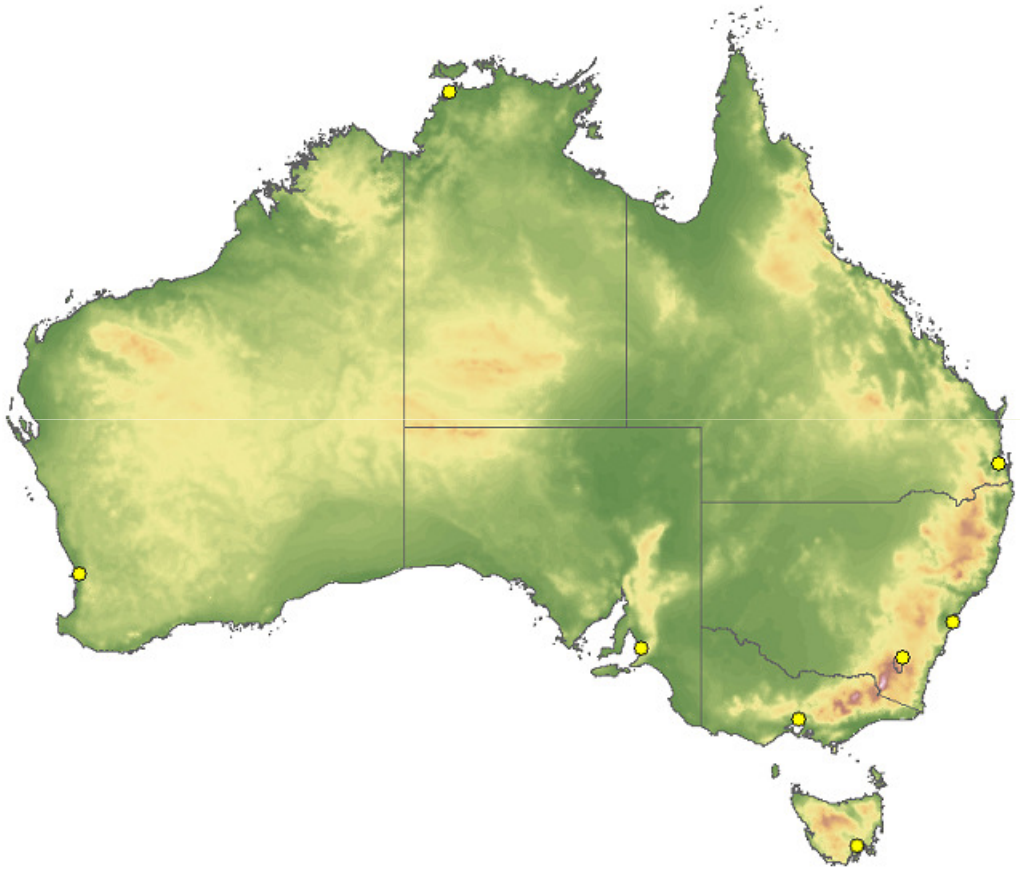

New South Wales / ACT • Northern Territory • Queensland • South Australia • Tasmania • Victoria • Western Australia

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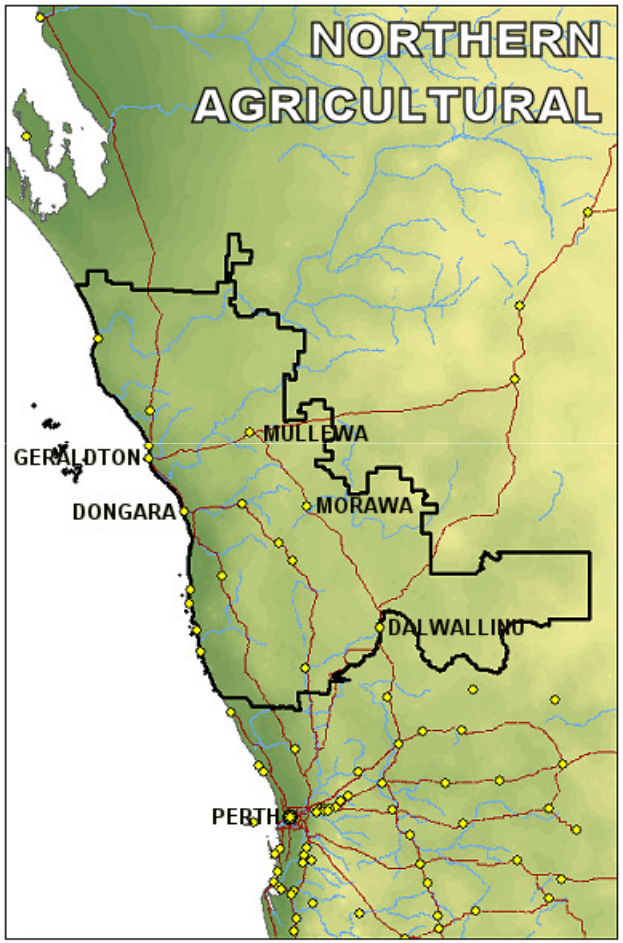
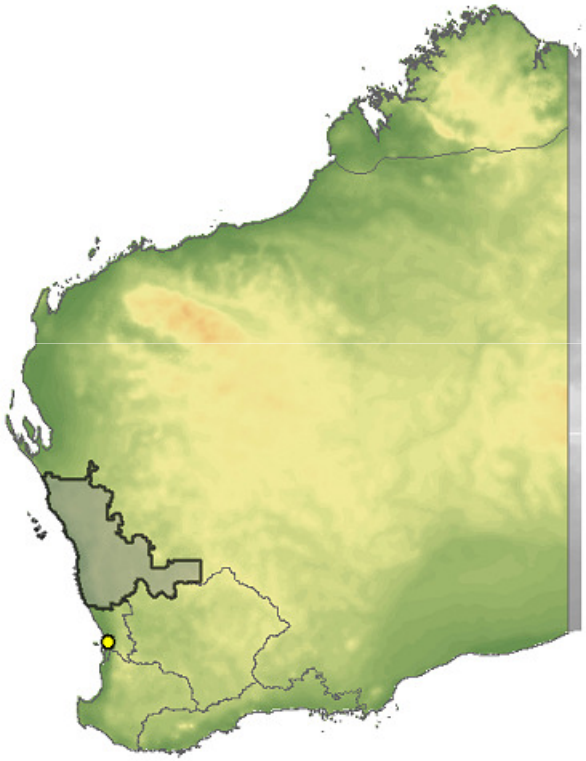
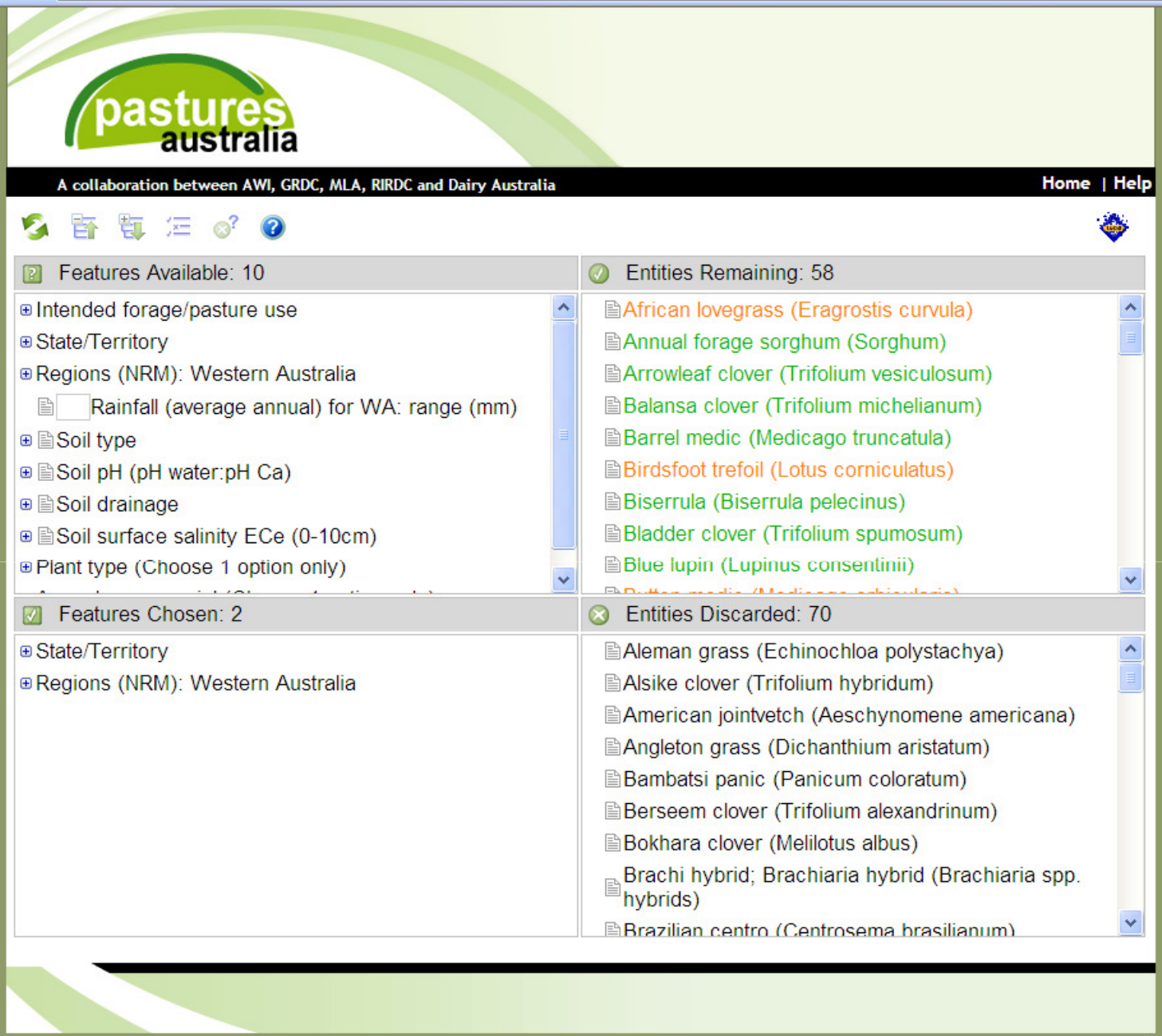




Avon • Northern Agricultural • Tropical North • Rangelands • South Coast • South West • Swan

New South Wales / ACT • Northern Territory • Queensland • South Australia • Tasmania • Victoria • Western Australia
Australia (all states)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Features Available: 10
Intended forage/pasture use
State/Territory
Regions (NRM): Western Australia
Rainfall (average annual) for WA: range (mm)
Soil type
Soil pH (pH water:pH Ca)
Soil drainage
Soil surface salinity ECe (0-10cm)
Plant type (Choose 1 option only)
Entities Remaining: 58
African lovegrass (Eragrostis curvula)
Annual forage sorghum (Sorghum)
Arrowleaf clover (Trifolium vesiculosum)
Balansa clover (Trifolium michelianum)
Barrel medic (Medicago truncatula)
Birdsfoot trefoil (Lotus corniculatus)
Biserrula (Biserrula pelecinus)
Bladder clover (Trifolium spumosum)
Blue lupin (Lupinus consentinii)
Features Chosen: 2
State/Territory
Regions (NRM): Western Australia
Entities Discarded: 70
Aleman grass (Echinochloa polystachya)
Alsike clover (Trifolium hybridum)
American jointvetch (Aeschynomene americana)
Angleton grass (Dichanthium aristatum)
Bambatsi panic (Panicum coloratum)
Berseem clover (Trifolium alexandrinum)
Bokhara clover (Melilotus albus)
Brachi hybrid; Brachiaria hybrid (Brachiaria spp. hybrids)
Brazilian centro (Centrosema brasilianum)

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Fact Sheet Index

Balansa clover

Scientific name(s)

Trifolium michelianum

Strengths

- Sets large amounts of seed.
- Hardseeded in cool climates
- Excellent waterlogging tolerance
- Adapted to a wide range of soil types and pH ranges.
- Mild salinity tolerance.
- Tolerant of clover scorch
- Regenerates well on suitable soils under appropriate grazing management.

Limitations

- Not suited to deep infertile sands.
- Not suited to moderate-high soil salinity.
- Slow establishment in the first year if sown under cold conditions.

Plant description

Plant: Aerial seeding, erect or semi-erect, much branched, self-regenerating annual temperate legume, growing to over 80 cm tall, but

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Pastures
- Annual pastures management
- Annual pastures species
- Australian Trifolium

General Enquiries: +61 8 9368 3333 | PaDIS: 1800 084 881

Pastures

Sub-Categories:

- Annual pastures management
- Annual pastures species
- Australian Trifolium Genetic Resource Centre
- Forage crops / Fodder conservation
- Perennial pastures
- Saltland pastures

Pastures are an essential component of agricultural systems under dryland and irrigated conditions. Their importance as a land use in Western Australia is indisputable as in any year they occupy at least half of the land in the low to medium rainfall areas and almost two thirds in those with higher rainfall.

Pastures have traditionally been used in crop/livestock production systems to provide feed for stock, incorporate atmospheric nitrogen into the soil—in the case of leguminous species—and break pest and diseases cycles.

Choosing the right species and cultivar

- Acid and sandy soils – serradella, biserrula, arrowleaf clover (3-6 weeks extra green feed)
- Waterlogged soils – balansa clover, persian clover, gland clover, white seeded subclover (yanninicum)
- Alkaline/hard setting soils – medics, bladder clover, rose clover, biserrula, gland clover

Choosing the right species and cultivar

- Broadleaved weeds
  - Subclover and clovers, MCPA, 2,4 D, Broadstrike
  - Biserrula, grazing
  - Serradella, Spinnaker/Raptor, autumn cleaning yellow serradella
  - Medics, Broadstrike

- Rotation
  - Biserrula > Serradella/Medic > Clovers > Cadiz FS

    3-4 crops 1-2 crops 1 crop 0 crops

Inoculation groups

- Clovers - Group C (currently WSM1325, essential for bladder clover, Arrowleaf clover, sub response?)
  - Strawberry clover Group O
- Medics - Burr medic, Barrel medic Group AM
  - Strand medic, Disc medic, Barrel medic Group AL
- Serradella - Group S or G
- Biserrula - Group BS

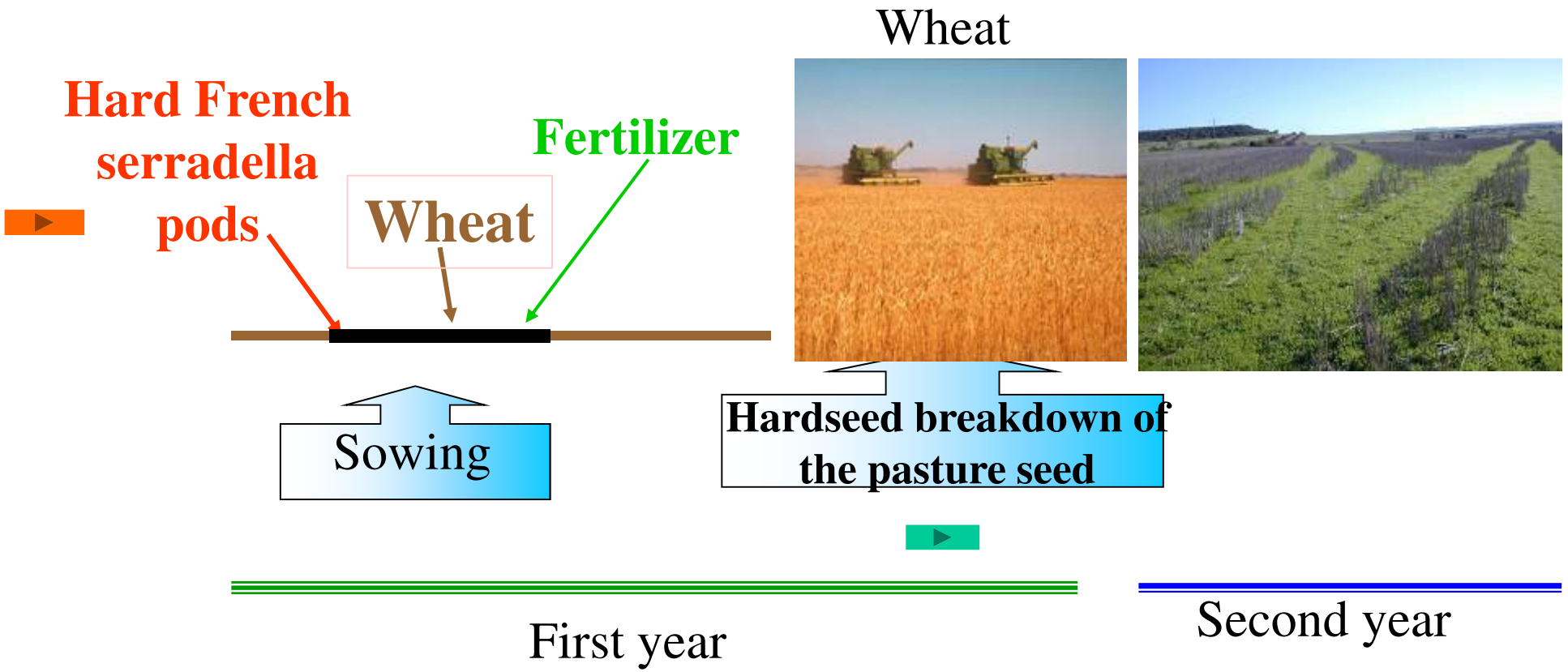
Inoculation methods

- Seed lime pelleting – reliable, best done just prior to sowing and sown into wet soil, cheap, peats need to be kept cool!.
- Dry clay granules – Convenient, can go into dry soil?, must keep rate up, more expensive, not suited to complex blends
- Dry peat granules - Convenient, sown into wet soil?, must keep rate up, more expensive, not suited to complex blends, needs to be kept cool
- Seed polycoat pelleting – OK on medics/lucerne, no good on clovers

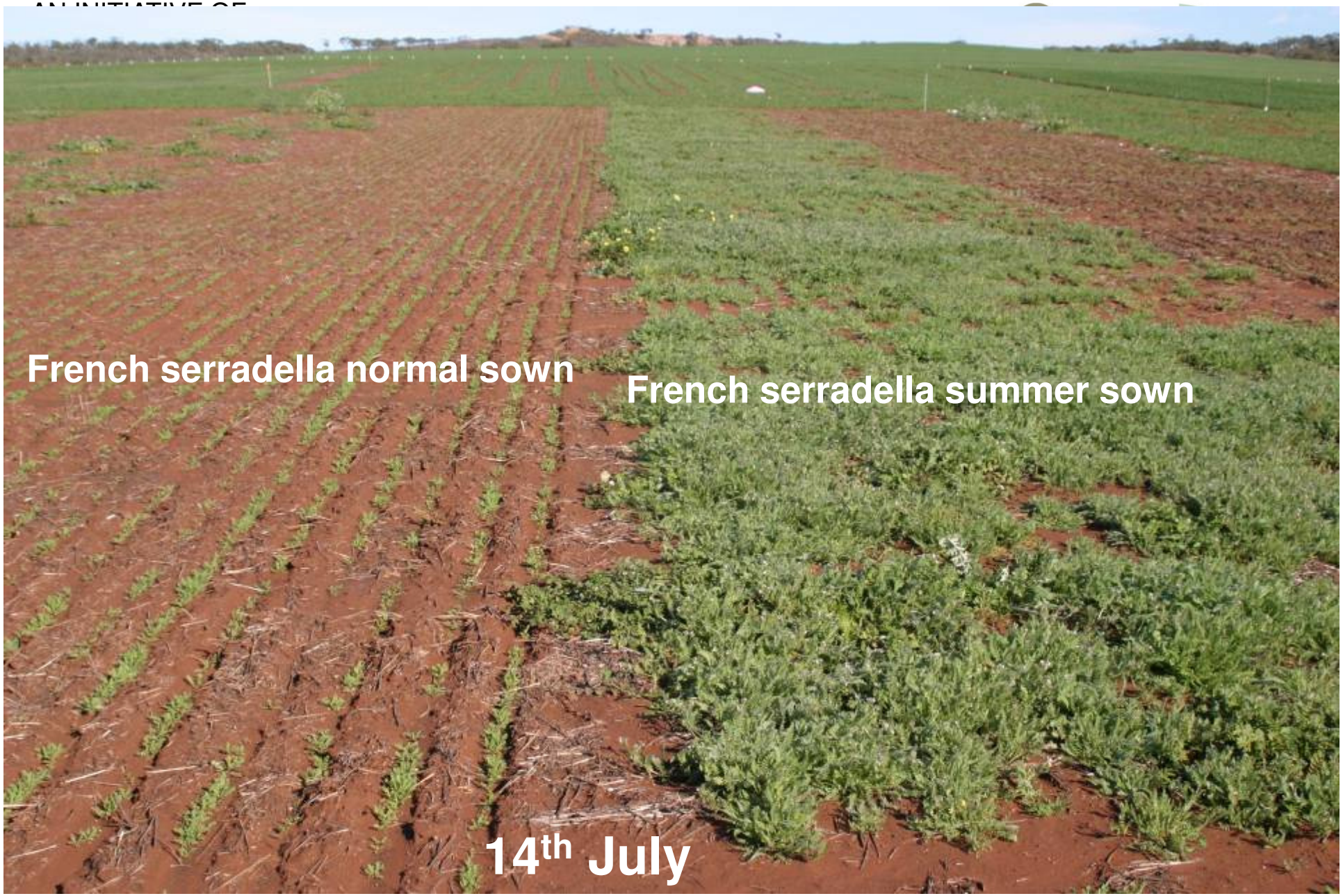
Methods of introduction

- Traditional – scarified seed, sow after knockdown, can be slow due to cold
- Dry – no non-selective knockdown, gets going on first rains, can be inefficient, keep sowing rates up, scarified seed.
- Twin-sowing
- Summer sowing

Twin sowing

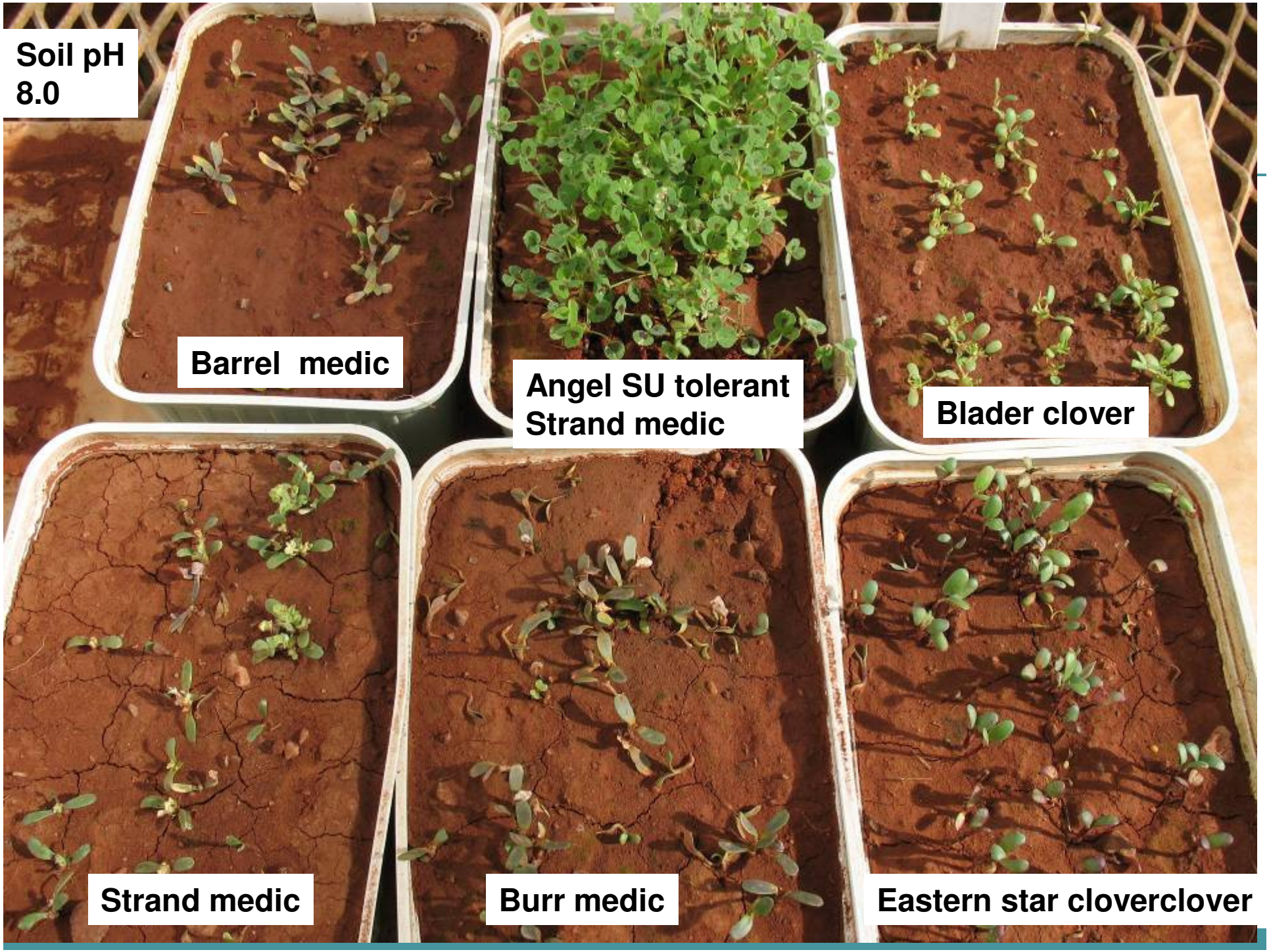

Wheat
Hard French serradella pods
Fertilizer
Wheat
Sowing
Hardseed breakdown of the pasture seed
First year
Second year


French serradella normal sown
2 of June 2010
French serradella summer sown
February


French serradella normal sown
French serradella summer sown
14th July

Management for legume pastures

- Avoid sulfonyl urea based herbicides in preceding crop/s
- Blanket wiping vs spraytopping
- Rotation
- Monitor and control insect pests
  - RLEM
  - Aphids
  - Budworm in serradella
  - Lucerne Flea


Soil pH
8.0
Barrel medic
Angel SU tolerant
Strand medic
Blader clover
Strand medic
Burr medic
Eastern star cloverclover


Effected plants

Management for legume pastures

- P – 5 easy steps to ensure you are making money from superphosphate.

- Other nutrients – Making better fertiliser decisions for grazed pastures in Australia
  - Critical K levels in sands = 126 mg/kg

Key points

- Legume content is essential for high animal performance
- Look after them if you have them
  - Insect control
  - Adequate nutrition particularly P & K
  - Don't over crop unless sure of the seed bank
  - Avoid SU use in preceding crop
  - Avoid regular spraytopping
- Introduce the right pasture species and cultivar for the situation and don't forget to inoculate


Thank you