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Legumes for Dryland Pastures

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beef+lamb new zealand

Ewes & twin lambs graze sub clover dominant pasture at ‘Tempello’

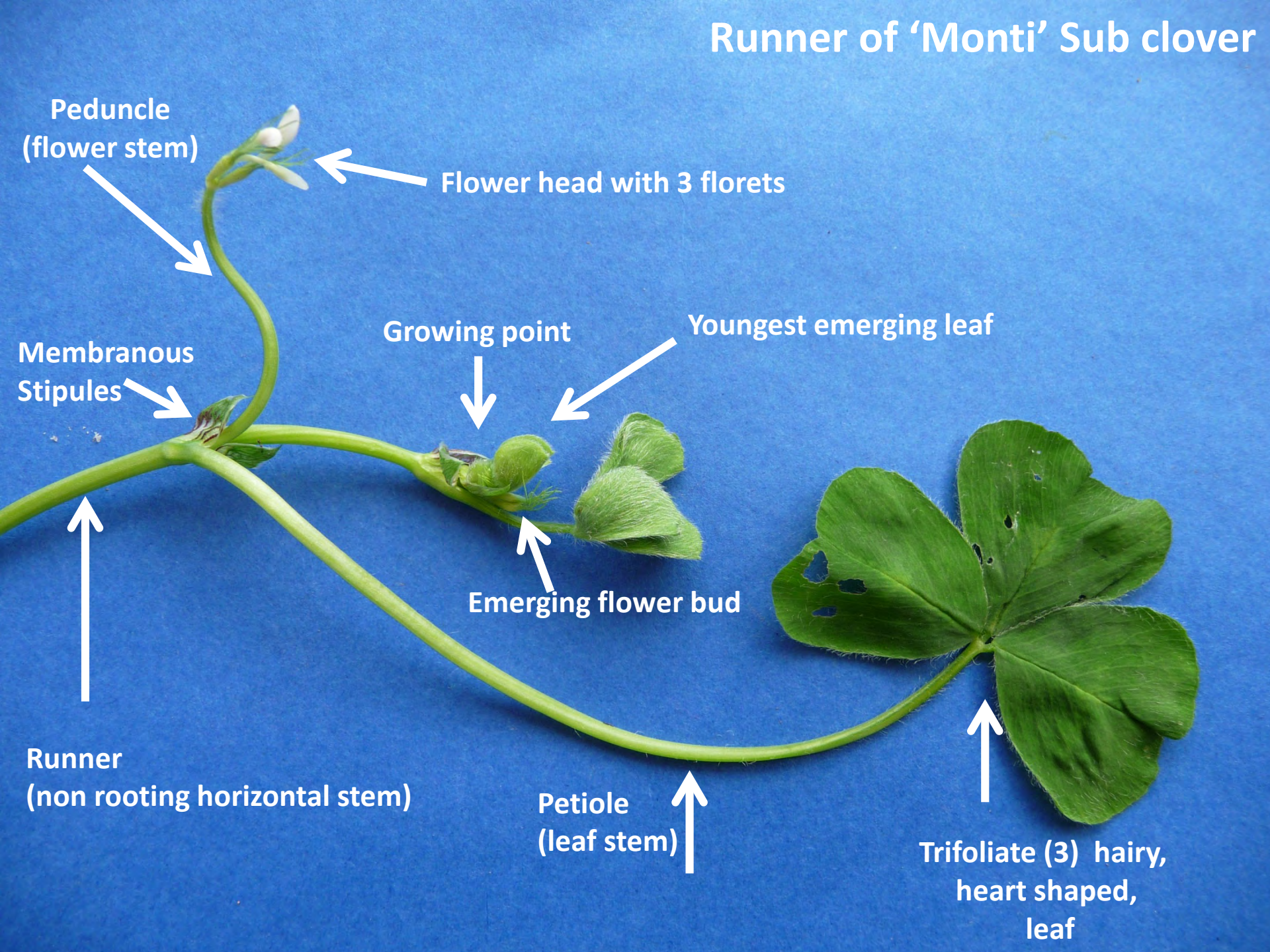
Ewes & twin lambs graze lucerne at Ashley Dene


18/03/2004

Mt Benger, North Canterbury

‘Antas’ sub clover at Mt Benger

Runner of ‘Monti’ Sub clover



‘Mt Barker’ sub clover at Mt Benger

Cluster & suckling clovers in flower

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Striated clover in flower

Table 1 Agronomic data for subterranean clover cultivars registered in Australia. Data from long-term means of irrigated plants from an early May sowing in Perth, WA (adapted from Nichols *et al.* 2013).

Subspecies: B, brachycalycinum; S, subterraneum; Y, yanninicum.
Min. growing-season length (months) is minimum target environment for reliable seed set.
Burr burial: 1, little or no burial; 9, strong burial.
Relative hardseededness: 1, least hard; 10, most hard, based on laboratory screening in a diurnally fluctuating 60/15°C temperature cabinet for 16 weeks, using the procedure of Quinlivan and Millington (1962).

Cultivar	Subspecies	Days to first flowering	Min. growing season length (months)	Burr burial rating (1-9 rating)	Hardseededness (0-10)	Seeds/m^2 sown at 10 kg/ha
Tallarook	S	163	9	5	1	135
Denmark	S	142	7.5	5	2	141
Leura	S	147	8	5	2	135
Mt Barker	S	137	7.5	3	1	120
Woogenellup	S	130	7	3	1	93
Antas	B	138	7.5	1	3	100
Campeda	S	123	6	6	5	123
Coolamon	S	133	6.5	7	5	130
Monti	Y	110	5.5	6	2	101
Narrikup	S	126	6.5	7	3	185
Napier	Y	140	7.5	6	5	88
Rosabrook	S	142	7.5	6	5	161

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Principles for fast lamb production

- Sheep prefer 70% legume (lucerne or clover) and 30% grass when given a free choice
- Twin lamb LWG pre-weaning is directly proportional clover content
- Pre-weaning twin growth rates >300 g/hd/day are possible with >50% clover on offer
- Assumes ewe DM intake is not limited

How to get legume rich pastures

- Pasture legume content will not magically increase
  - **effort is required**

- Choose an appropriate legume for your environment;
  - **lucerne if you can grow it**
  - annual clovers for dry summers
  - Summer active perennial clovers in summer moist/irrigated environments

How to get legume rich pastures

- Sow high legume rates (**e.g. 10 kg/ha sub clover**) and low grass rates (e.g. **2 kg/ha CF** or **5 kg/ha PRG**)
- Young pastures will be legume dominant, ideal for twins
- 25 kg N/ha of “free” nitrogen is fixed per tonne of legume DM
- Soil pH at >5.6 for most clovers and >6.0 for lucerne

N & water use by dryland pastures

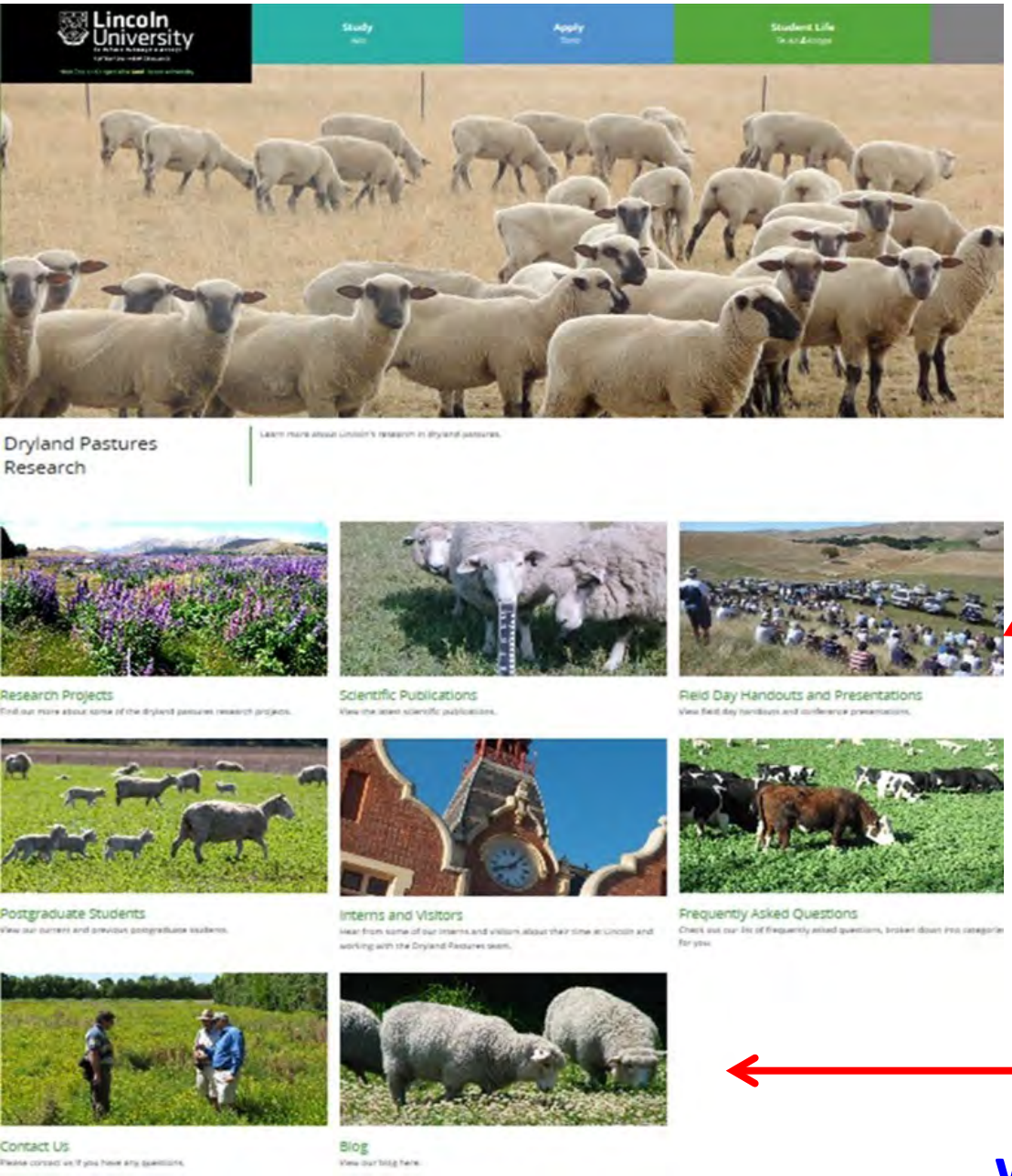
- Nitrogen drives grass production
- N deficient grass growing at 40 kg DM/ha/d **uses water at the same rate** as grass in dark green urine patch growing at 100 kg DM/ha/day
- N deficient grass produces **10 kg DM/ha for each mm** of water used

  BUT
- Grass in the dark green urine patch produces **25 kg DM/ha for each mm** of water used

N & water use by dryland pastures

- Legumes also produce **25 kg DM/mm water used**

- Legume dominant dryland pastures will use soil water more efficiently than N deficient grass dominant pastures



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Early autumn rains give perfect conditions for Sub clover

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Posted on behalf of Dick Lucas

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