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## Right Plant, Right Place, Right Purpose, Right Management



**EverGraze**  
More livestock from perennials



DEPARTMENT OF  
PRIMARY INDUSTRIES

future farming  
systems research

### Issues

- Limited productivity perennial ryegrass / sub clover pastures
- Challenge to increase productivity and profitability of livestock grazing systems by 50%
- Address NRM issues
- Recharge
- Ground cover
- Climate variability



EverGraze Site Hamilton March 2007

## EverGraze Approach

### Building Improved Systems

- Plant / Species / Cultivar
  - Seasonal performance
  - Match rainfall
  - Use rain when it falls
- Place in the Landscape
  - Soils
  - Topography
- Animal system
  - Wool/Meat Terminal
  - Hedgerows
  - Ewe Management
- Management
  - Rotational Grazing
  - FOO targets

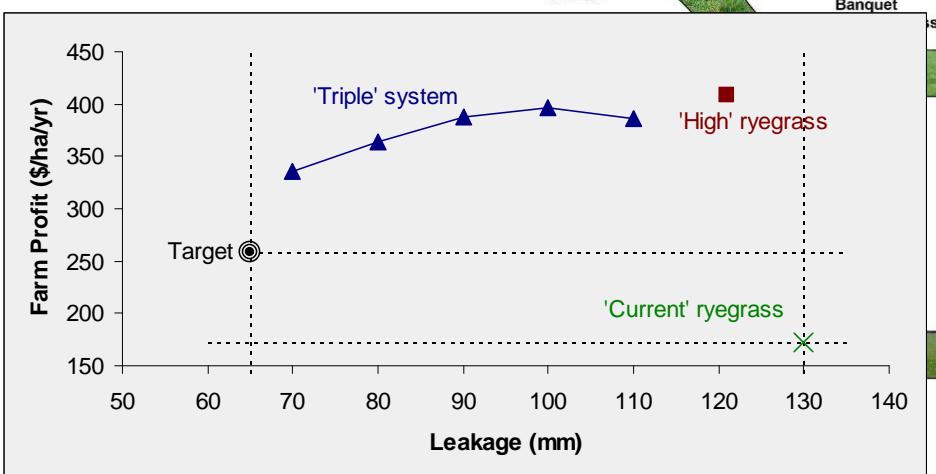


### The Rewards

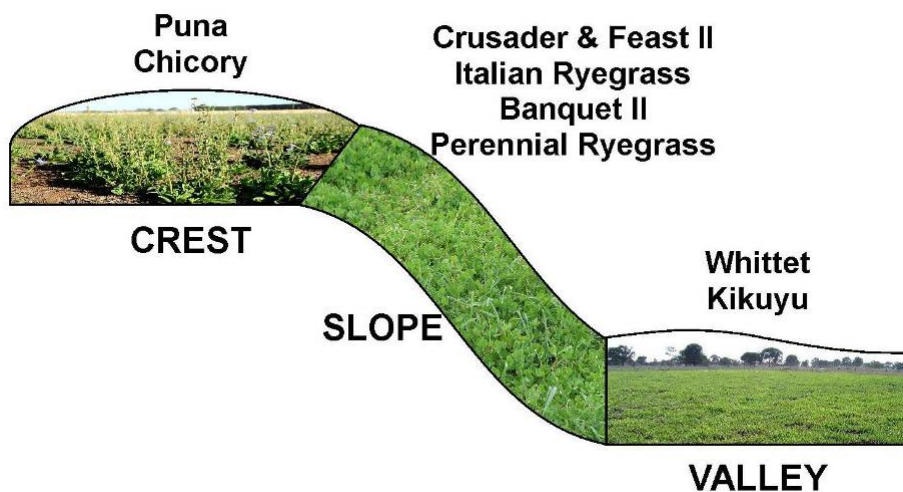
- Increased summer pasture production
- Increased summer feed quality
- Increased animal production
- Increased stocking rates
- Increase profit per hectare
- Increased water use
- Increased lamb survival
- Increased flexibility to manage variable seasons
- Increased persistence

## Increased Profit

- Pre-experimental MIDAS modelling;

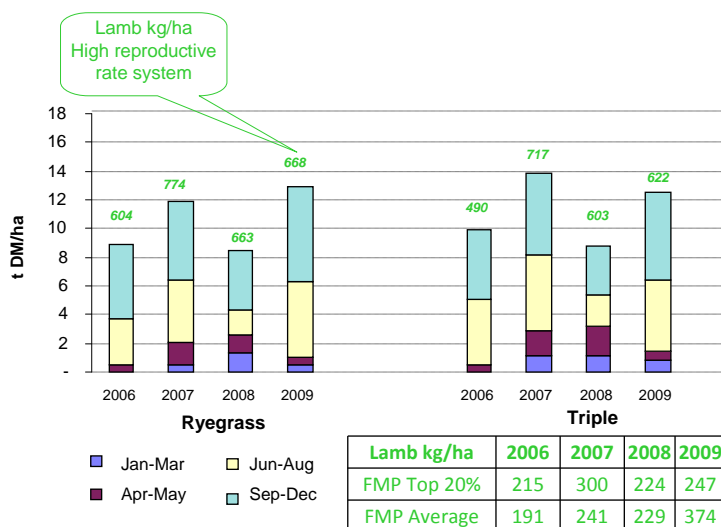


## Novel System

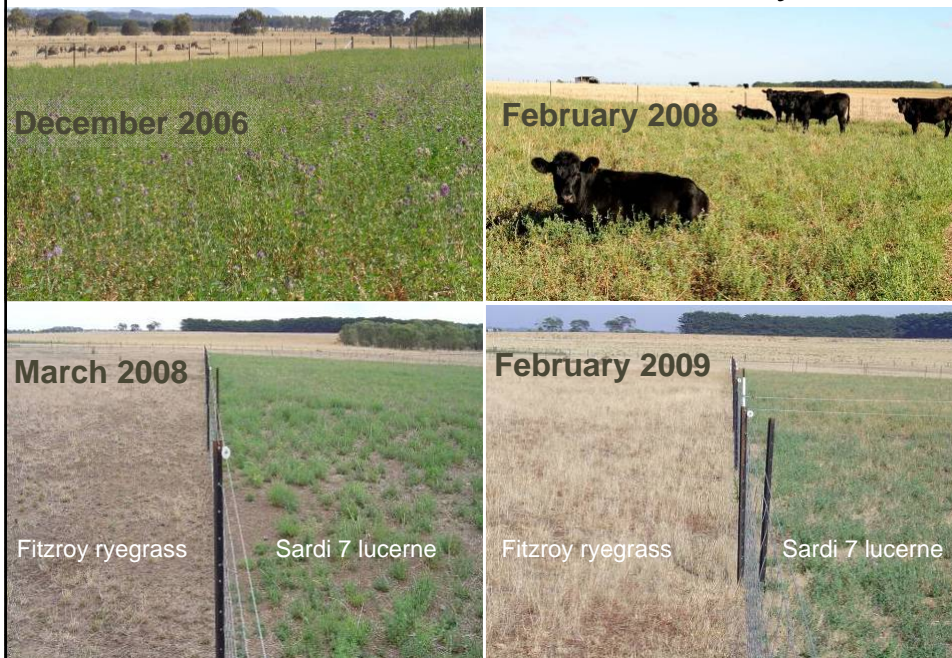


\*All pastures sown with sub-clover – Leura, Gosse and Mink White Clover

## Pasture Productivity & High Reproductive Rate Drives Lamb Productivity per Hectare

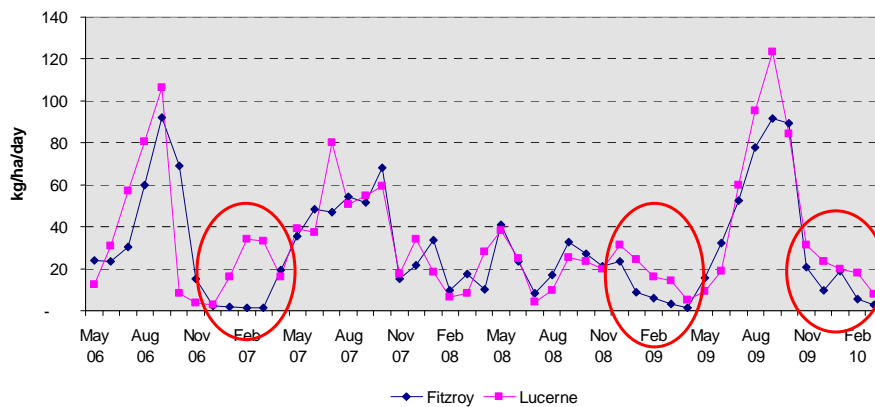


## Lucerne - Persistent Summer Activity



## Lucerne: Higher Summer Growth Rates

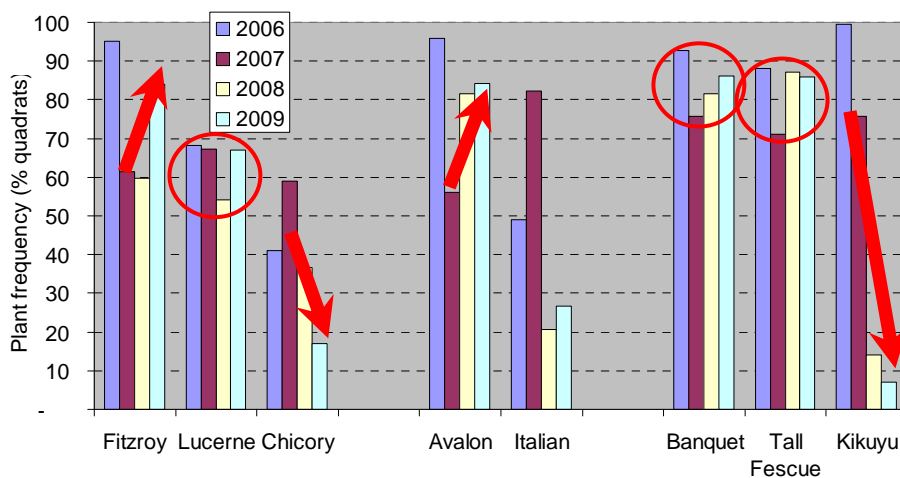
Crests - Pasture Growth Rates



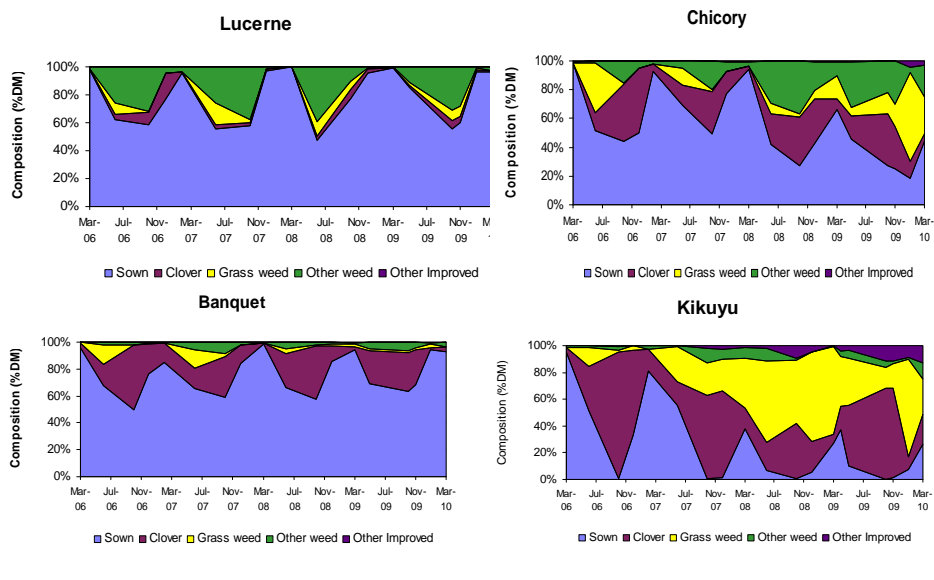
## Pasture Systems & Autumn Destocking

Sheep System*	Pasture System	Destocked Period/Time off System (days) <sup>#</sup>			
		2007	2008	2009	2010
Single Merino or Merino Prime Lamb	Novel	0 <sup>a</sup>	23.33 <sup>a</sup>	31.67 <sup>ab</sup>	57.67 <sup>a</sup>
	Ryegrass	74.33 <sup>b</sup>	14.00 <sup>a</sup>	38.67 <sup>abc</sup>	18.67 <sup>b</sup>
	Triple	0 <sup>a</sup>	0.00 <sup>b</sup>	29.00 <sup>a</sup>	9.33 <sup>b</sup>
Twin Merino or Coopworth Prime Lamb	Ryegrass	50.33 <sup>b</sup>	28.67 <sup>a</sup>	50.33 <sup>c</sup>	27.33 <sup>b</sup>
	Triple	0 <sup>a</sup>	14.67 <sup>a</sup>	47.67 <sup>c</sup>	18.67 <sup>b</sup>

## Persistence - 4 to 5 years after sowing



## Stable & Unstable Botanical Composition



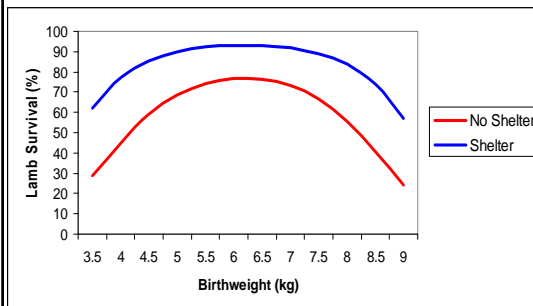
## Increase in profit (\$/ha) from an extra 10% lambs weaned

Pasture System	Wool focussed enterprise		Meat focussed enterprise	
	Traditional Wool	Wool/Meat	Wool-Meat terminal	1 <sup>st</sup> cross
Current	8	17	26	23
High Perennial Ryegrass	14	28	40	30
Triple	13	30	44	27

(from Young *et al.* 2004)

- Can be improved by:
  - prolificacy (number of lambs born per ewe lambing)
  - increasing fertility (No. of ewes pregnant per ewe joined)
  - survival (number of lambs weaned per lamb born)
- Trade off - extra income from more animals for sale vs extra energy demands from ewes
- More valuable on the triple pasture systems and for meat focussed enterprises

## Shelter for Lamb Survival & NRM



- Perennial Grass Hedges
- High quality inter-row
- Reduces wind speed
- Summer active pasture
- Doubles for off shears
- Critical for lamb kg/ha



## *Right Plant, Right Place, Right Purpose, Right Management*

### Right Plant

- Plant / Species / Cultivar
  - Seasonal performance
  - Diversity
  - Consider feed quality
  - Persistence

### Right Purpose

- Efficient animal system
  - High reproductive rate
  - Wool/Meat Terminal
  - Hedgerows & Ewe CS targets
  - Optimise lambing time
  - Good genetics

### Right Place

- Match Soil type
  - Fertility, pH & AI
  - Texture & Drainage
- Topography
  - Natural features
  - Northern aspects for shelter

### Right Management

- Management & monitoring
  - Rotational Grazing
  - FOO targets
  - Ground cover
  - Destocking & containment
  - Worm burdens

Return on capital invested 20% to 30% & 5 to 7 year payback (Lewis et al. 2011)

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EverGraze is a Future Farm Industries CRC, MLA and AWI research and delivery partnership



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