Pasture into Product

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for Phil Graham

Technical Specialist Grazing Systems

I & I NSW

Yass

Turning Pasture Into Product

§ Be clear about your production system
  – breed and finish
  – breed and sell as stores
§ Grow enough pasture/crop at the right time
§ Use the best genetics for your system
§ Efficiently utilise your feed with the aim of maximum weight gain from green feed

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Livestock performance

§ Livestock performance is driven by intake
  – kg of dry matter consumed per head per day

§ But what drives intake?
  – Pasture quantity/availability (kg DM/ha or height)
  – Pasture quality (% digestibility)

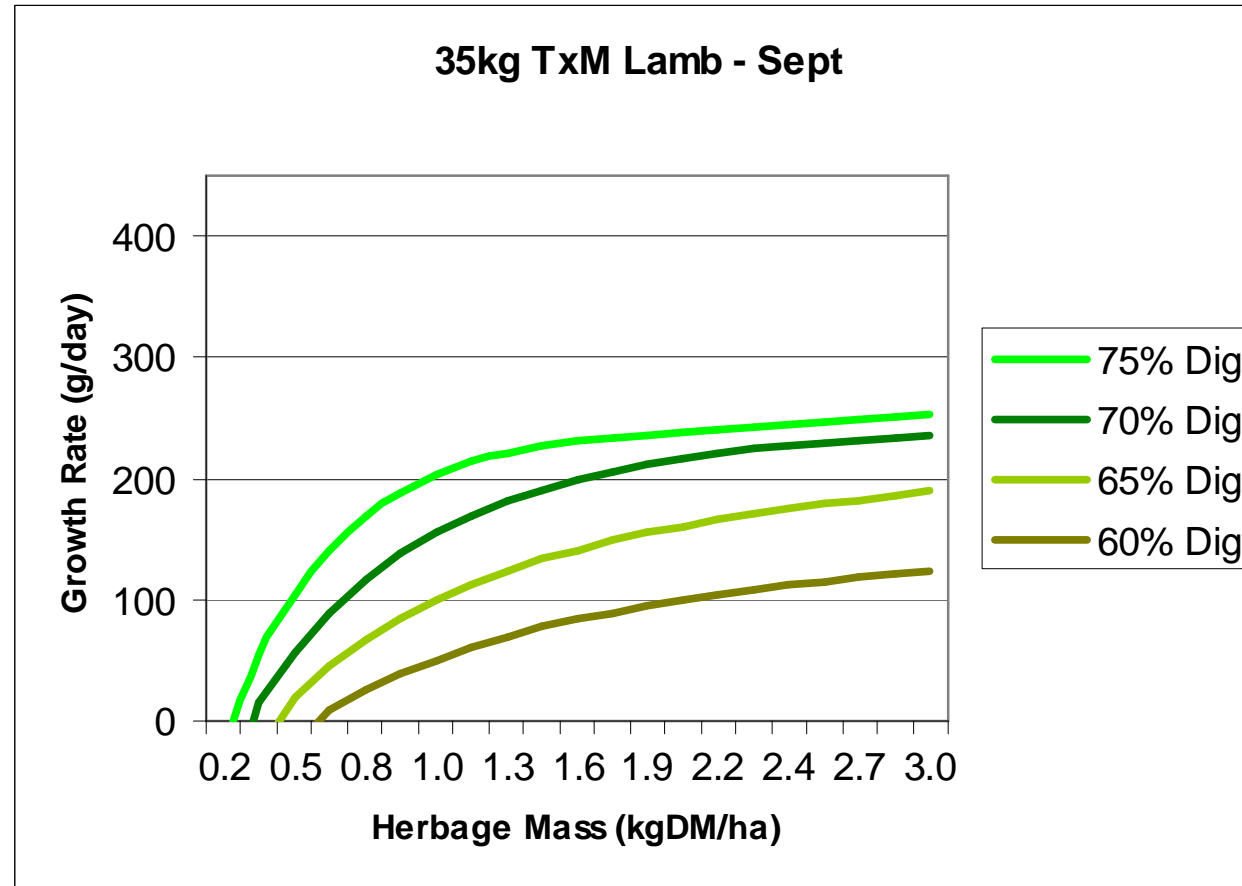# Digestibility decline with maturity – temperate pasture

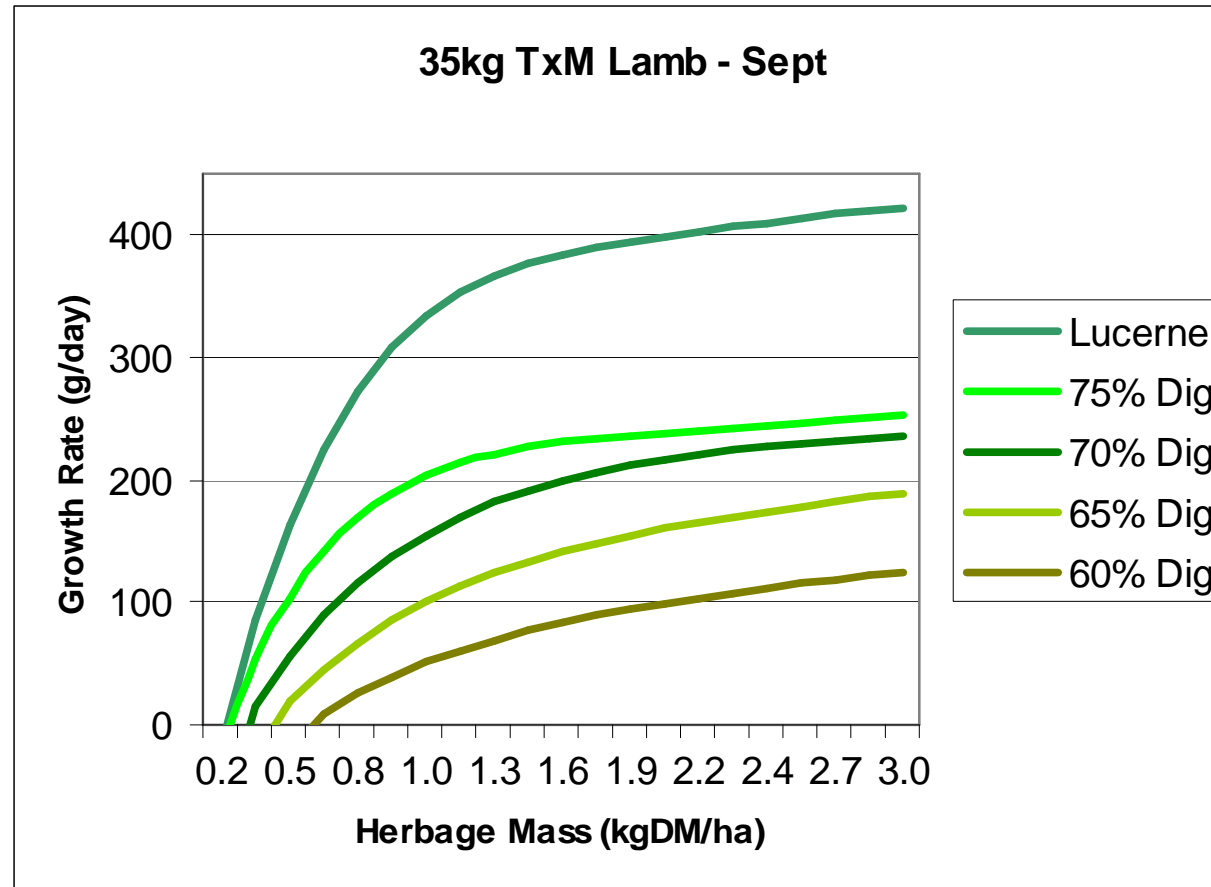A guide to digestibility decline as temperate pastures mature
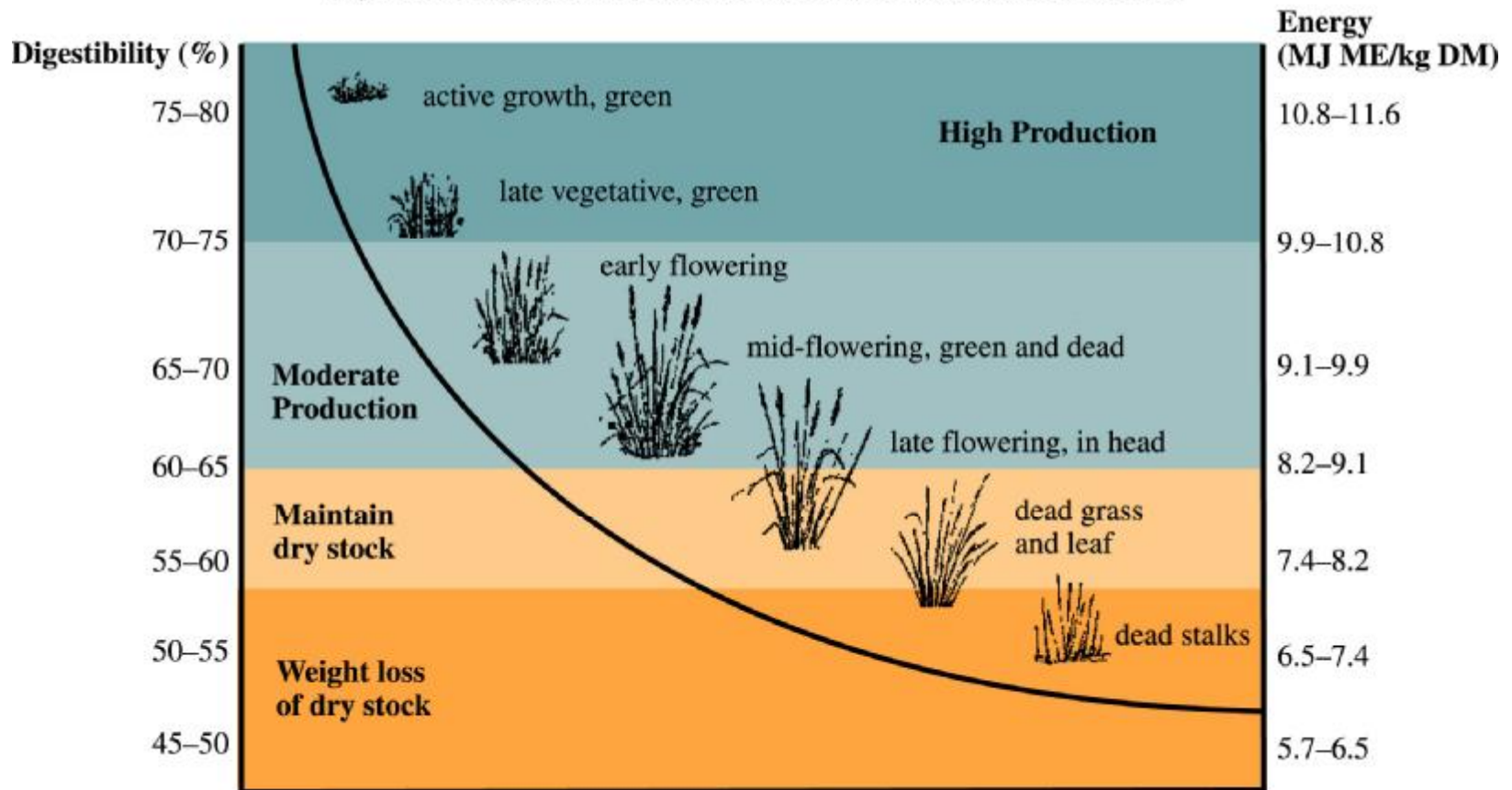
Pasture availability benchmarks

Category	Pasture Digestibility		
	75	68	60
Dry Sheep	400	600	1200
Pregnant Ewes - Mid	500	700	1700
- Last month	700	1200	ns
Lactating Ewes - singles	1000	1700	ns
- twins	1400	ns	ns
Growing Stock			
Percent of potential Growth Rate			
30% (90g/d)	400	700	1700
50% (150g/d)	600	1000	ns
70% (190 g/d)	800	1700	ns
90% (250 g/d)	1600	ns	ns

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Effect of quality & quantity on growth

35kg TxM Lamb - Sept

Growth Rate (g/day) vs Herbage Mass (kgDM/ha)

- 75% Dig
- 70% Dig
- 65% Dig
- 60% Dig

Effect of quality & quantity on growth

Effect of quality & quantity on growth

35kg TxM Lamb - Sept

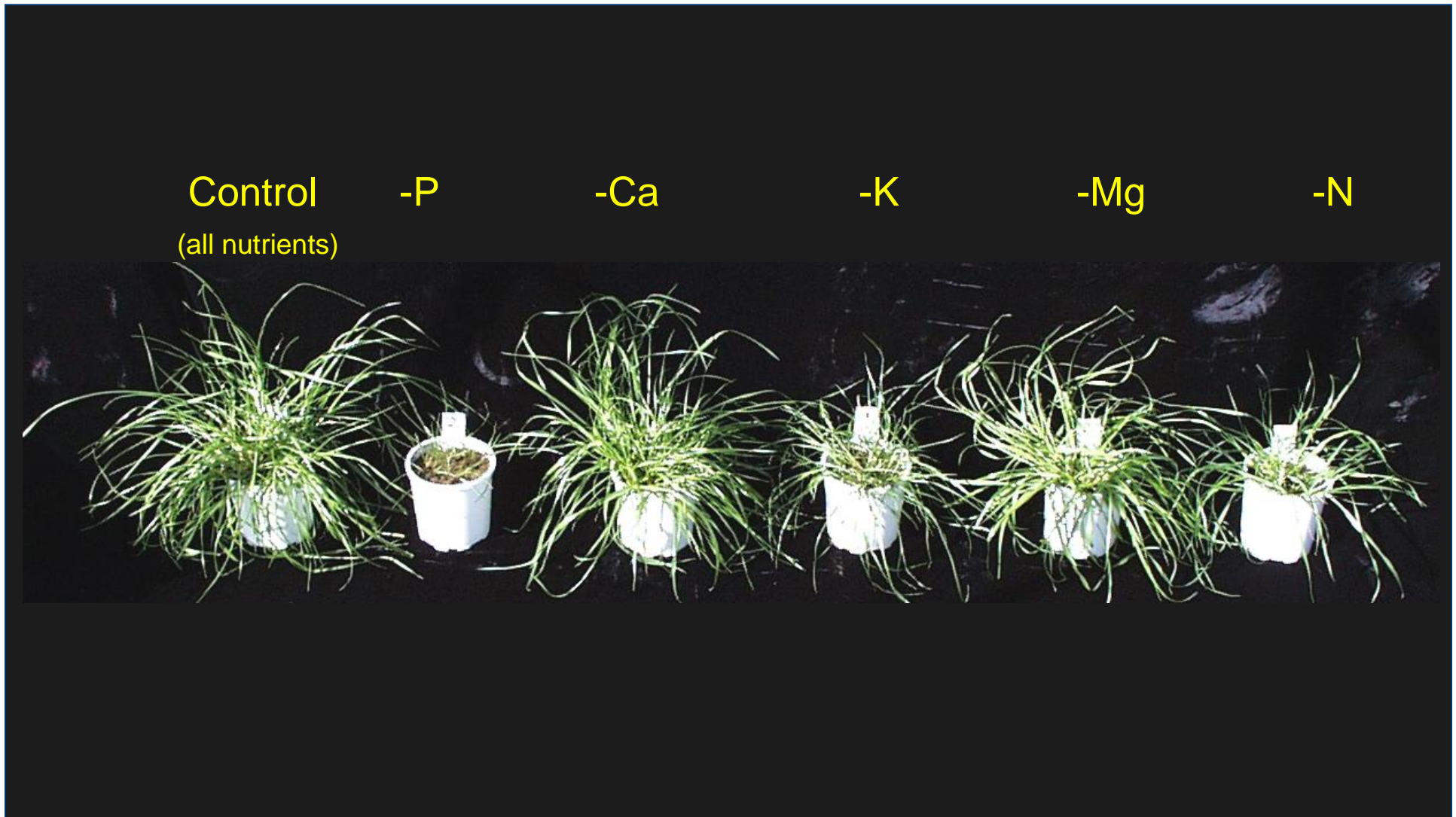# Effect of quality & quantity on growth

35kg TxM Lamb - Sept
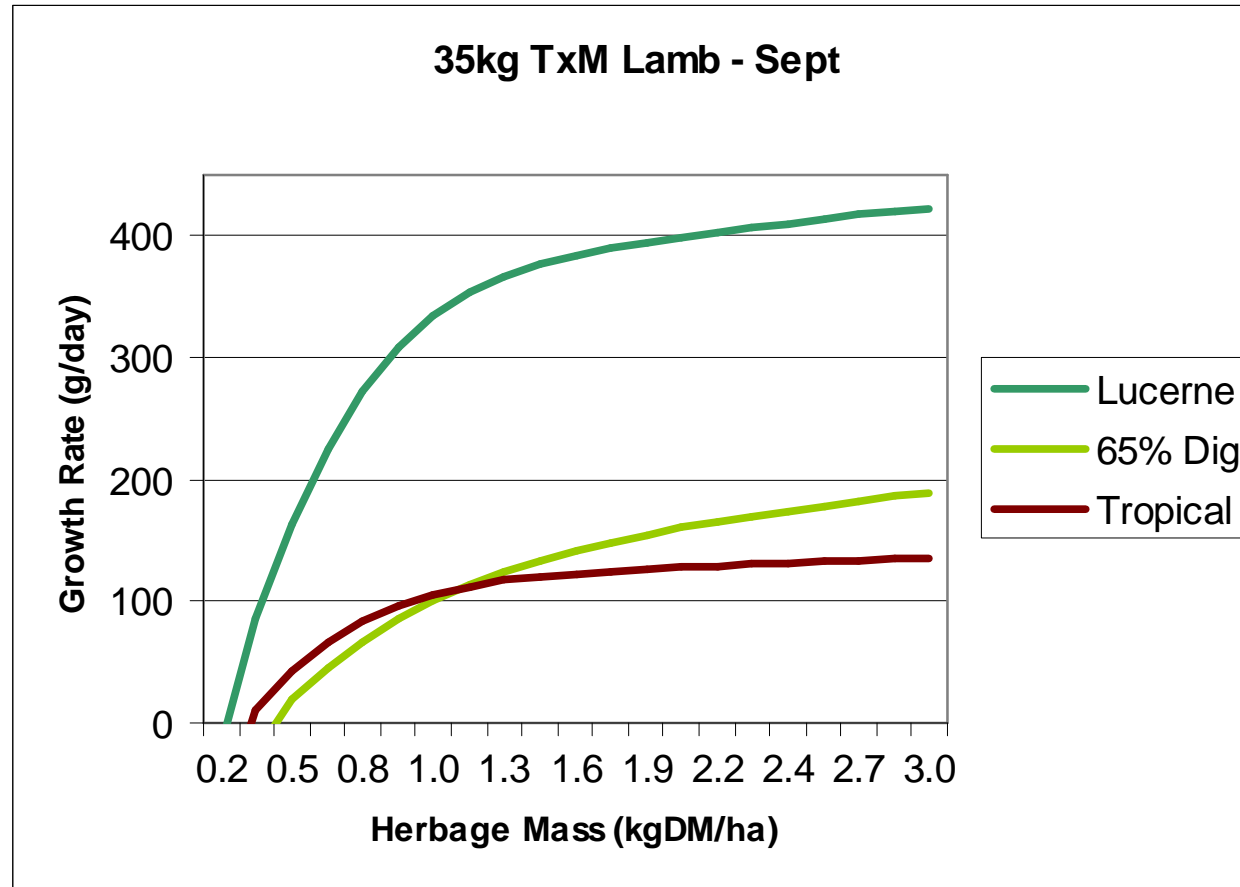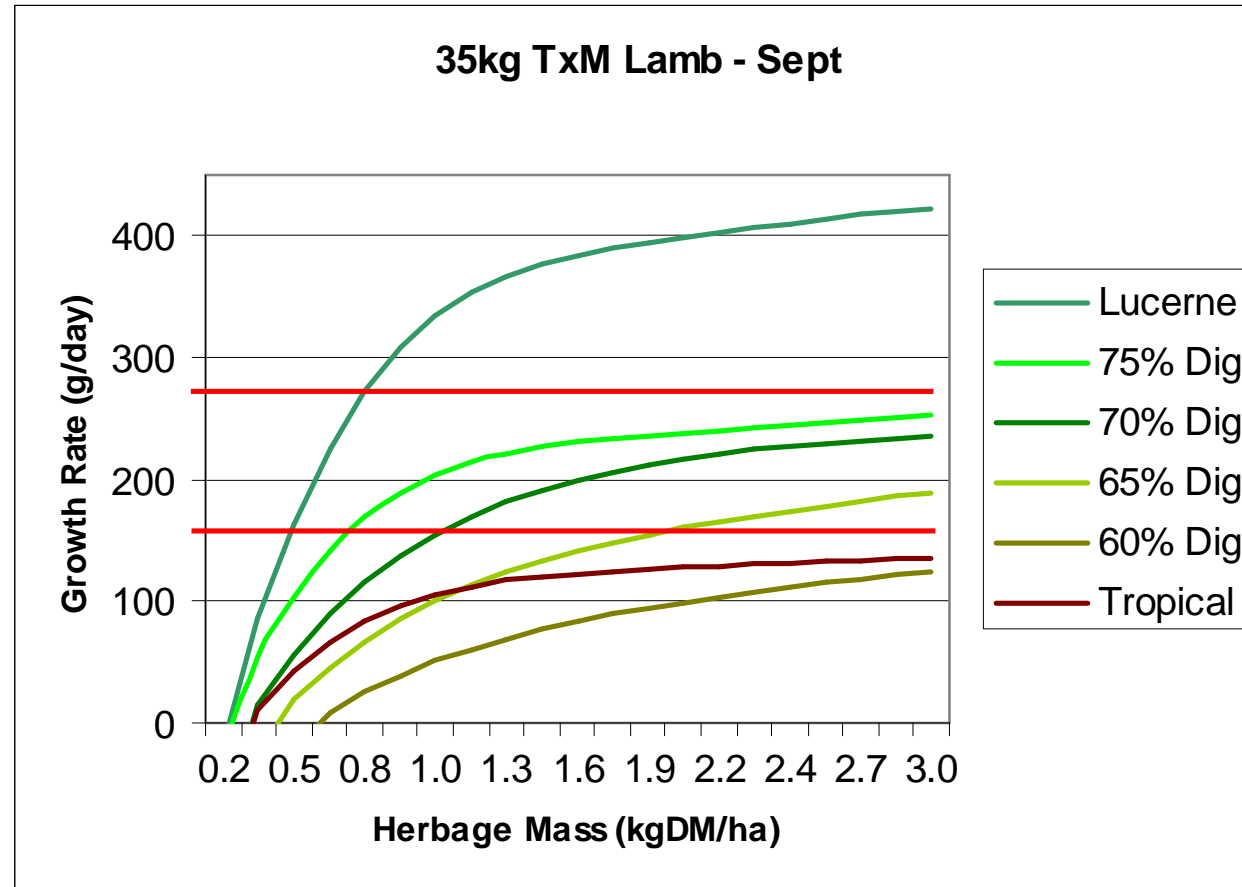
Production Systems

§ Breed and finish – must be confident of your feed base in the majority of years

§ Breed and sell – less risk and simpler system
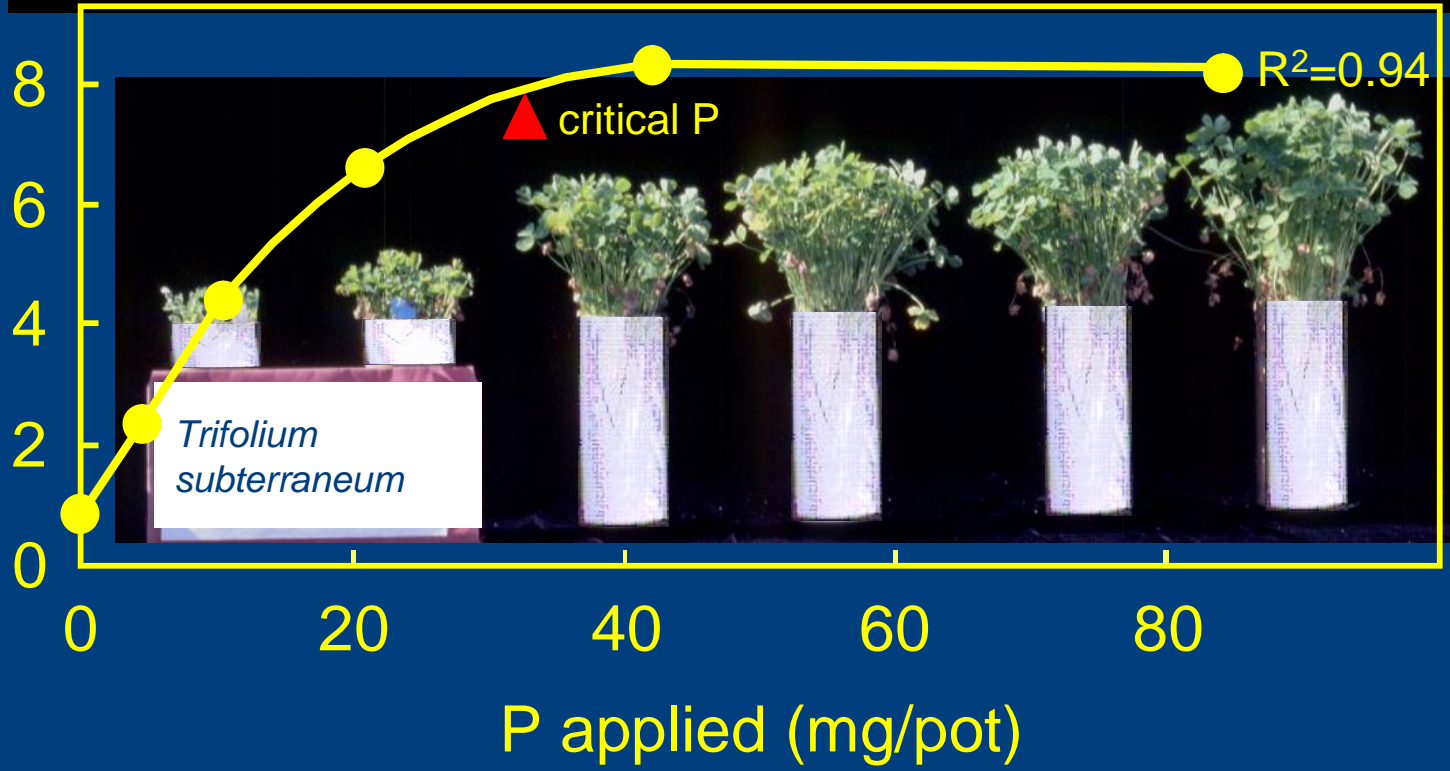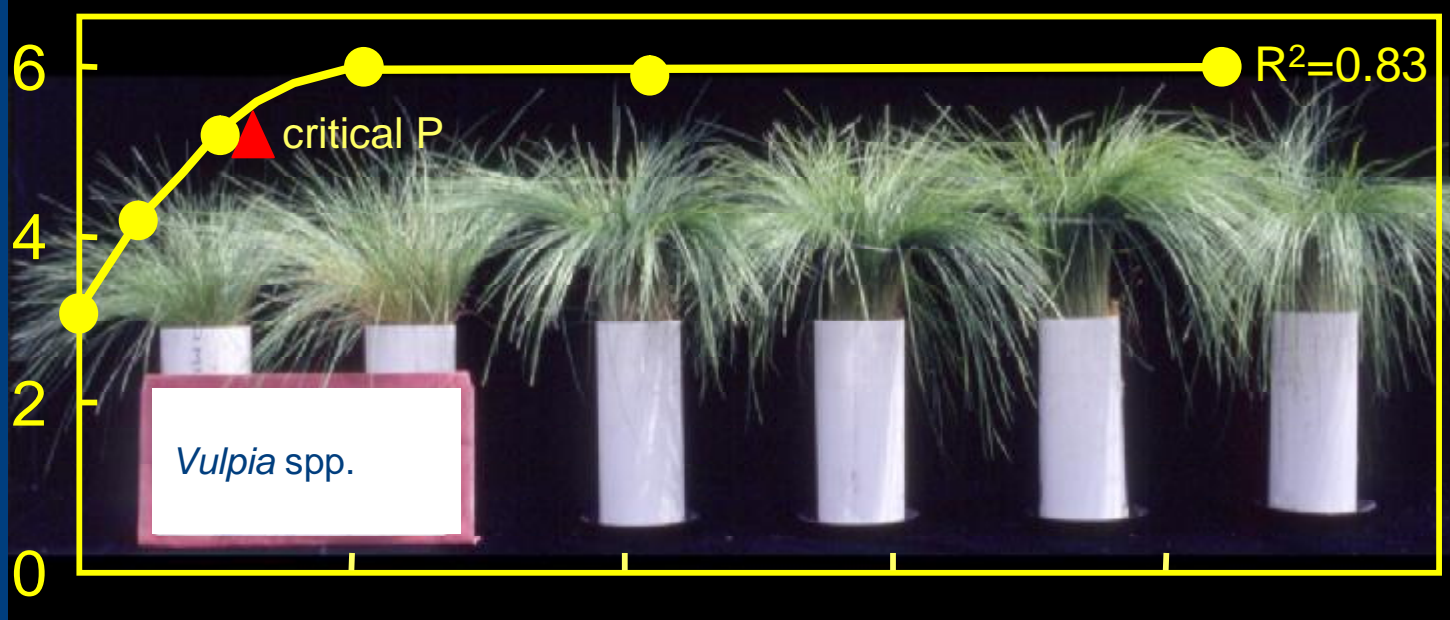
§ Flexible – a bit of both depending on years

The feed base is not what it used to be

§ Soil P levels under pastures have declined during the 2000's based on the decline in fertiliser sales by 50 to 60%

§ As a result pasture production has declined
  – on top of the damage done by the extended dry period

§ Therefore our capacity to run the livestock numbers we did in 2000 has diminished

# Growth of annual ryegrass in un-limed topsoil from "Kia-Ora" (1 Sep. 03)

Control (all nutrients)   -P   -Ca   -K   -Mg   -N

Shoot DW (g) vs P applied (mg/pot)

Vulpia spp. — R²=0.83, critical P

Trifolium subterraneum — R²=0.94, critical P

Relationship between PBI and Critical Colwell P

PBI category		Critical Colwell P (for midpt of PBI category)
<15	Extremely low	**23** (20-24)
15-35	very very low	**26** (24-27)
36-70	very low	**29** (27-31)
71-140	low	**34** (31-36)
141-280	moderate	**40** (36-44)
281-840	high	**55** (44-64)
>840	very high	*insufficient data*

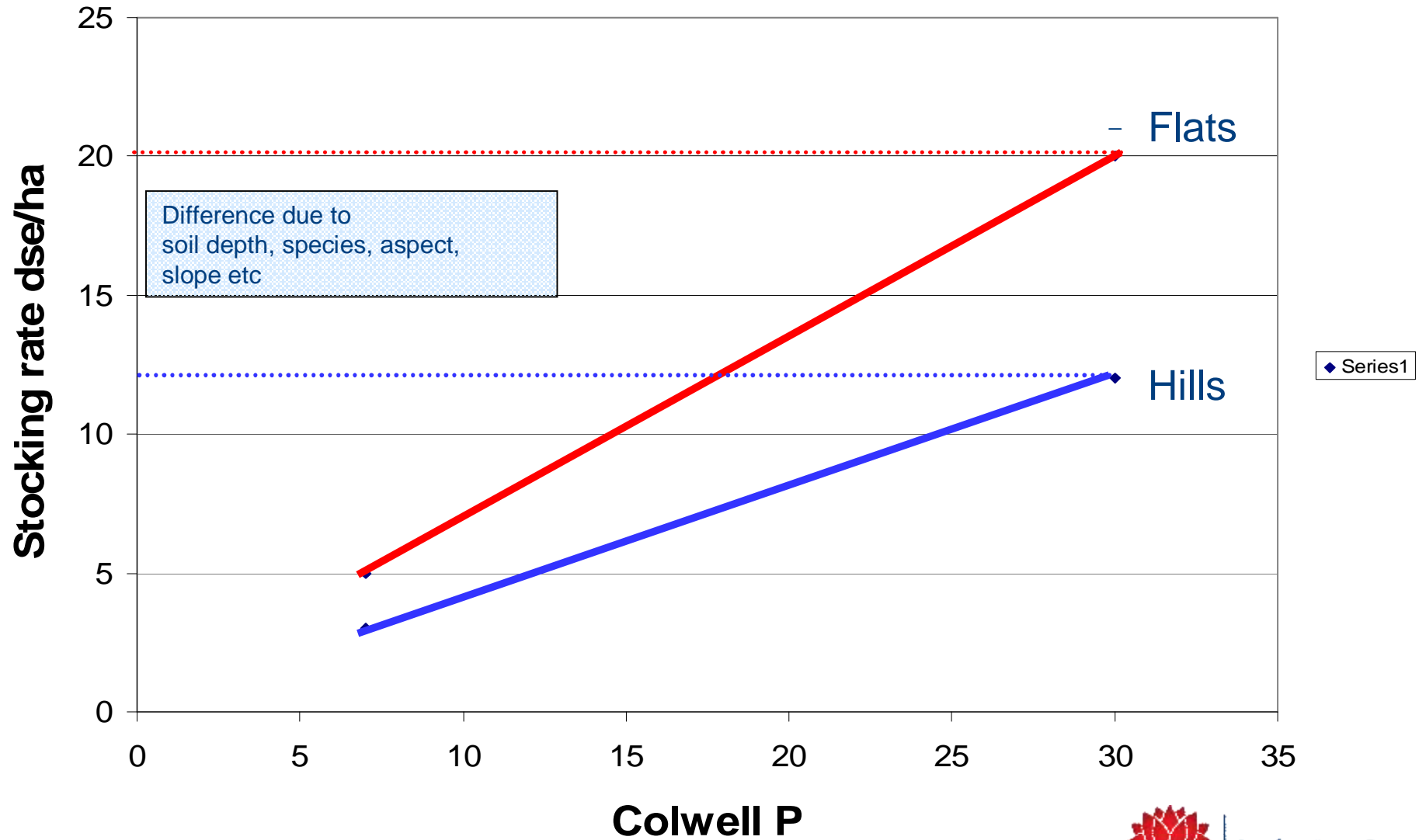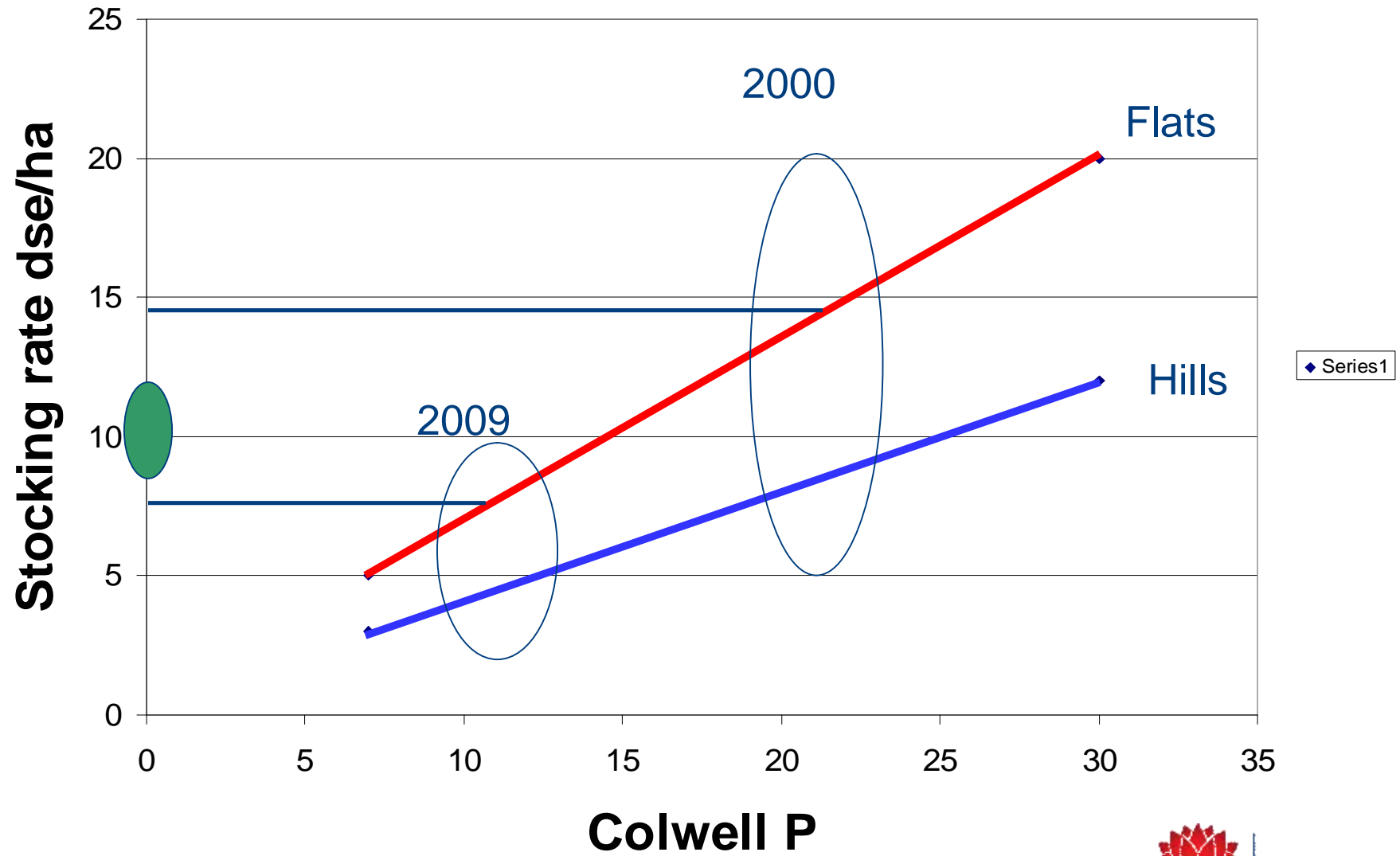# Pasture growth in June, July, Aug, Sept

Pasture growth at Bookham
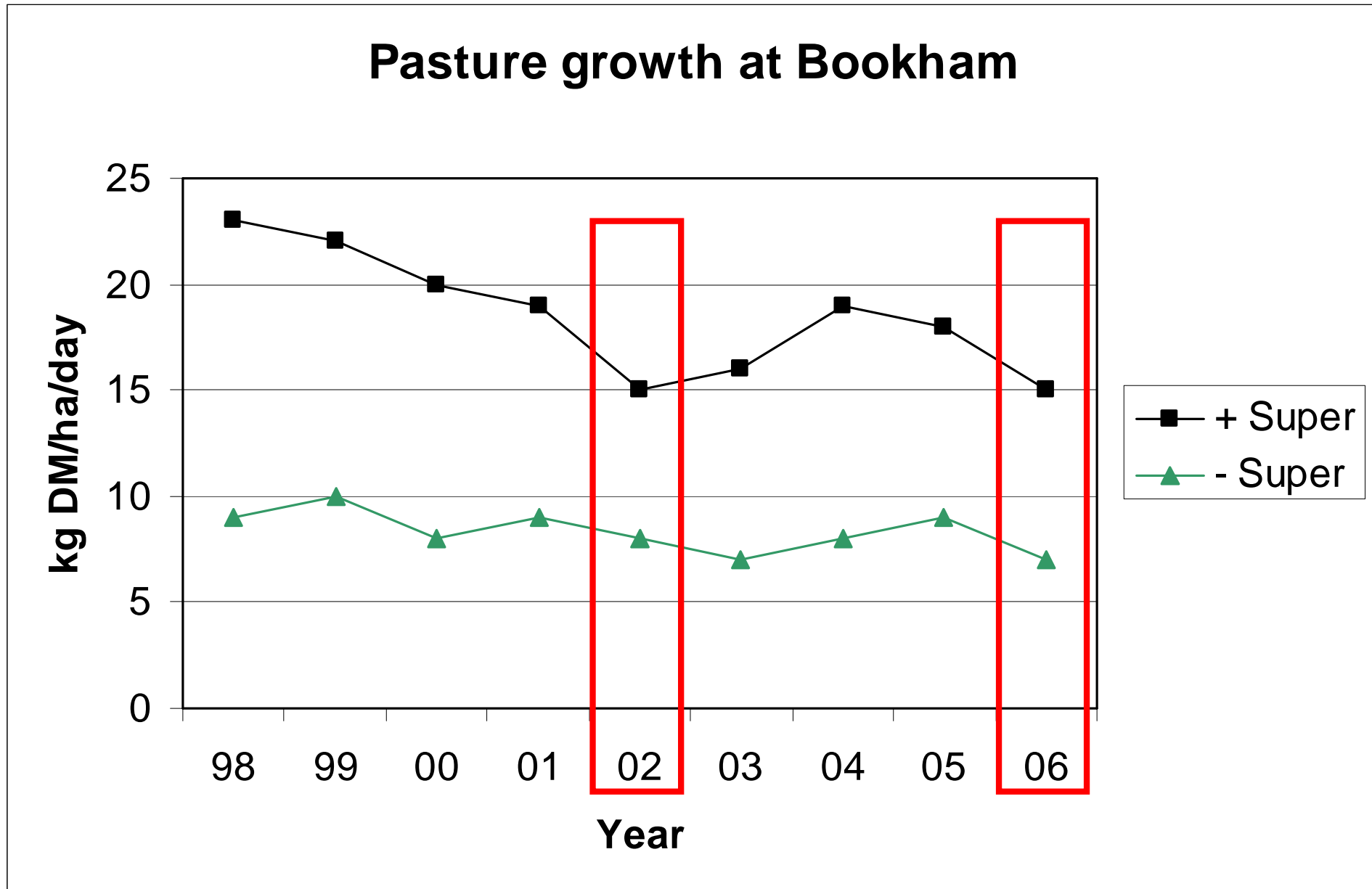
What is the $ value of the extra growth

§ Same rainfall and temperature – so the P has allowed us to use the rainfall more efficiently.

§ 19 vs 8 kg dm/day equals **1320 kg dm/ha** extra for the 4 months. Assume we use half of this **660** kg dm

§ Used **92 kg/ha/yr** of single super to achieve this difference. Using a super price of $450/t and $5.70/ha to spread this means a cost of **$47.10/ha**

§ That is a cost of **7 cents/kg** dm

§ To replace with grain you would need to buy the grain at **$63/t**

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Stocking rate response to Soil P

Difference due to soil depth, species, aspect, slope etc

Flats

Hills

Stocking rate dse/ha

Colwell P

◆ Series1

Producer training

§ "Five easy steps" booklet helps producers work through these issues

§ Includes an information booklet and spreadsheet

§ Funded by Pasture Australia and MLA

§ Has been road tested with producer groups

§ Contact MLA for a book

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Use the Best Genetics

§ This is the simple part

§ Buy the best genetics you can for your production system

§ Use the information available at sales – it does work

§ A word of caution about lamb birth weights
  – it is becoming an issue for producers putting terminals over Merinos

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Lambing Times

§ Rule of thumb – lamb 5 months before your feed base finishes if you want to finish your lambs

§ Moving away from this either increases production costs or requires changes to your system

How much lucerne is required?

§ For rainfall above 580mm you need 50 to 60 ha of good lucerne to finish the progeny of 1000 ewes
  – Works in 75 % of years

§ As rainfall drops the area of lucerne goes up

§ Increasing the area of lucerne decreases the risk of supplementation

Marking to Weaning

§ Control pasture quality between marking and weaning.

§ How?

– increase stocking rate to keep pasture below 1800 kg DM/ha

§ Why?

– can increase weaning wt by 3 to 4 kg without adding any cost to your system.

Grazing

§ Set stocking will give the highest lamb growth per day, especially if SR is matched to pasture growth rate

§ Rotational grazing will achieve app 85 % of SS growth rates

§ As paddock size increases rotational grazing improves utilisation and therefore SR

§ Matching your SR to potential PG is more important than the grazing method you use

Grazing crops and mineral supplements

§ There are issues that need to be addressed to get the best out of your feed and your animal genetics

§ Grazing wheats have the biggest issues

Harden 2005: Response to magnesium?

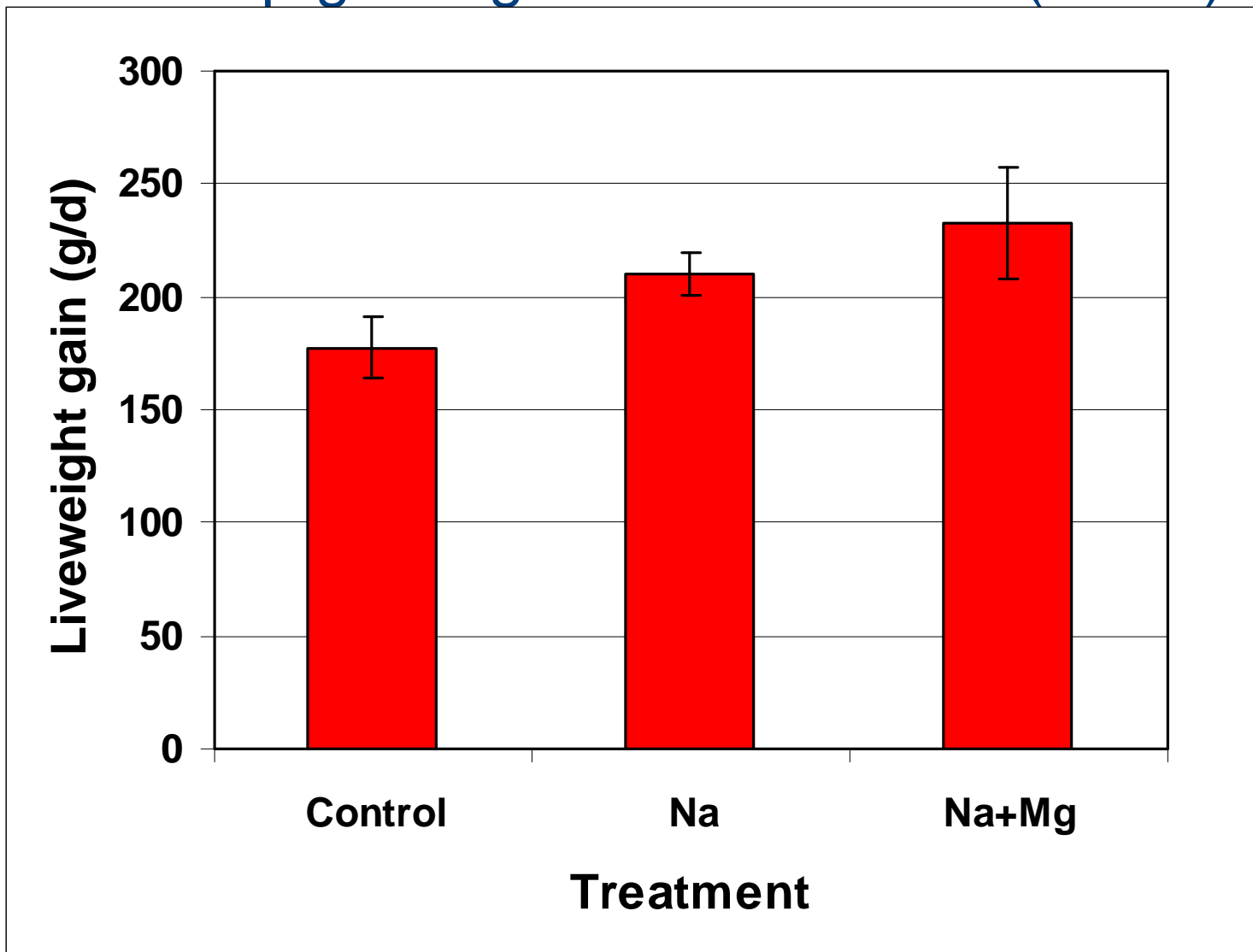No supplement   184 g/d

'Mg' supplement*   283 g/d

*2:2:1 Causmag:limestone:salt

(Wedgetail wheat OK for Ca; low Mg, high K; low Na)

Cost 1c/sheep.day; benefit 15c/sheep.day

Dove. H and McMullen. G.

Canberra 2007: Effect of Na or (Na+Mg) on weight gains of sheep grazing Mackellar wheat (33/ha)

Skills required

§ Can you assess pasture for kg DM/ha and digestibility?

§ Can you plan how many stock the paddock can run or for how long?

§ These skills help you run your system more efficiently and better manage seasonal risk

§ Prograze provides the basic skill set needed by livestock producers

    – 7000 producers have done the course in NSW since 1993

Producer Training

§ MLA has workshops to help you understand how to use the genetic information provided at ram sales to purchase the right rams for your production system

Take home messages

§ Do you know your soil targets?
- read "5 easy steps" – contact MLA

§ Are you confident about the genetics you are using?
- the information is available for you to use – ask if you are not sure

§ Use your skills in pasture assessment and pasture budgeting to achieve higher lamb growth rates at no extra costs
- training is available

§ Your aim must be to achieve as much weight gain off pasture as possible
- grain feeding lambs lowers your margins

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