

AN INITIATIVE OF

Making More From Sheep



Maximising Lamb & Weaner Performance

Geoff Duddy



It's ewe time!



Best Practice Management of Weaners

- Preparing Lambs for Weaning
- Nutrition
- Grazing cereals, brassica's and canola,
- Confinement and lot feeding,
- Sheep health
- Economics

Focusing on Efficiencies

Approximately

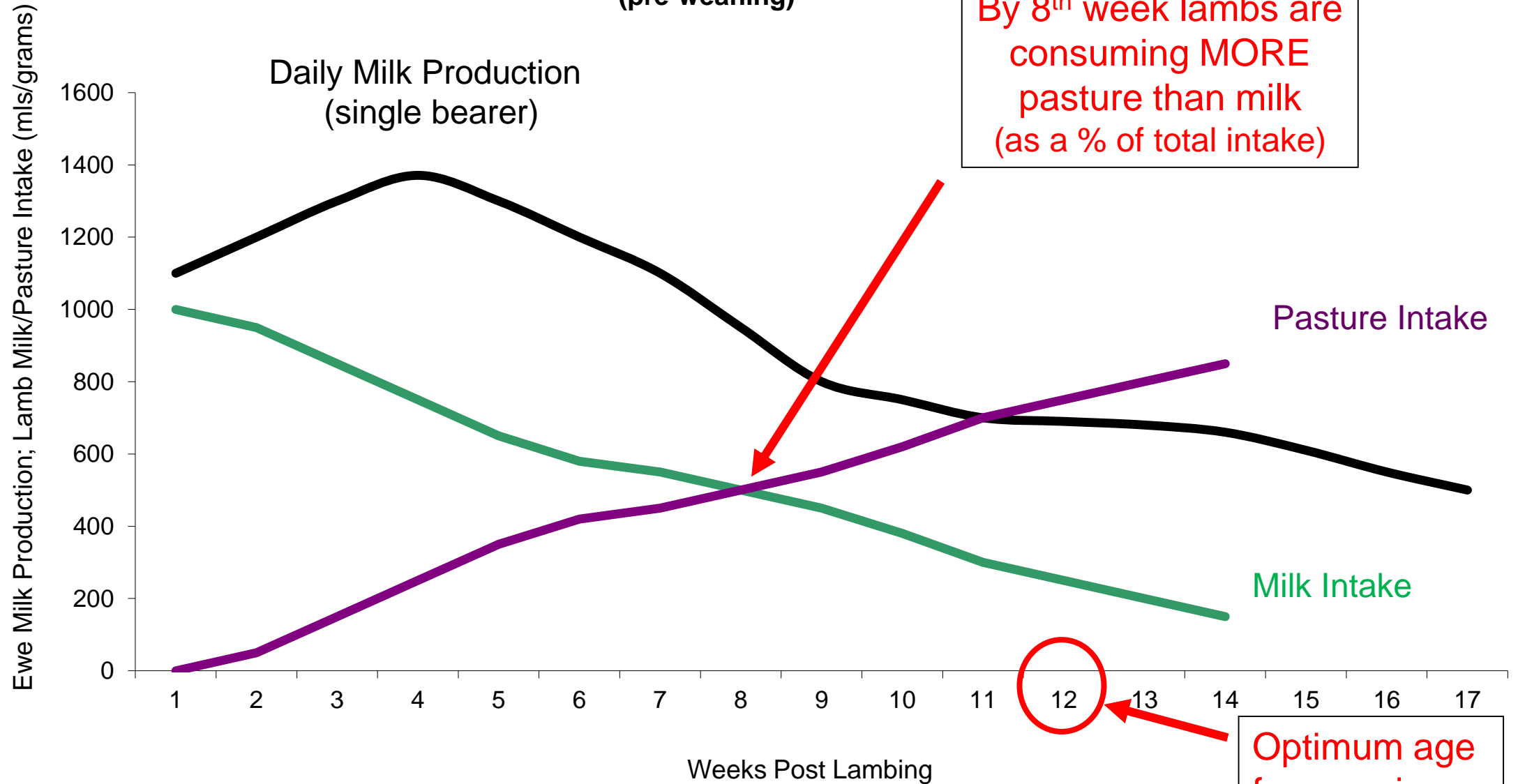
- **60%** of total annual feed requirements are required for ewe maintenance - weaning will reduce your overall DSE rate/feed requirements by ~30%
- $\frac{1}{3}$ of ewes are responsible for $\frac{2}{3}$'s of lamb losses
- **80%** of weaner mortalities occur in the bottom 20pc - identify these early and focus on meeting market targets

Preparing lambs for weaning

- Milk production peaks 3 to 4 weeks after lambing and steadily declines
- Recommended optimum weaning age is 12 weeks
 - 14 weeks after first lamb is born for a 5-6 week joining period

Milk vs Pasture Intake

(pre-weaning)



By 8th week lambs are consuming MORE pasture than milk (as a % of total intake)

Optimum age for weaning

Preparing lambs for weaning

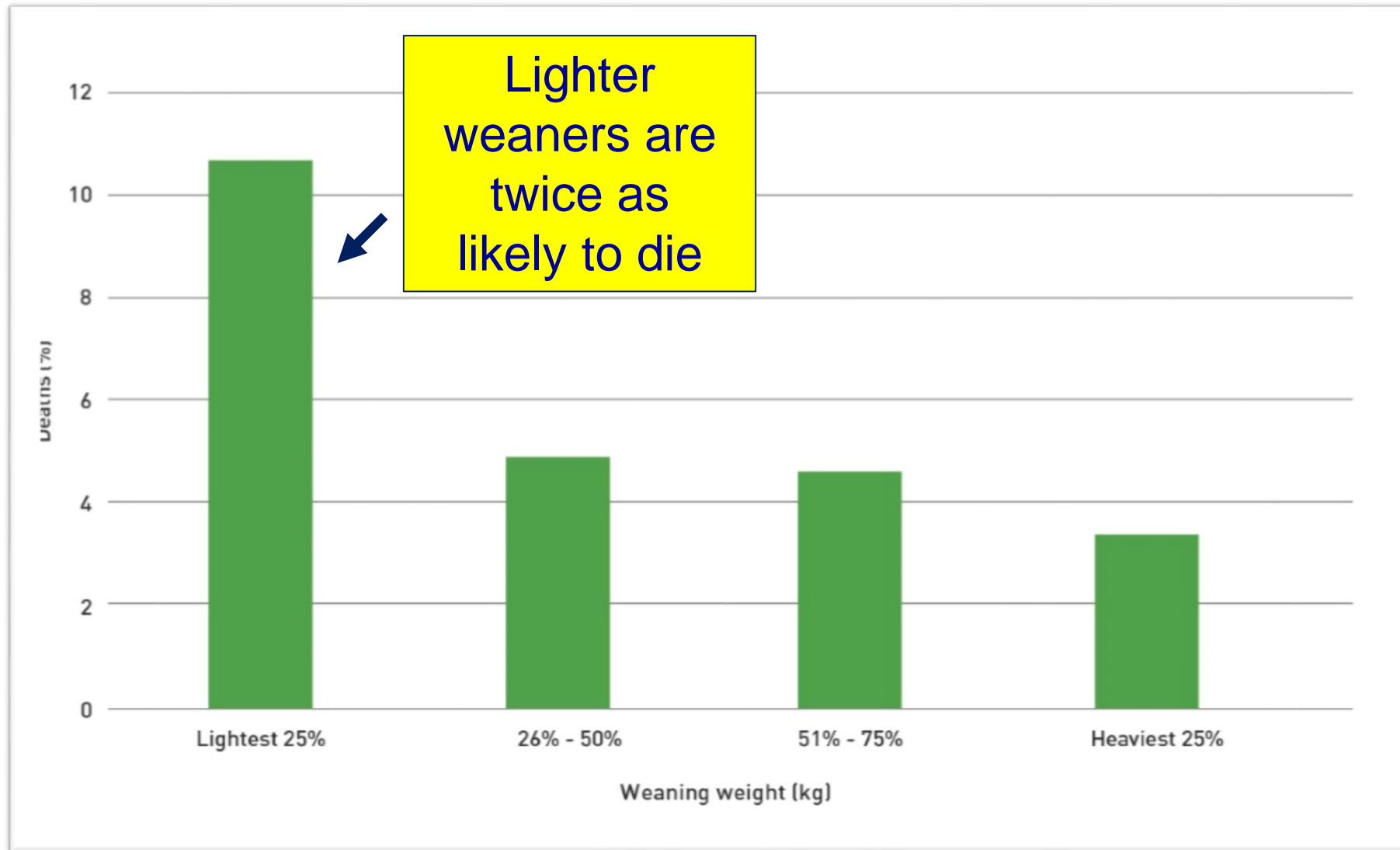
- Lambs can be weaned earlier but need to ensure high quality feed is available
- Minimum liveweight targets of
 - 15kg (merino) and
 - 18kgs (crossbreeds) can be used

Preparing lambs for weaning

Recommended Targets

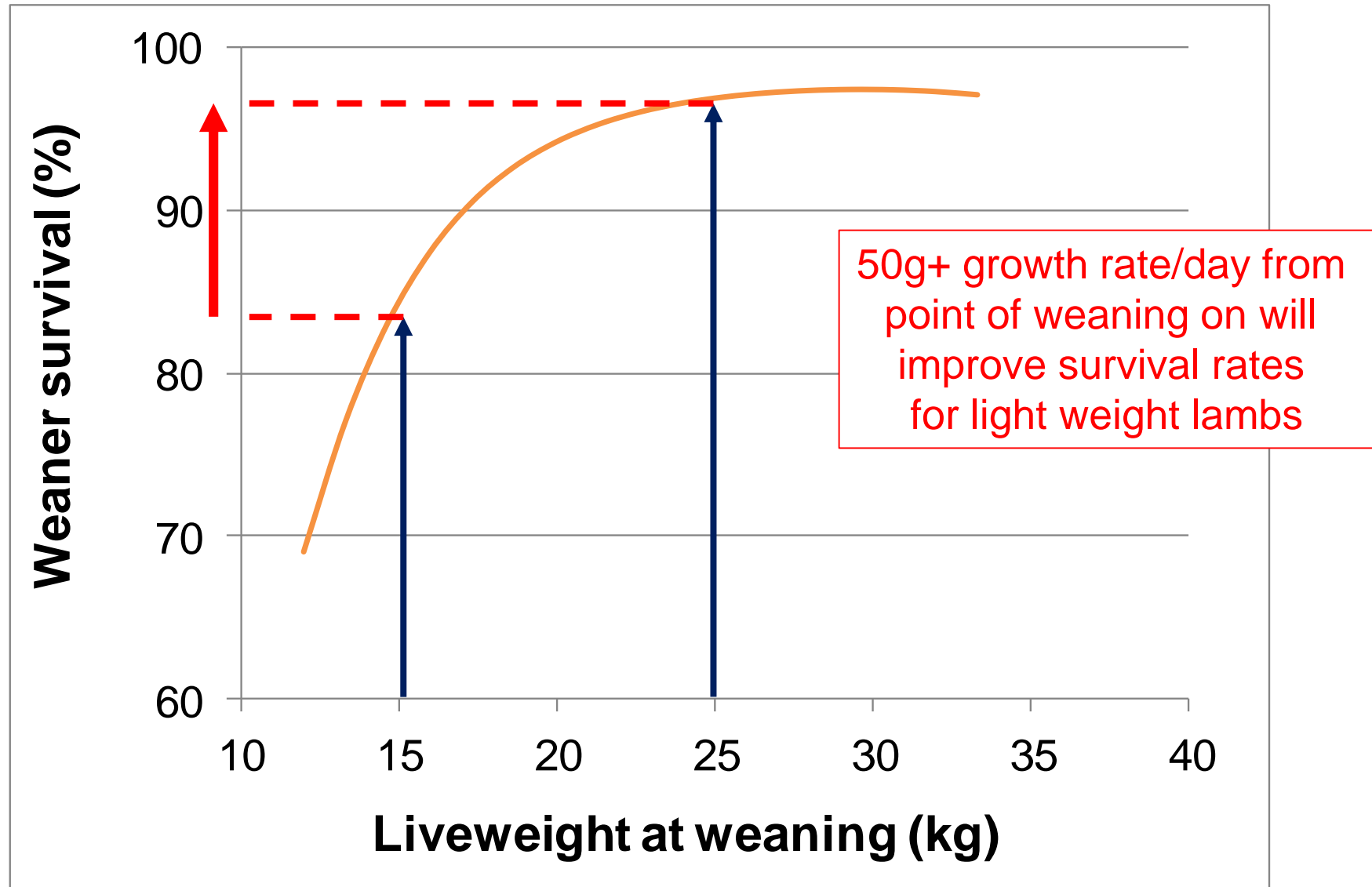
- 45% of the ewe standard reference weight (mature weight)
 - 50kg ewe = 23kg lamb liveweight at weaning
 - 60kg ewe = 27kg lamb liveweight at weaning
- 50g+ growth rate/day
 - small increases in growth rates can dramatically improve survival rates
 - faster growing and heavier weaners accumulate more body reserves

Weaning weight matters !

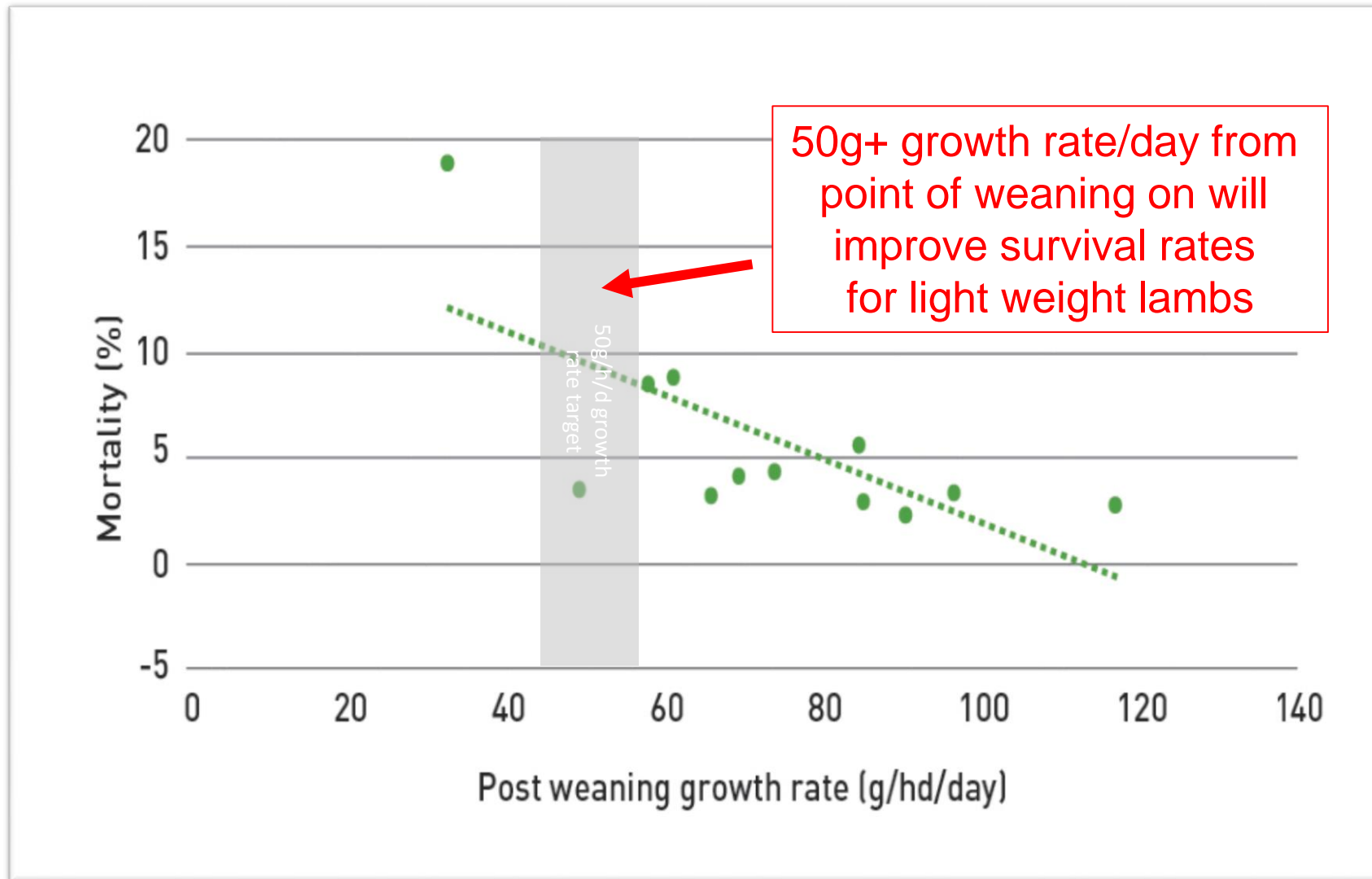


15 flocks
Southern and
Central Tablelands

Liveweight at weaning and survival rates

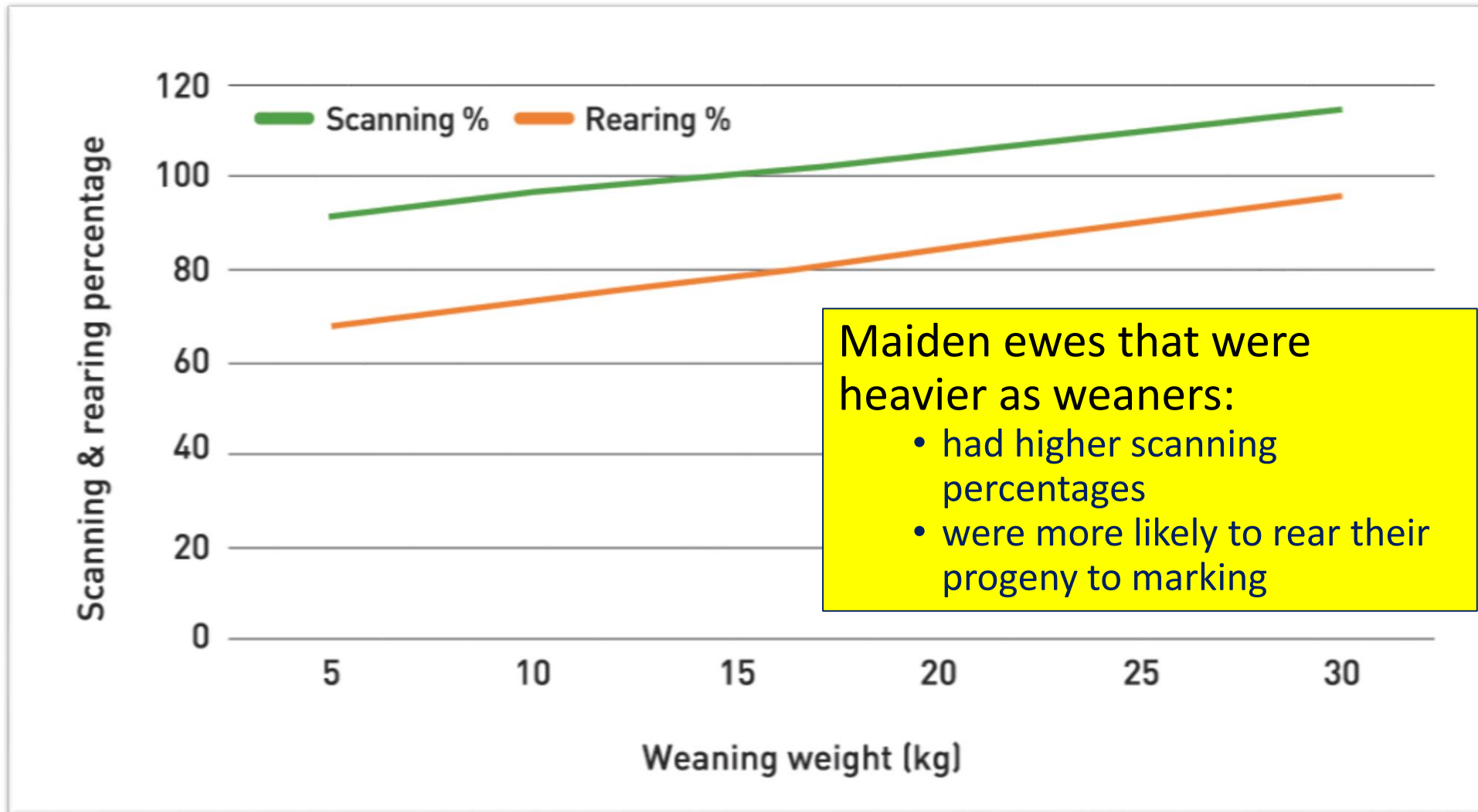


Post Weaning Growth Rate and Mortality



15 flocks
Southern and
Central Tablelands

Weaning weight and first lambing



Maiden ewes that were heavier as weaners:

- had higher scanning percentages
- were more likely to rear their progeny to marking

11 flocks (2006)
6 flocks (2007)

Central Tablelands

Weaning Options

Consider

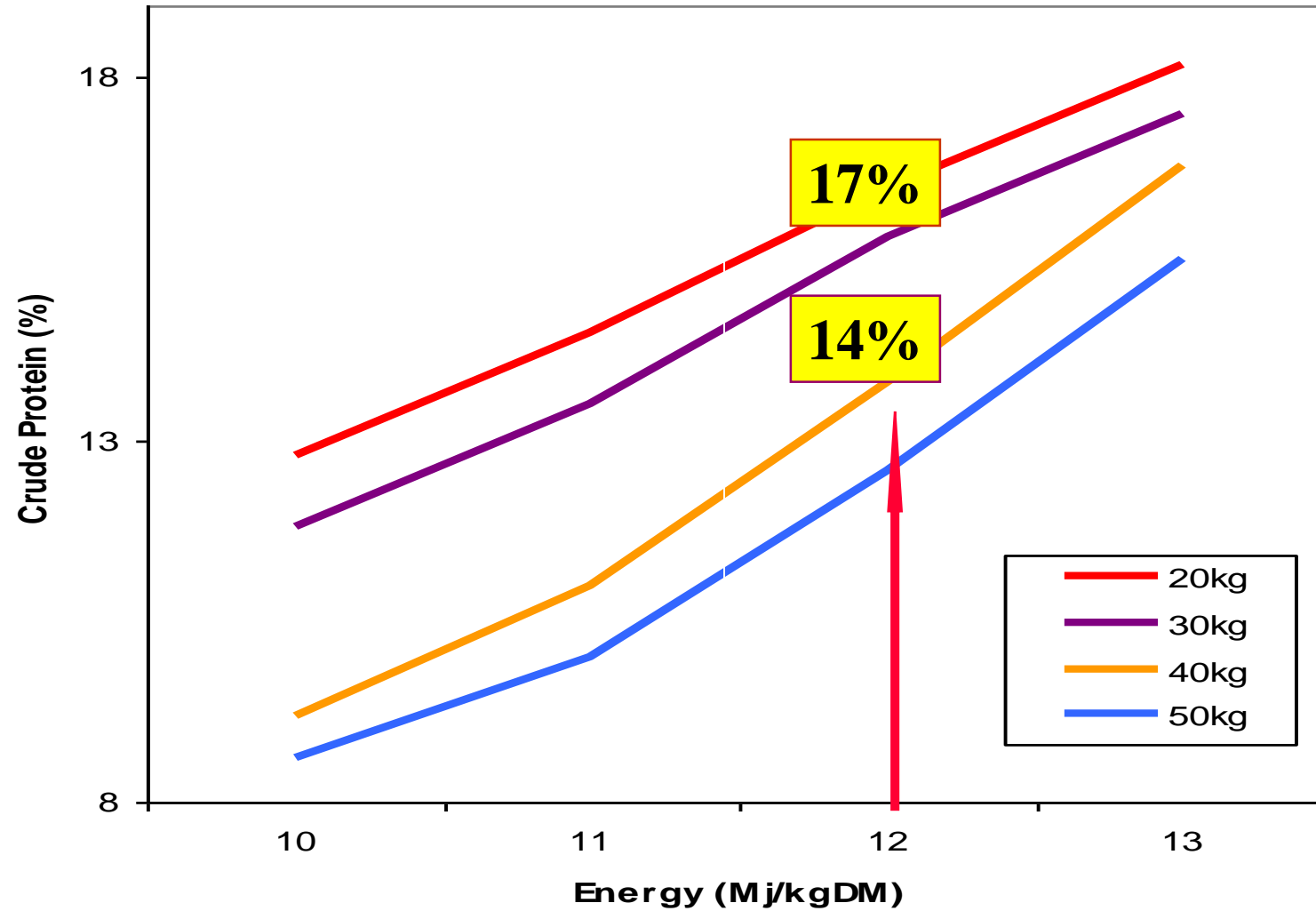
- Returning lambs to their lambing paddock
- **Split weaning** – wean heavier lambs, wean lighter lambs later
- **Cross-weaning** – lambs aren't with their dams but have adult ewes with them post-weaning
- Running 5% adult sheep with weaned lamb mobs
- Yard weaning

Nutrition

Minimum energy and protein requirements

- Energy is critical - target 10+MJME/kg/day
- Protein is needed for
 - muscle development,
 - appetite and
 - wool production
- For most lambs protein intake should be 2 units more than their energy intakes – even more if lambs are <25kg

Protein needs relative to live weight and energy intake



Source: (Grazfeed® 2004).

Protein is Important when feeding Lambs

Ration Energy M/D	Lamb Live Weight and Crude Protein Requirement		
	CP% @ 20 kg Lwt	CP% @ 30 kg Lwt	CP% @ 40 kg Lwt
13	19.3	16.1	13.8
12	17.5	14.7	12.9
11	15.7	13.3	11.9
10	14	11.9	10.8
9	12.4	10.6	9.6

Genetics

Genetics Pays – Growth Rate

Geoff and Dennis Hogan (Glen Innes)

- On-farm evaluation of Sire Post Weaning Weight ASBV
- Used High (top 10%) and Average PWwt sires

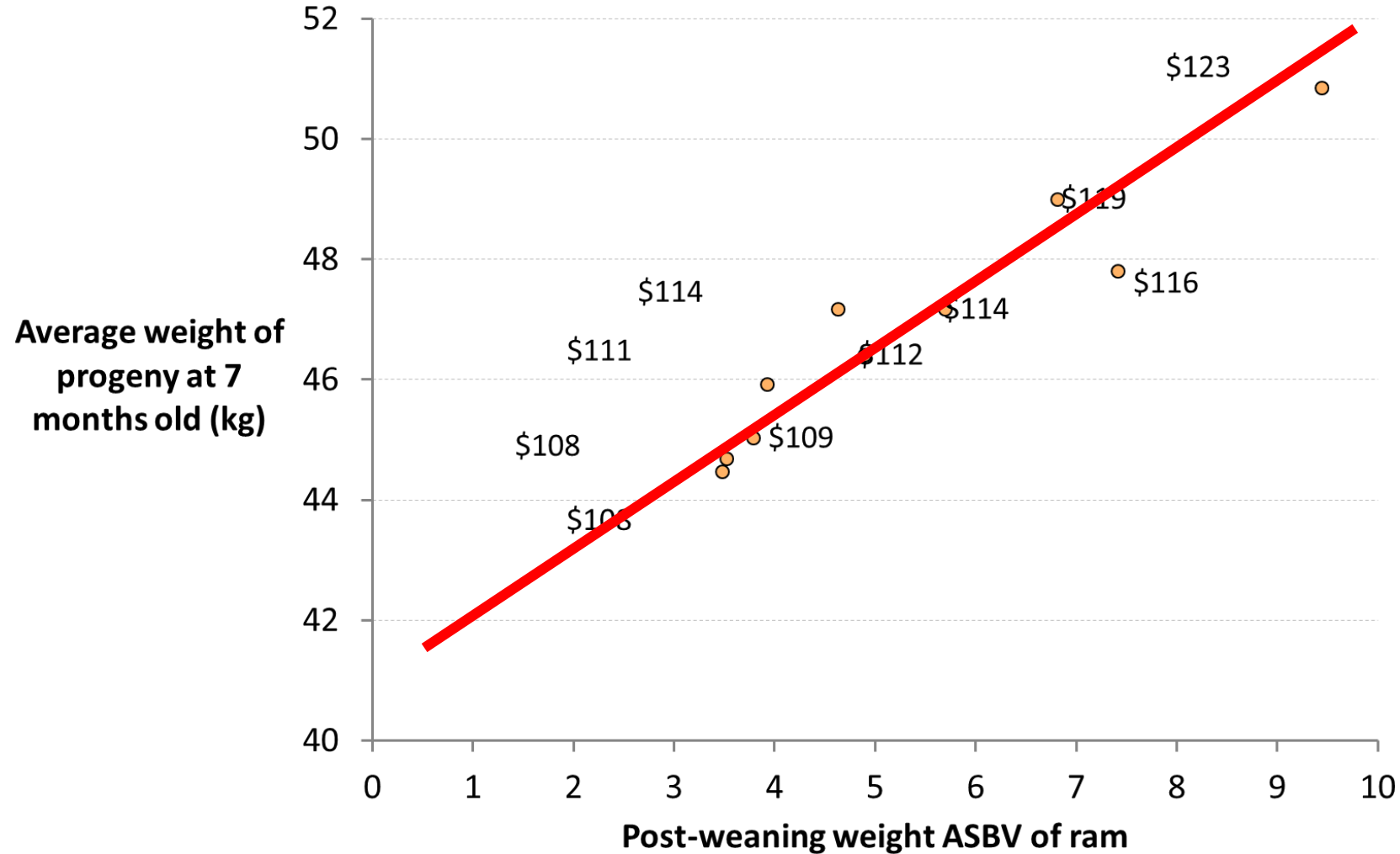
High PWwt sired lambs :

- 5.1kg heavier at slaughter (extra 2.5kg carcass weight)
- \$15.50 more per lamb

If you average 50 lambs per ram at \$6.00/kg you will generate an

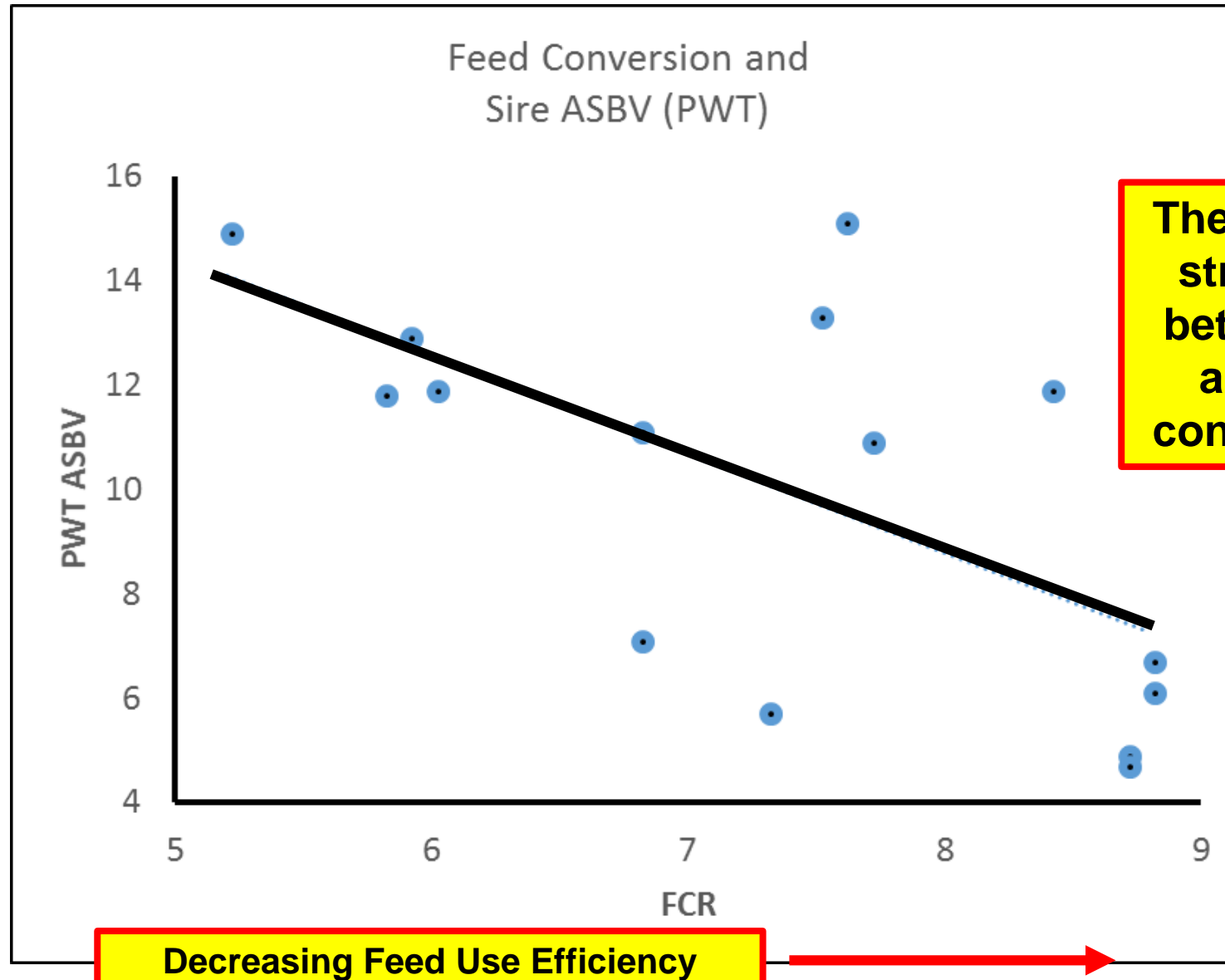
- extra **\$750**/ram in Year 1 or
- Extra **\$3000**/ram **over its lifetime** (4 matings)

Genetics Pays – Growth Rate



Works in Merino's too !!

Genetics Pays – Growth Rate/FCR

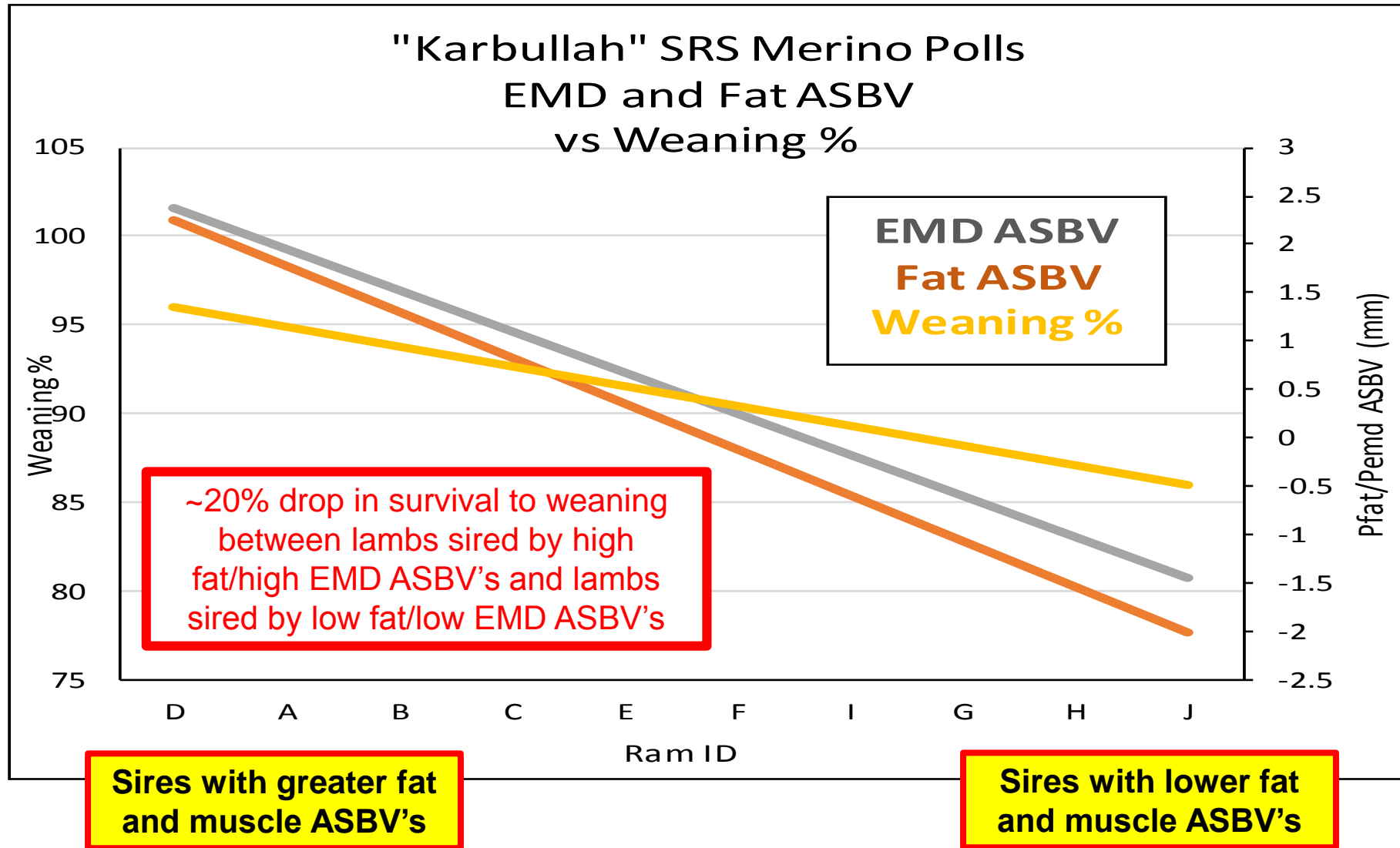


Increasing Post Weaning Weight ASBV

There is a reasonably strong relationship between growth rate and a lambs feed conversion efficiency

Decreasing Feed Use Efficiency

Genetics Pays – Fat and Muscle



Creep Feeding



Creep Feeding



Preparing lambs for weaning

Creep Feeding

Creep gates - 25-30cm (~10"-12") vertical spacings
- horizontal bar 45cm (~18") off-ground

- Increases lamb energy and protein intakes, improving growth rates
- Reduces demand on pasture and ewe
- Reduces costs (not feeding expensive feeds to ewe)

Imprinting



Imprinting

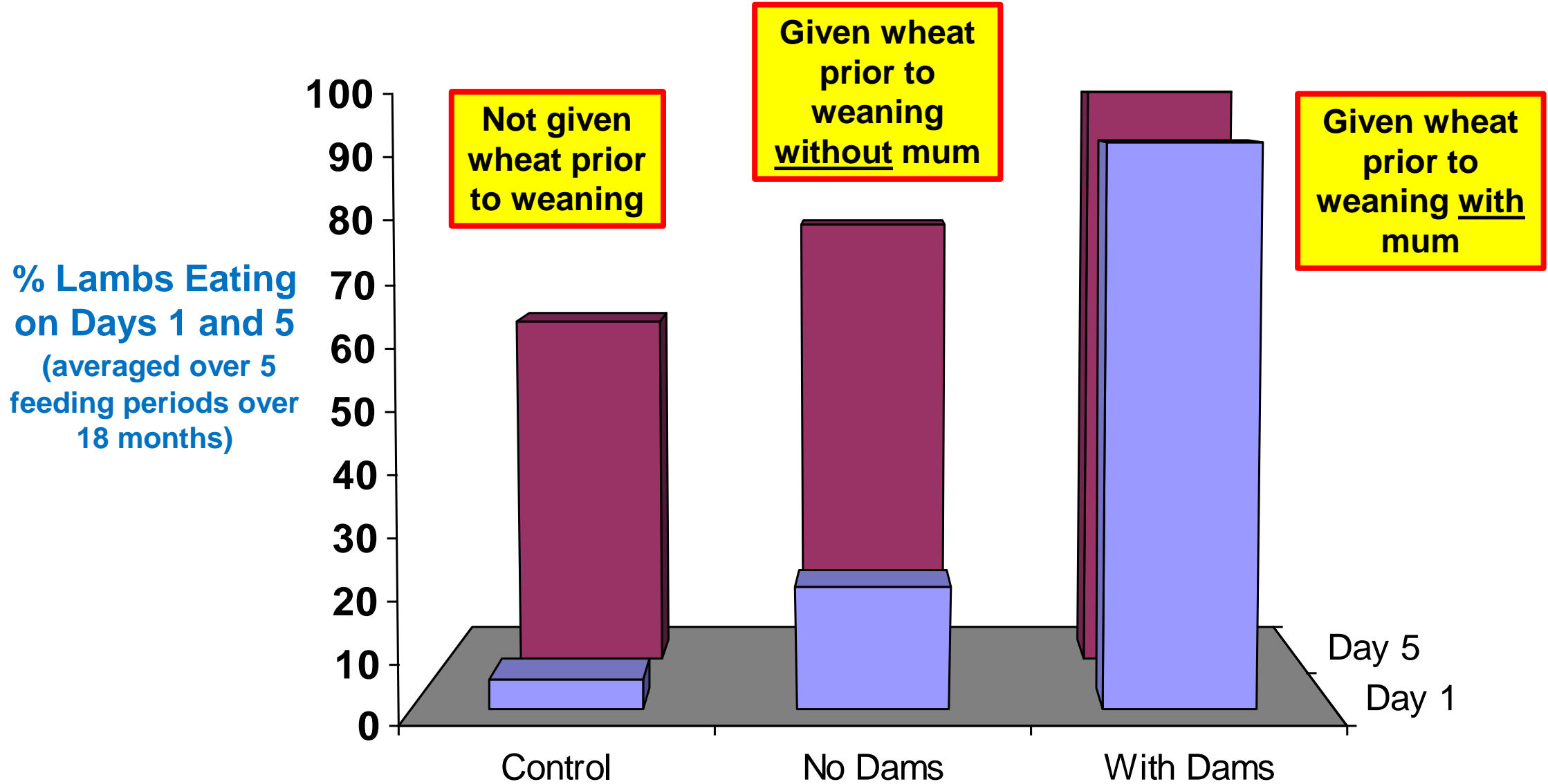


Preparing lambs for weaning

Imprinting

- Sheep are neophobic (scared of new or novel things)
- There are benefits with pre-training lambs prior to weaning - a lifetime recognition and increased acceptance
- Minimum of 3-4 feeds (50g/ewe) over 10-14 days prior to weaning
- Target 90% of lambs feeding

Percentage Eating (Days 1 and 5)




Grazing Crops and Forages

Pre-Grazing Recommendations

Pre-grazing recommendations include:

- vaccinate, drench etc
- ensure stock are ‘full’ before grazing
- monitor stock
- supplements (minerals, fibre, grain)



Maintains ‘effective fibre’ levels
Reduces rate of gut flow
Increases B₁₂ and Mg absorption
Provides additional Vitamin D

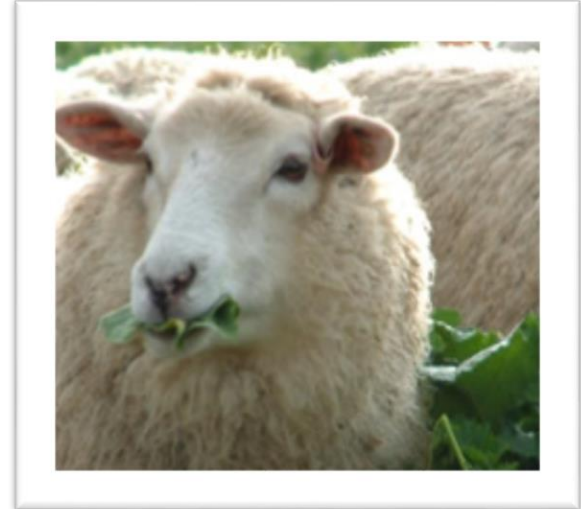
Grazing Crops and Forages



Grazing Crops and Forages

- Fill feed gaps
- Allows pastures to recover
- Provide quality green feed in short time
- Have higher winter growth rates than most pastures
- Grain and grazing options

Grazing Crops and Forages



- Provide high quality, palatable feed:
 - Protein (17-30%)
 - Energy (10-12 MJ/kg DM)
 - Digestibility (70%+ during vegetative stage)
 - Re Minerals
 - Calcium and Phosphorus generally okay
 - Magnesium and Sodium low
 - Potassium high in cereals

Effect of mineral supplements on sheep liveweight gains

Livestock	Supplement	Increase in liveweight gain (%)
Sheep	Magnesium	24 to 25
	Sodium	18 to 37
	Magnesium and sodium	31 to 54

Magnesium is needed for

- metabolism of carbohydrates, fat & protein
- nerve conduction and muscle contraction

High K, Ca, P, N decrease availability

High Na and carbohydrates increase Mg availability

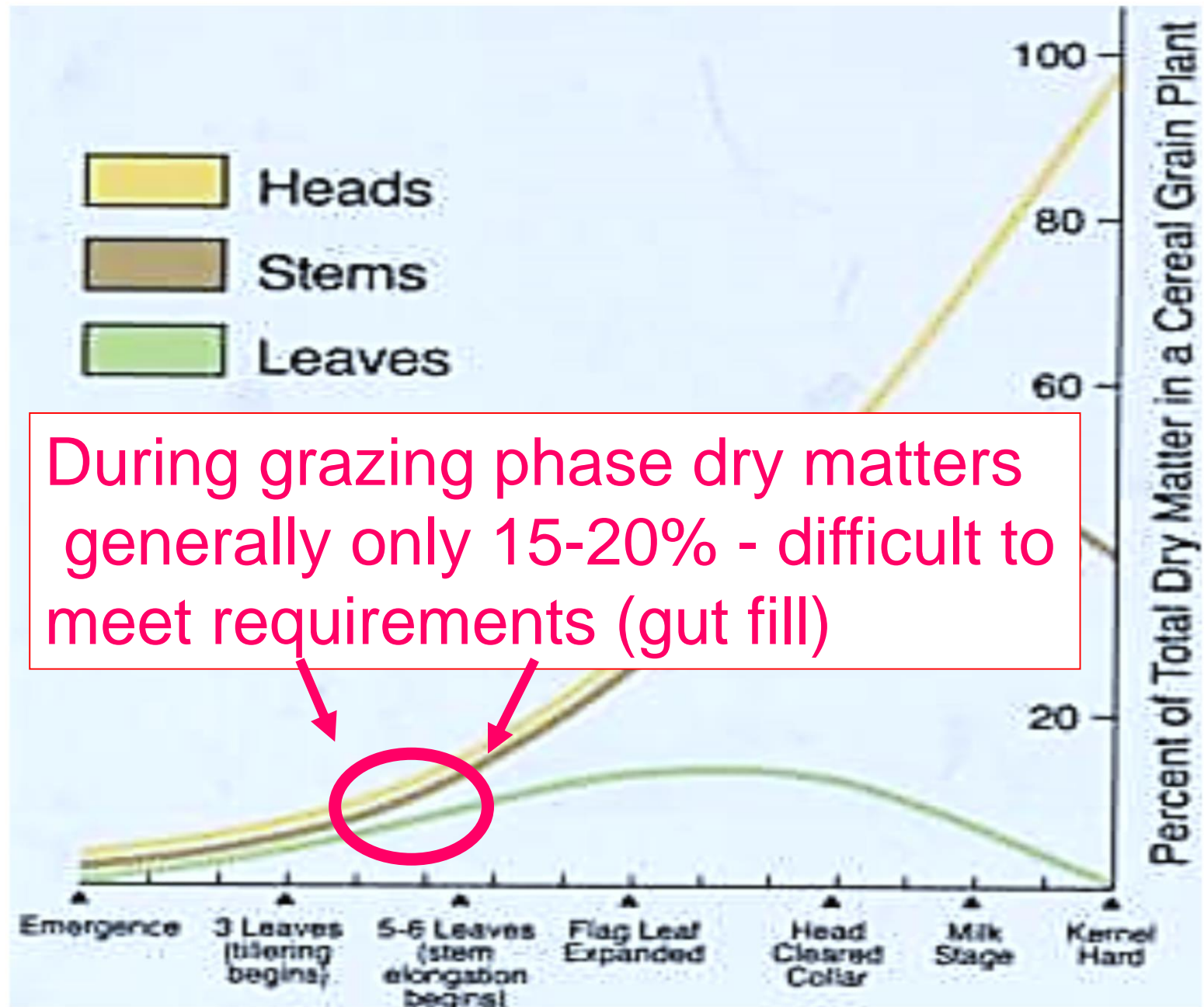
Grazing Winter Cereals

- Begin grazing when
 - plants are well anchored/tillering stage (Z21-29)
 - Minimum of 1tonne DM/ha (high as top of riding boot)
- This should occur 6-8 weeks after emergence
- Stocking rates of 20-30 DSE and growth rates in excess of 350g/d (lambs) are possible

Grazing Cereals - Intakes

Stock Class	Kg of forage dry matter removed / head / day	Total Intake when 73% DM	
Ewes and lambs (6 weeks)	3.2	4.4kg	~7% of lwt for a 65kg unit
Weaned lambs (30kg)	2.0	2.8kg	~9% of lwt

Sustainable continuous grazing for oats (2000kgDM/ha), 20cm tall, 73% DDM, 25% spoilage, 30kg DM/day crop growth



Grazing Brassicas and Canola

Generally

- high in protein (15-25%),
- energy (11-14Mj) and
- digestibility (70+%)
- Best if crash/rotationally grazed
- Growth rates generally 200-250g/h/d
- Dry matter intakes and health issues may be a concern

Grazing Brassicas and Canola

Forage Rapes

- Allow plant to mature before grazing – risk of photosensitivity

Brassicas

- Graze 6-8 weeks post sowing – risk of ‘red water’
- high in calcium, moderate to low in phosphorus
- low in magnesium, sodium, copper, manganese and zinc

Canola

- Will depend on sowing time, grazing periods and harvest goal

Health

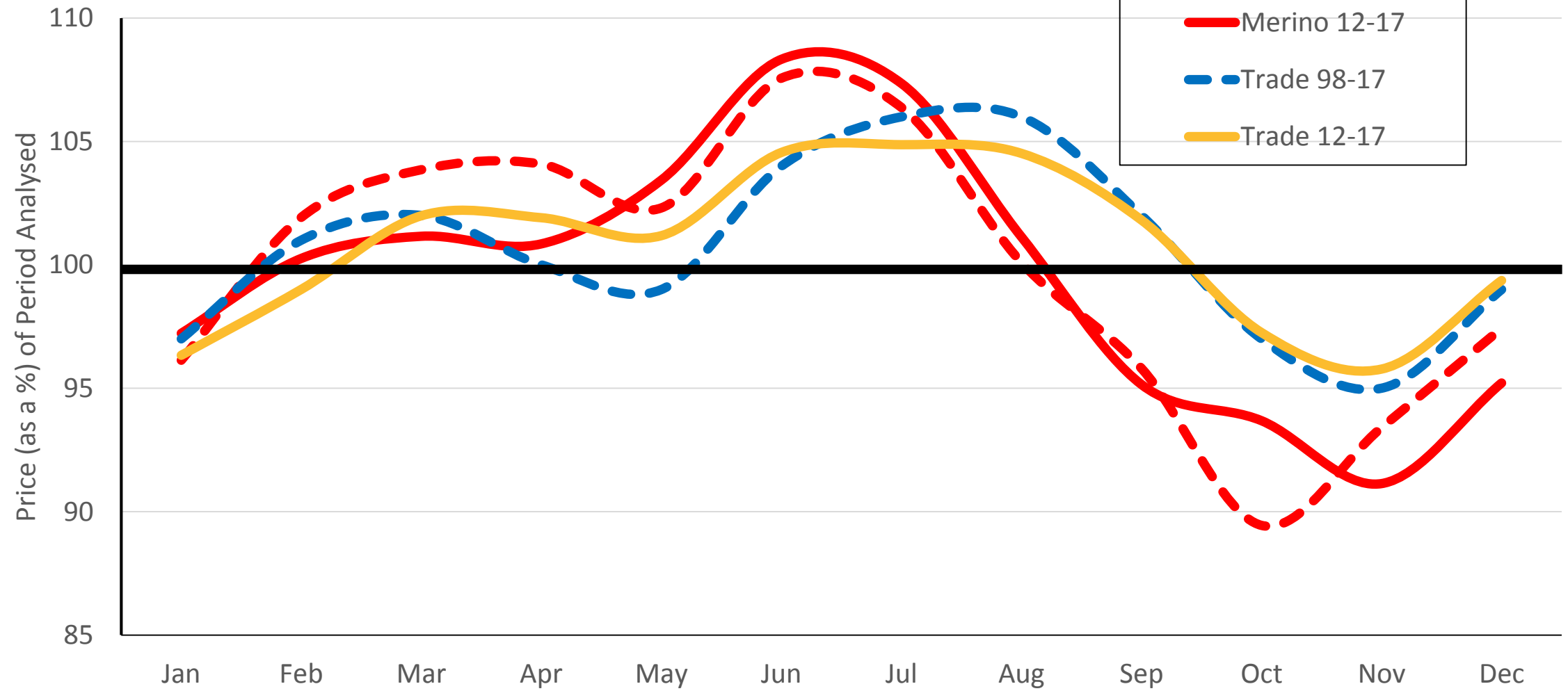
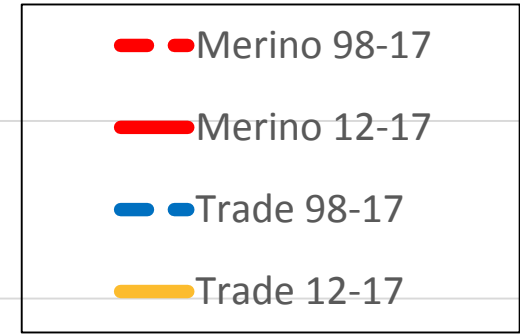
	Cereal	Canola	Brassica	Lucerne	Ryegrass
Abscess	√			√	
Acidosis	√	√	√	√	√
Blindness		√	√		
Bloat	√	√	√	√	
Ca deficiency	√				
Constipation	√	√	√	√	√
Fertility		√	√	√	
Goitres		√	√		
Laminitis	√	√	√	√	√

	Cereal	Canola	Brassica	Lucerne	Ryegrass
Meat taints		√	√	√	
Mg deficiency	√	√	√	√	
Nitrate Poisoning	√	√	√	√	√
Photo-sensitivity		√	√		√
Prolapse	√	√	√	√	√
Pulmonary Oedema		√	√		
Pulpy Kidney	√	√	√	√	√
Redgut				√	
Red Water			√		
Scouring	√	√	√	√	√

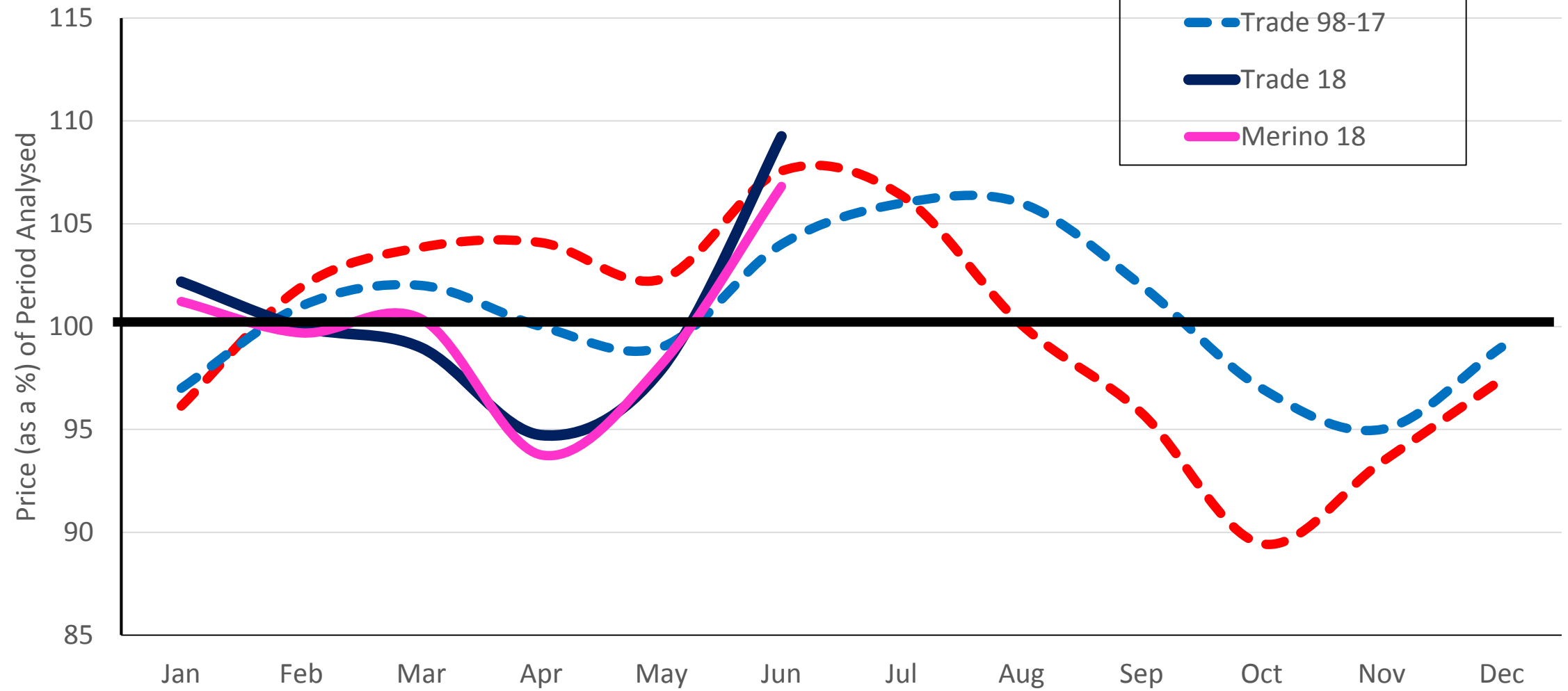
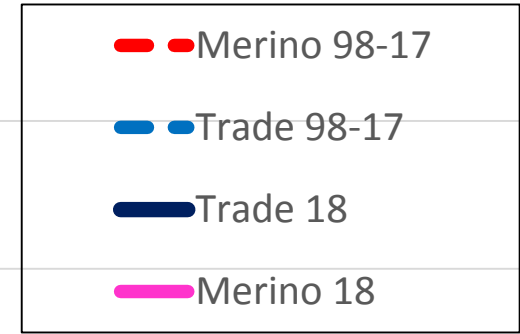
Economics

To Feed or Sell ?

ES Trade vs Merino Lamb
Seasonal Price Variation
(1998 - June 2018)

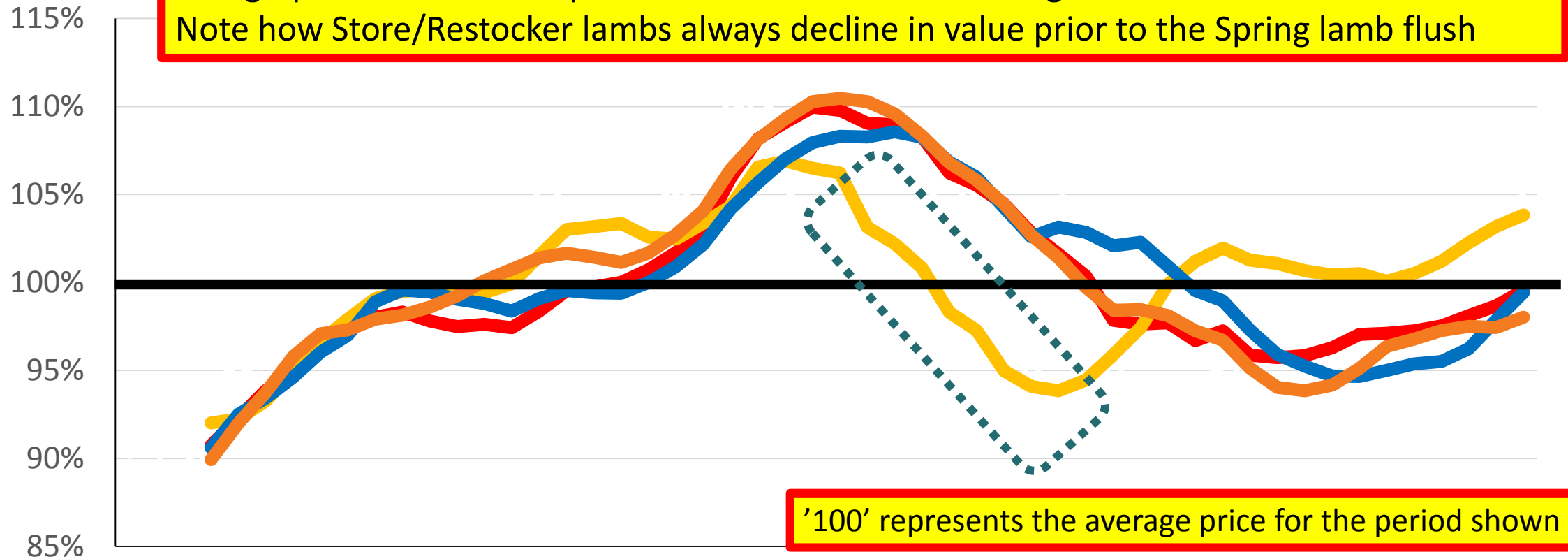


ES Trade vs Merino Lamb Seasonal Price Variation (1998 - June 2018)



ES Lamb Variation from Annual Mean (2013-2017)

This graph illustrates how prices for each of the lamb categories have varied since 2013. Note how Store/Restocker lambs always decline in value prior to the Spring lamb flush



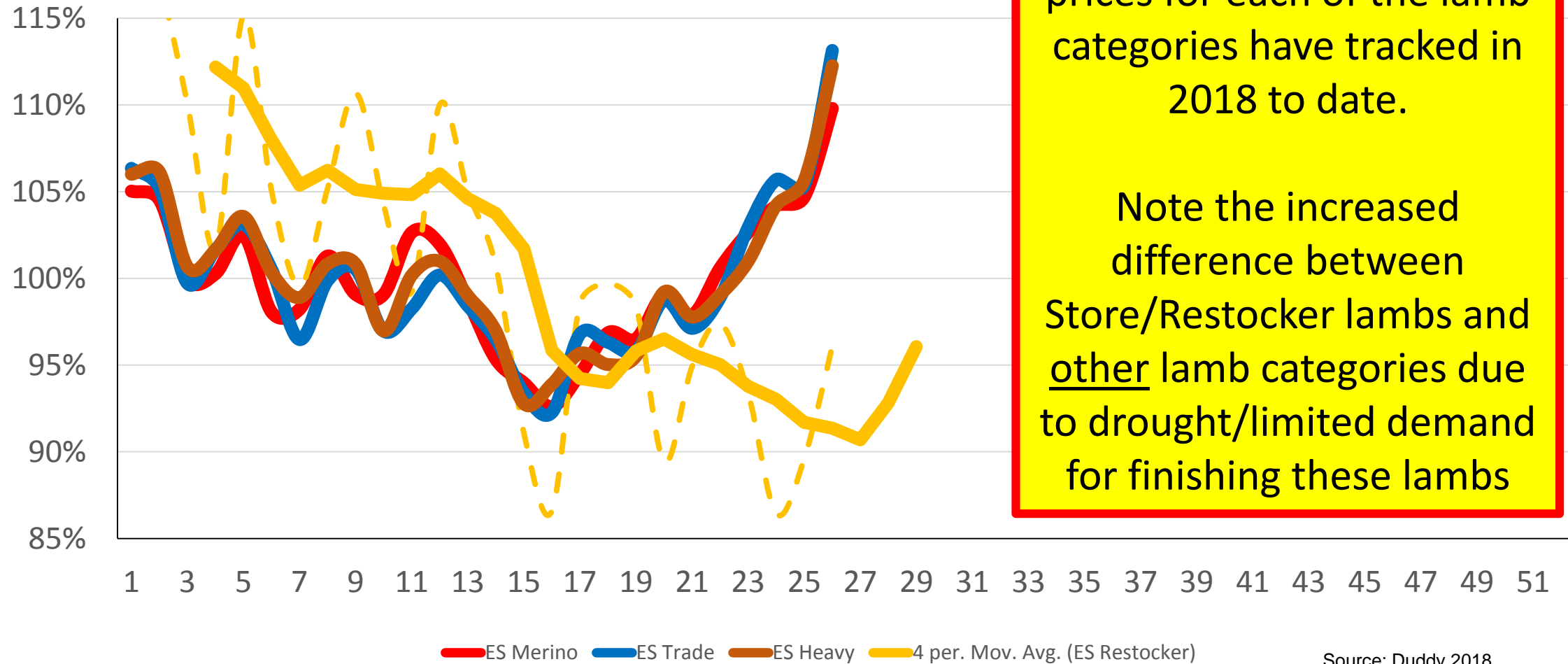
'100' represents the average price for the period shown

— 4 per. Mov. Avg. (ES Merino)
— 4 per. Mov. Avg. (ES Trade)

— 4 per. Mov. Avg. (ES Restocker)
— 4 per. Mov. Avg. (ES Heavy)

Source: Duddy 2018

ES Lamb Variation from Annual Mean (To June 2018)



To Feed or Sell ?

The high store lamb values have made finishing lambs on grain-based diets reasonably risky in recent years

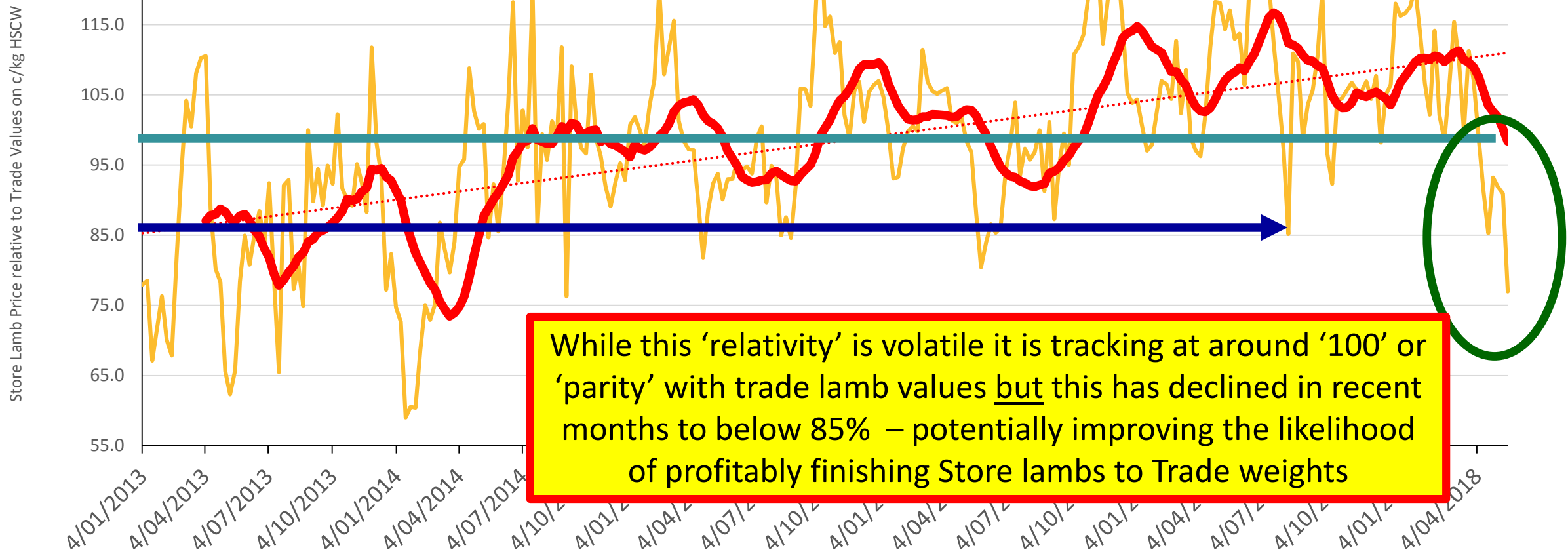
Store lamb values need to be trading at or below:

- **85%** (relative to trade values) in feedlots
- **95%** (relative to trade values) on pasture

to minimise risk and provide opportunities for reasonable profit margins

NSW Store relative to Trade Lamb Prices Off-set 6 weeks (2013 - June 2018)

This graph illustrates Store lamb values relative to Trade lamb values 6 weeks later



While this 'relativity' is volatile it is tracking at around '100' or 'parity' with trade lamb values but this has declined in recent months to below 85% – potentially improving the likelihood of profitably finishing Store lambs to Trade weights

Working it out.... c/kg NOT \$/head !!

17kg Store lamb,
\$100 landed on-farm

23kg Trade lamb,
\$166 (gross) sold

\$100 (\$6 skin included)

\$166 (\$10 skin included)

$$17 = 588 \text{ c/kg}$$

$$23 = 721 \text{ c/kg}$$

$$\frac{588}{721} = 0.82$$
$$= 82\%$$

Do NOT use \$/hd to work out this 'relativity'. If you did the value would be 60%. The 'relativity' is 82% when using c/kg values

SHEEP/LAMB Feedlot Calculator



Version 4.1

Written by G. Duddy, S. Semple and D. Stanley

For further information

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phone 0427 007490

BASIC Click to start

ADVANCED Click to start

View Instructions (ADVANCED)

A basic cost of production calculator with no nutrition information

An advanced cost of production calculator with nutrition information

Recommended prior to using program for first time

Use the **VIEW** option to adjust each page (normally from 70 to 120%) to fit your monitor.

For other information **CLICK** on button

Feedlotting Lambs Primefacts

The CRC for Sheep Industry Innovation

Practical Wisdom Sheets

NSW DPI

Primefacts

The Sheep/Lamb Feedlot Calculator can be used to accurately predict profitability for feedlotting. In addition it can be used for calculating outcomes when using drought lots or for the live sheep trade where intakes may be restricted. Experienced users of this calculator can also use it for supplementary feeding predictions as pastures can be entered in the other feeds section.

Grazing vs Feedlot Economics

Background Info:

- 800 home-bred 35kg lambs, (\$100 on-farm)
- Lot fed vs cereals vs brassica/canola pastures
- **Lot fed**
 - barley/lupins and 14% pasture hay
 - lamb growth rate - 300g/h/d (50 days on feed)
- **Pastures**
 - 20% pasture hay
 - lamb growth rate - 250g/h/d (60 days on feed)
- Sold for 650c/kg plus \$10 skin (\$153.50 gross)

Grazing vs Feedlot Economics

Background Info:

- **Lot fed**
 - barley/lupins and 14% pasture hay
 - lamb growth rate - 300g/h/d (50 days on feed)
- **Pastures**
 - 4 establishment costs/ha used (\$150 to \$225/ha)
 - 2 yields/ha (3.5 and 5t/ha for brassicas; 2.5 and 3.5t/ha for cereals;
 - Dry matter during grazing stage 30% (cereals) and 45% (brassicas)
 - 70% pasture usage (30% trampling, soilage etc)
 - 3 potential intake ranges from 2.5% of liveweight up to 4.5% of liveweight

Grazing vs Feedlot Economics

	Cereals				Brassica/Canola				Feedlot
Cost/ha (\$/ha)	150	175	200	225	150	175	200	225	-
Yield/ha (kg)	3500		2500		5000		3500		-
DM (%)	30%				45%				90%
Usable DM/ha (kg)	735		525		1575		1103		95%
As Fed Cost (range)	\$43 - \$90				\$34 - \$64				\$359
DM Cost (range)	\$204 - \$429				\$95 - \$204				\$398
Intake (% live weight)	2.5%	3.5%	4.5%		2.5%	3.5%	4.5%		3.5%
Intake (as fed)	9.6	13.5	17.4		9.6	13.5	17.4		1.65
Intake (DM basis)	4.3	6.0	7.7		4.3	6.0	7.7		1.49

To Feed or Sell ?

Using **Grain-based feedlotting** values in the
Sheep CRC Feedlot Calculator
with a

- ration cost of ~ **\$398**/t DM basis (22% of total costs)
- transport, commission, health treatments etc (~ 9% of costs)

The - expected profit margin was **\$10.80** per lamb
- breakeven was **610c**

To Feed or Sell ?

Using **Brassica pasture** values in the
Sheep CRC Feedlot Calculator
with a

- ration cost of ~ **\$209**/t DM basis (16% of total costs)
- transport, commission, health treatments etc (~ 10% of costs)

The - expected profit margin was **\$20.99** per lamb
- breakeven was **555c**

Grazing vs Feedlot Economics

	Cereals	Brassica/Canola	Feedlot
Store vs Feed (% of costs if intake 3.5% of liveweight)	71% vs 17% 67% vs 21%	74% vs 13% 72% vs 16%	67% vs 22%
Profit – 2.5% intake	\$20.13 - \$25.59	\$27.20 - \$36.94	
Profit – 3.5% intake	\$11.09 - \$18.74	\$20.99 - \$25.38	\$10.80
Profit – 4.5% intake	\$2.05 - \$11.88	\$14.77 - \$20.42	

Take Home Messages

- Creep feeding is an efficient way to supplement lambs
- Know stock feed and mineral requirements.
- Grazing winter cereals and fodder crops can help fill a feed gap with high quality, palatable feed
- Monitor weaner health carefully
- Consider the use of containment areas
- Do your sums

References

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