FEEDING LIVESTOCK IN DRY TIMES

BIGG – WORKING WITH THE SEASON WORKSHOP

Presented by: **Hamish Dickson – AgriPartner Consulting**

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SESSION

- Feed budgeting – matching pasture available with demand
- Managing livestock condition
- Supplementary feeding strategies
- Grazing failed crops
- Containment areas, ground cover and water
- Questions

JUSTIFYING THE EFFORT

- What are your key business targets?
  - 5 year goals
  - Labour efficiency (DSE/FTE), gross margin per DSE, income from wool vs meat ($/hd), meat:wool ratio, ROI %
  - Is there a plan? *"A goal without a plan is just a wish"*
  - At what cost?

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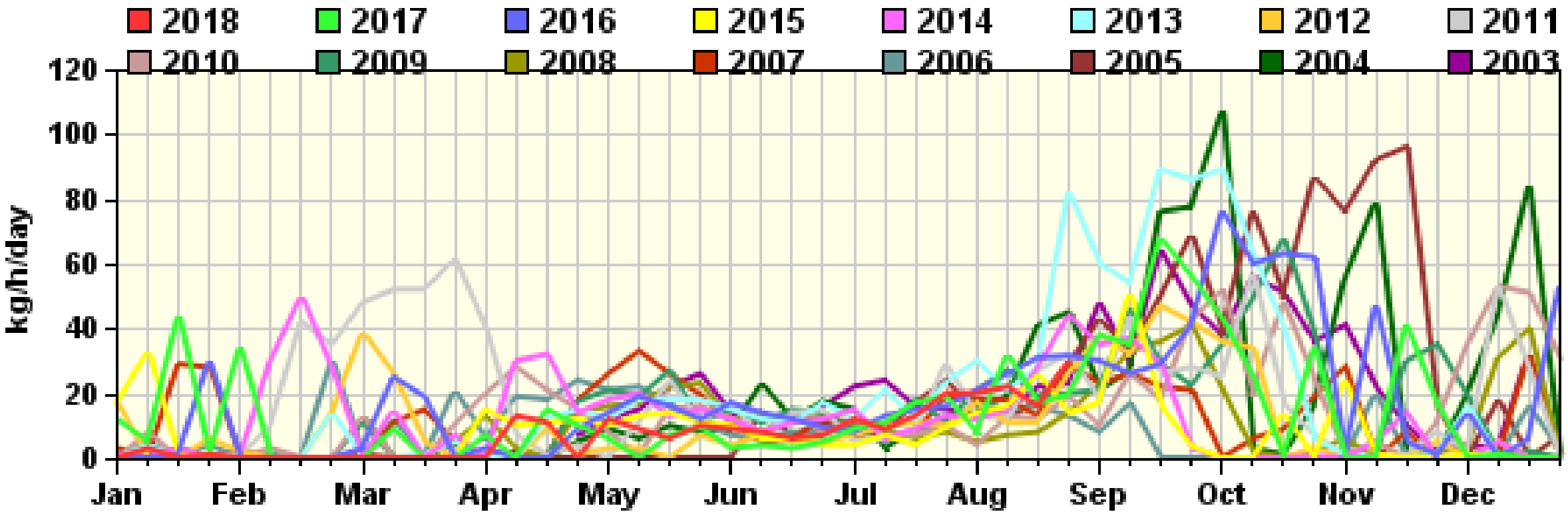
Barossa (DC) PGR Comparisons



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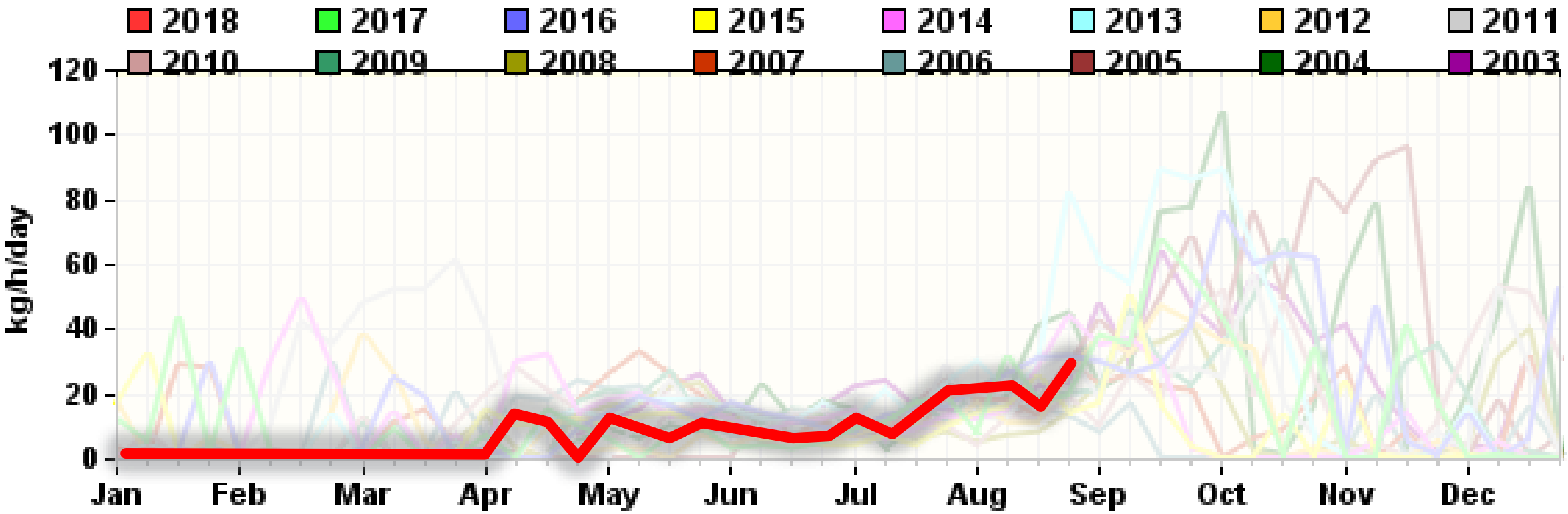
Barossa (DC) PGR Comparisons



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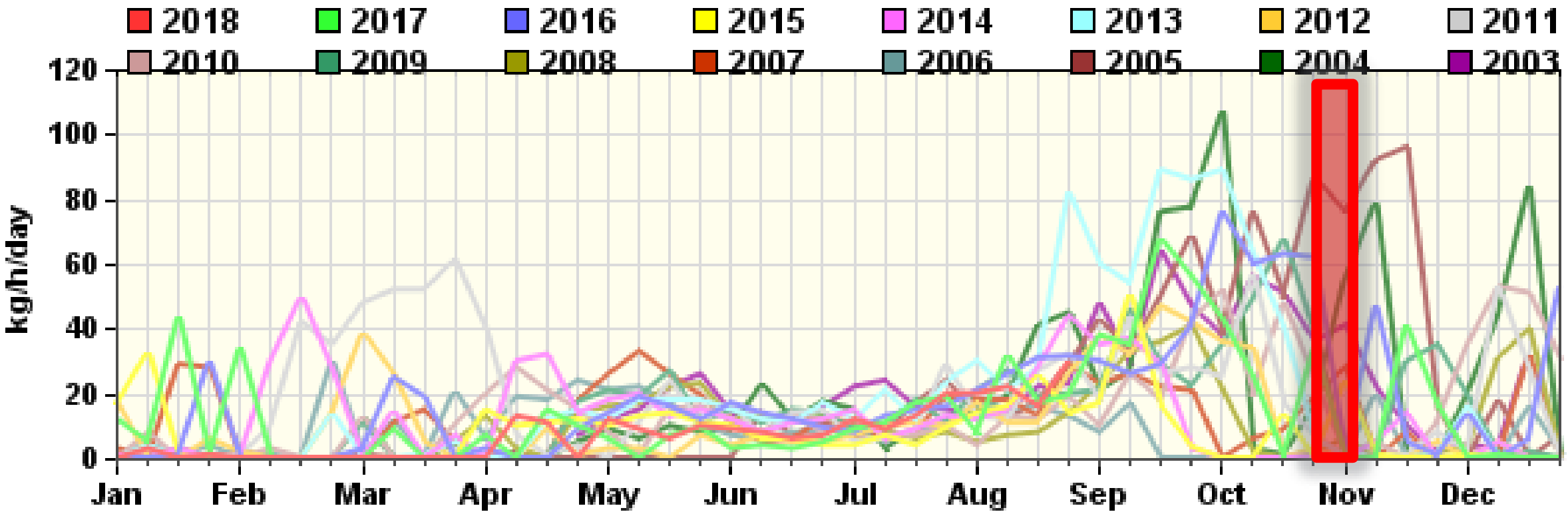
Barossa (DC) PGR Comparisons



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FEED BUDGETS

- What is feed budgeting
- Why
  - Proactive management
  - Minimise supplementary feeding
  - Maximise pasture productivity and maintain ground cover
  - Good business! Stocking rate is highest profit driver

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FEED BUDGETING

PROCESS

Determine:

1. SUPPLY = PGR (+ FOO)
2. DEMAND = DSE's of all classes on farm
3. BALANCE
4. QUALITY

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DSE RATINGS

Table 14: DSE values for different classes of sheep (Figures calculated from Lifetimewool energy values where 1 DSE = 8.3 MJ ME, — www.lifetimewool.com.au)

Livestock class	Body Weight (kg)			
	40	50	60	70
Dry sheep	0.8	1	1.2	1.3
Pregnant ewes (last month)				
Single	1.2	1.4	1.6	1.8
Twin	1.4	1.7	2.0	2.2
Lactating ewes				
Single	1.6	1.9	2.2	2.5
Twins	1.9	2.3	2.7	3.0
Ewe/lamb average/year				
Single	1.4	1.7	2.0	2.2
Twins	1.3	1.5	1.7	2.0
Weaned lambs				
Merino (20kg)	0.6–1 depending on rate of liveweight gain			
Xbred (30–40kg)	1–1.5 depending on rate of liveweight gain			

Source: VIC DPI / Evergraze

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DSE RATINGS

Stock class	DSE at specified liveweights Beef cattle British breeds		
Weaned calves	200 kg	250 kg	
Gaining 0.25 kg/day	5.5	6.5	
Gaining 0.75 kg/day	8.0	9.0	
Yearling	300 kg	350 kg	
Gaining 0.25 kg/day	7	8	
Gaining 0.75 kg/day	10	11	
Mature cattle	400 kg	500 kg	600 kg
Dry cows, steers (store)	7	8	9
Gaining 0.25 kg/day	8	9	10
Bullocks (store)	8	9	10
Gaining 0.75 kg/day	12	14	16
Pregnant cow, last 3 months	9	11	13
Cow with 0-3 month calf	14	18	22
Cow with 4-6 month calf	18	22	26
Cow with 7-10 month calf	22	25	28

Source: Agriculture Victoria

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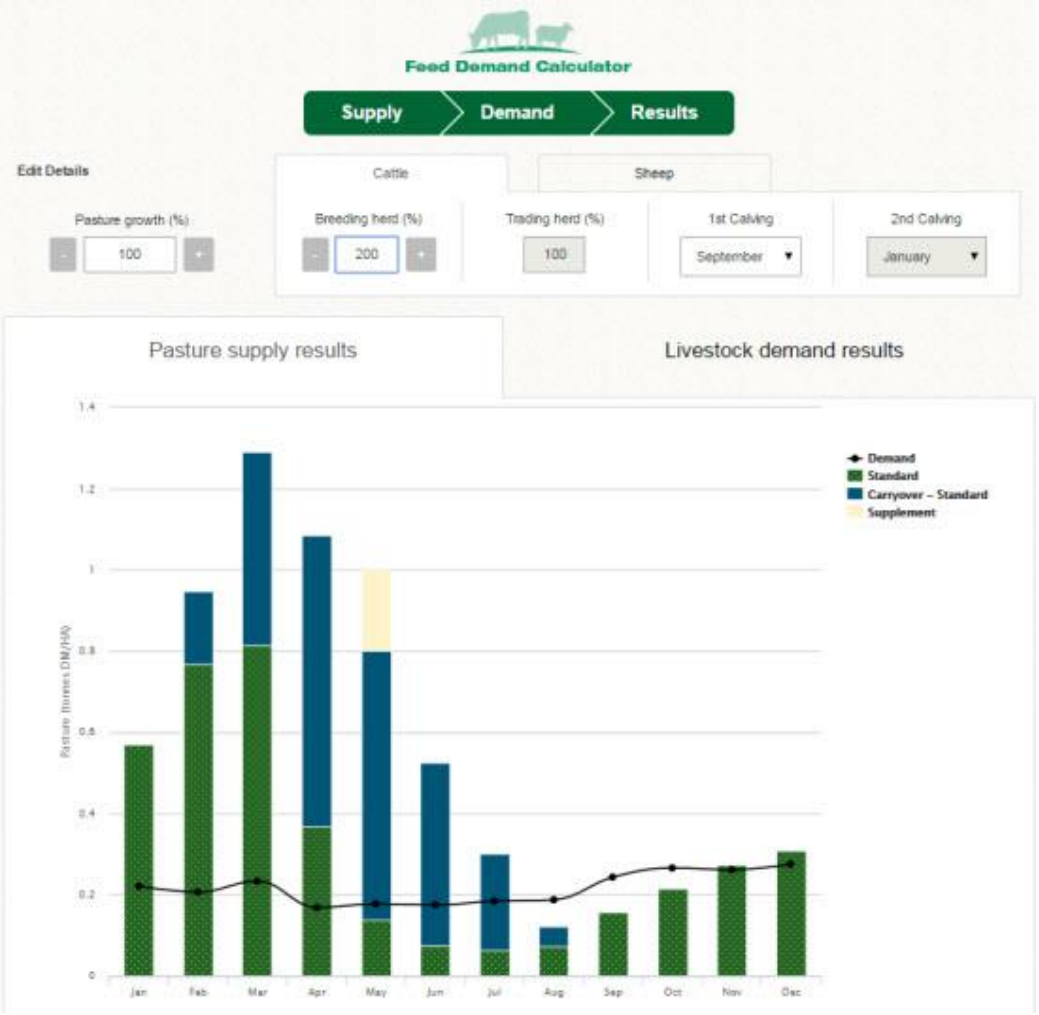
FEED BUDGETING – LONG TERM PLANNING



SIMPLE FEED BUDGET

DEMAND

			MONTHLY DSE RATING											
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	Days/Month		31	28	31	30	31	30	31	31	30	31	30	31
EWES	2000	hd	1.2	1.3	1.6	1.8	2.5	2.5	2.5	2.5	1.2	1.2	1.2	1.2
WEANED LAMBS	2000	hd	1.4								1	1.1	1.1	1.2
HOGGETS	500	hd		1.4	1.4	1.4	1.4	1.4	1.3	1.3	1.3	1.3	1.2	1.2
RAMS	40	hd	2	2	2	2	2	2	2	2	2	2	2	2
OTHER		hd												

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
EWES	*74400*	*72800*	*99200*	*108000*	*155000*	*150000*	*155000*	*155000*	*72000*	*74400*	*72000*	*74400*
WEANED LAMBS	*86800*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*60000*	*68200*	*66000*	*74400*
HOGGETS	*0*	*19600*	*21700*	*21000*	*21700*	*21000*	*20150*	*20150*	*19500*	*20150*	*18000*	*18600*
RAMS	*2480*	*2240*	*2480*	*2400*	*2480*	*2400*	*2480*	*2480*	*2400*	*2480*	*2400*	*2480*
OTHER	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
TOTAL DSE'S (MONTHLY FEED DEMAND [kg])	163680	94640	123380	131400	179180	173400	177630	177630	153900	165230	158400	169880

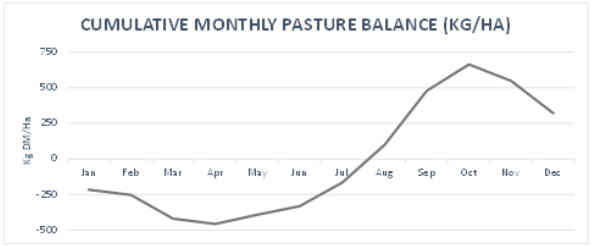
SUPPLY

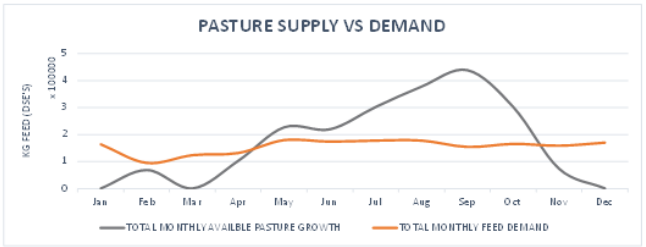
TOTAL HA	750
PASTURE UTILISATION	65%

	PASTURE GROWTH											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
DAILY PGR	0	5	0	7	15	15	20	25	30	20	5	0
TOTAL MONTHLY PASTURE GROWTH	0	105000	0	157500	348750	337500	465000	581250	675000	465000	112500	0
TOTAL MONTHLY AVAILBLE PASTURE GROWTH	0	68250	0	102375	226688	219375	302250	377813	438750	302250	73125	0

BALANCE

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
MONTHLY BALANCE (PASTURE GROWTH - DEMAND)	-163680	-26390	-123380	-29025	47508	45975	124620	200183	284850	137020	-85275	-169880
CUMULATIVE MONTHLY PASTURE BALANCE (TOTAL KG	-163680	-190070	-313450	-342475	-294968	-248993	-124373	75810	360660	497680	412405	242525
CUMULATIVE MONTHLY PASTURE BALANCE (KG/HA)	-218	-253	-418	-457	-393	-332	-166	101	481	664	550	323





FEED DEFICIT SITUATION

- Supplementary feed
- Open other feed areas – crop?
- Containment feeding
- Destock
- Change overall system – reduce breeding enterprise, more trading

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MANAGING LIVESTOCK CONDITION AND NUTRITION

BODY CONDITION SCORE = MEASURE OF NUTRITION

How to Condition Score

Condition Score 1

Backbone
The bones form a sharp narrow ridge. Each vertebra can be easily felt as a bone under the skin . There is only a very small eye muscle. The sheep is quite thin (virtually unsaleable).

Short Ribs
The ends of the short ribs are very obvious. It is easy to feel the squarish shape of the ends. Using fingers spread 1cm apart, it feels like the fingernail under the skin with practically no covering.

Condition Score 2

Backbone
The bones form a narrow ridge but the points are rounded with muscle. It is easy to press between each bone. There is a reasonable eye muscle. Store condition- ideal for wethers and lean meat.

Short Ribs
The ends of the short ribs are rounded but it is easy to press between them. Using fingers spread 0.5cms apart, the ends feel rounded like finger ends. They are covered with flesh but it is easy to press under and between them.

Condition Score 3

Backbone
The vertebrae are only slightly elevated above a full eye muscle. It is possible to feel each rounded bone but not to press between them. (Forward store condition ideal for most lamb markets now. No excess fat).

Short Ribs
The ends of short ribs are well rounded and filled in with muscle. Using 4 fingers pressed tightly together, it is possible to feel the rounded ends but not between them. They are well covered and filled in with muscle.

lifetimewool

How to Condition Score

Condition Score 4

Backbone
It is possible to feel most vertebrae with pressure. The back bone is a smooth slightly raised ridge above full eye muscles and the skin floats over it.

Short Ribs
It is only possible to feel or sense one or two short ribs and only possible to press under them with difficulty. It feels like the side of the palm, where maybe one end can just be sensed.

Condition Score 5

Backbone
The spine may only be felt (if at all) by pressing down firmly between the fat covered eye muscles. A bustle of fat may appear over the tail (wasteful and uneconomic).

Short Ribs
It is virtually impossible to feel under the ends as the triangle formed by the long ribs and hip bone is filled with meat and fat. The short rib ends cannot be felt.

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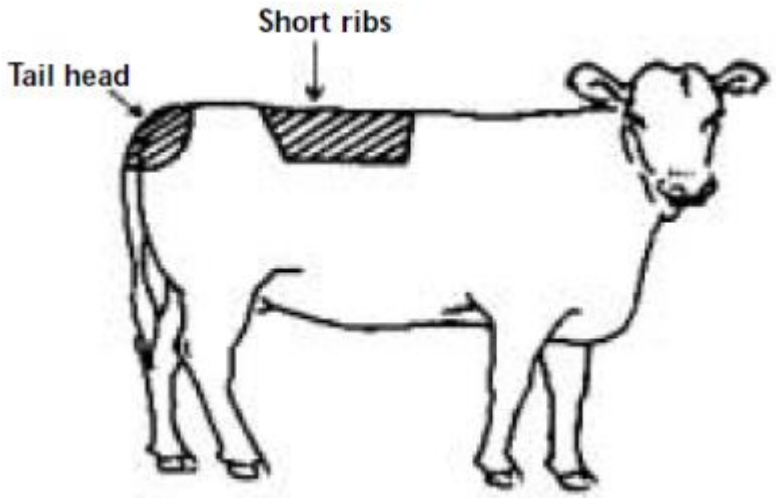
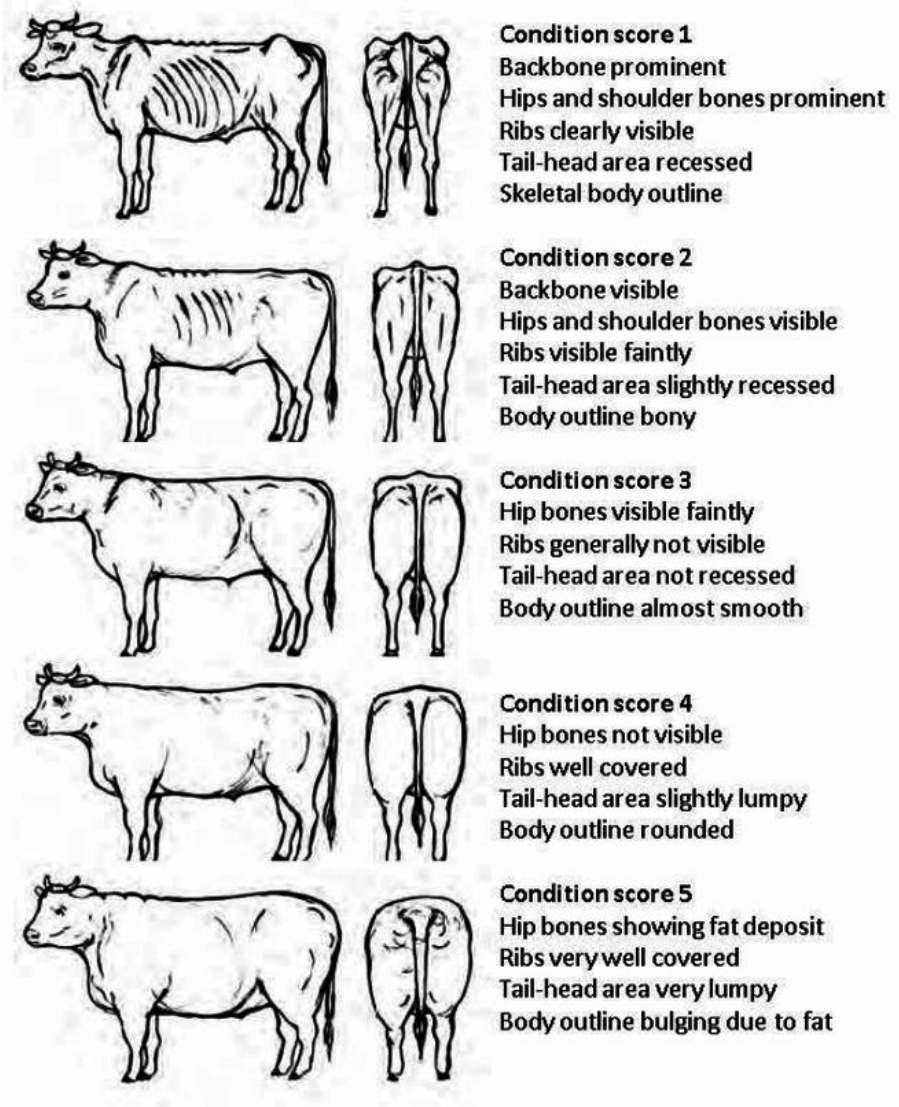
BODY CONDITION SCORE = MEASURE OF NUTRITION





Condition score 1
Backbone prominent
Hips and shoulder bones prominent
Ribs clearly visible
Tail-head area recessed
Skeletal body outline

Condition score 2
Backbone visible
Hips and shoulder bones visible
Ribs visible faintly
Tail-head area slightly recessed
Body outline bony

Condition score 3
Hip bones visible faintly
Ribs generally not visible
Tail-head area not recessed
Body outline almost smooth

Condition score 4
Hip bones not visible
Ribs well covered
Tail-head area slightly lumpy
Body outline rounded

Condition score 5
Hip bones showing fat deposit
Ribs very well covered
Tail-head area very lumpy
Body outline bulging due to fat

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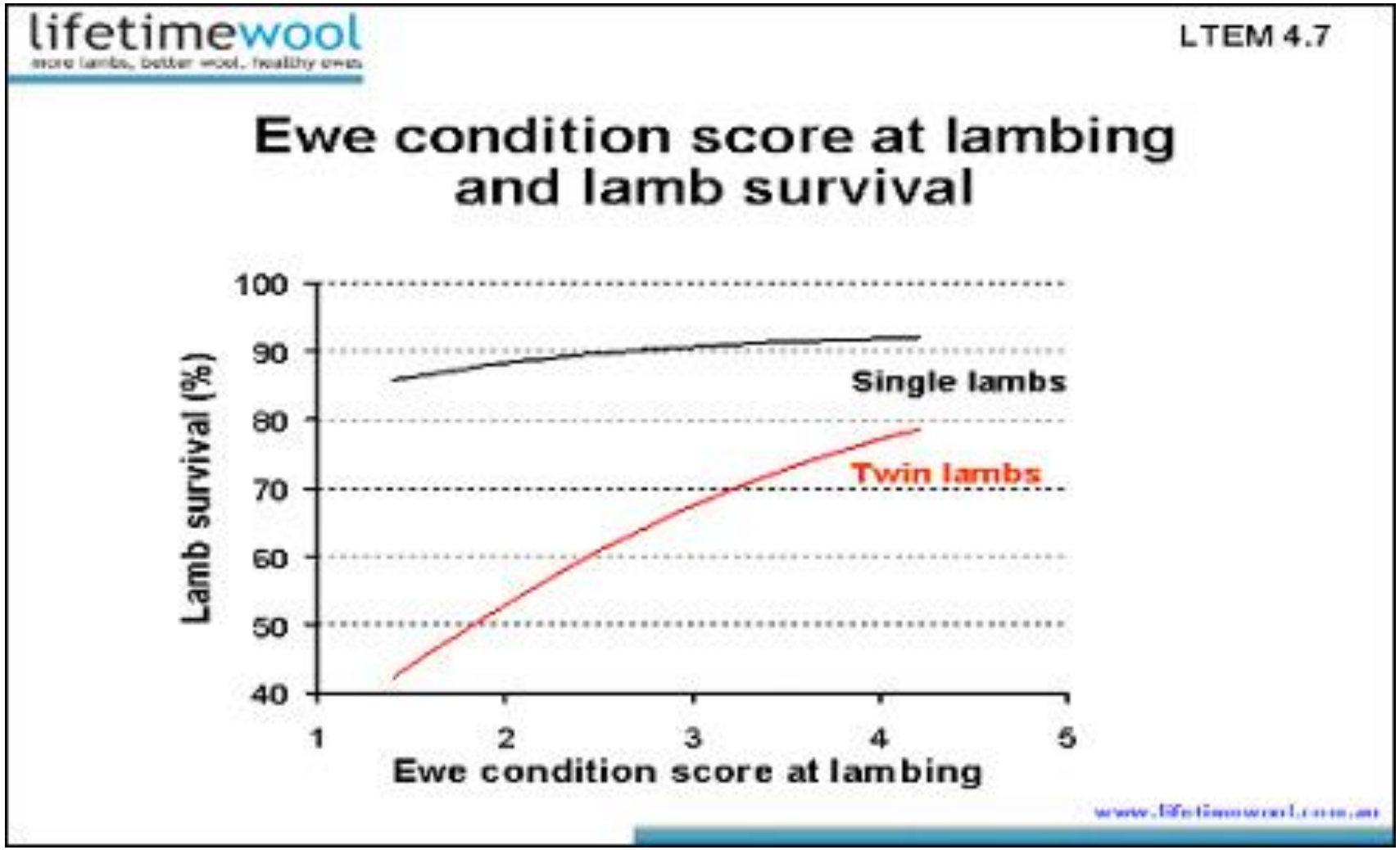
TWIN VS SINGLE SURVIVAL



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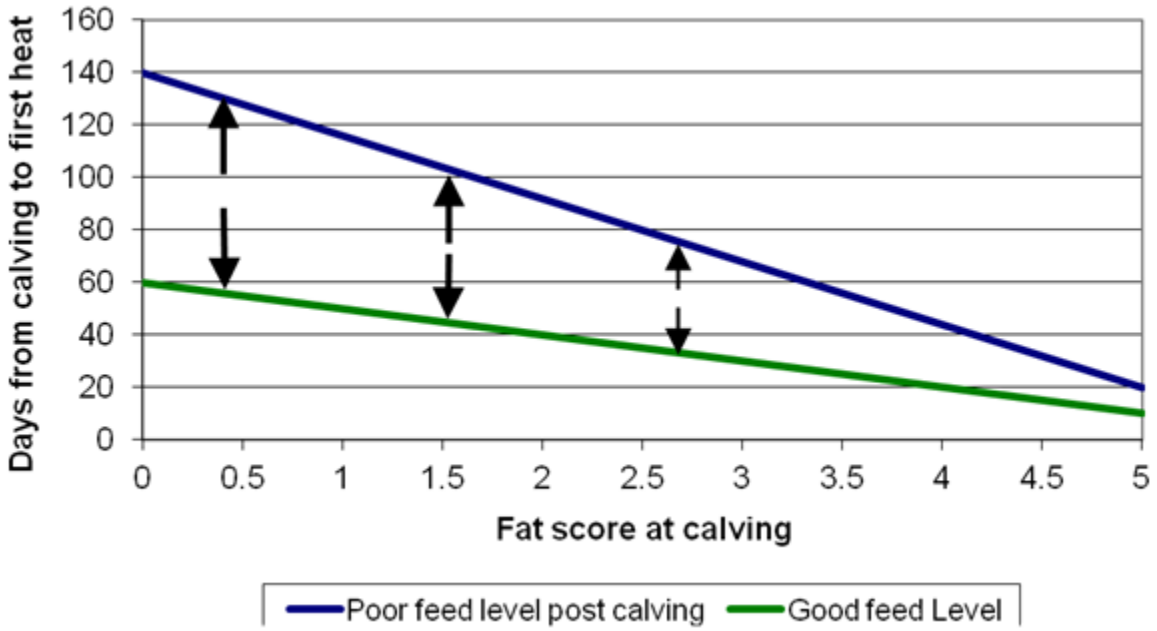
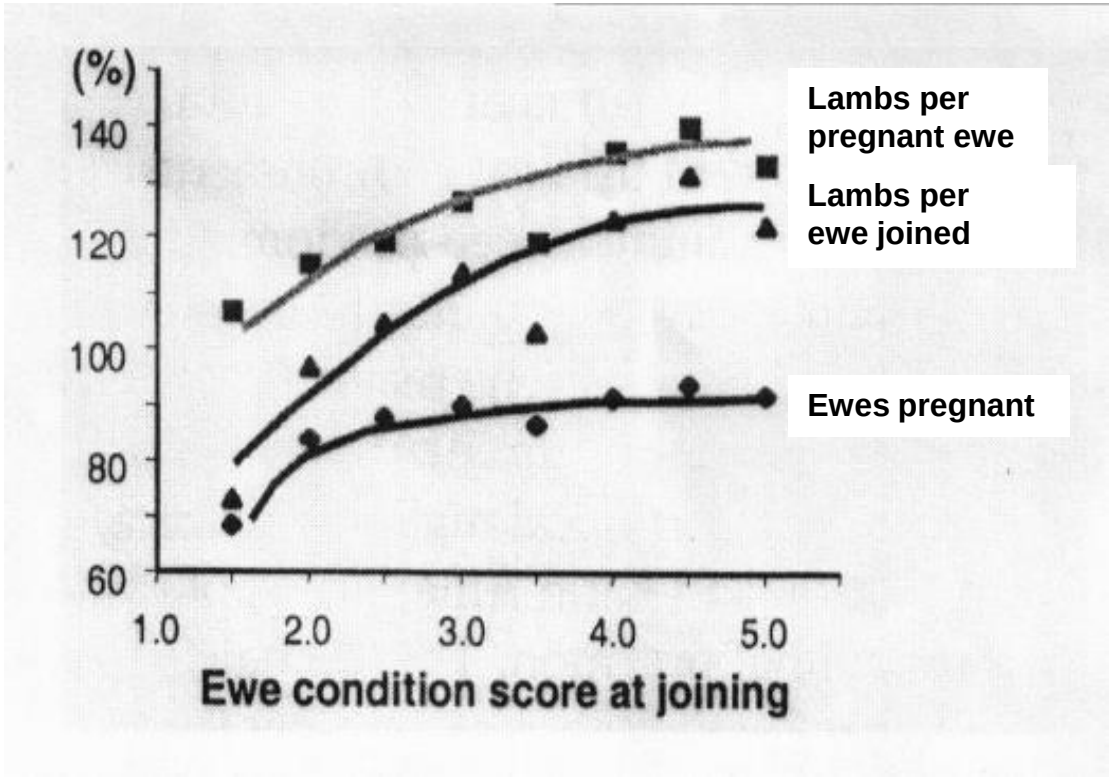
LIVESTOCK CONDITION FOR JOINING



Source: More Beef from Pastures



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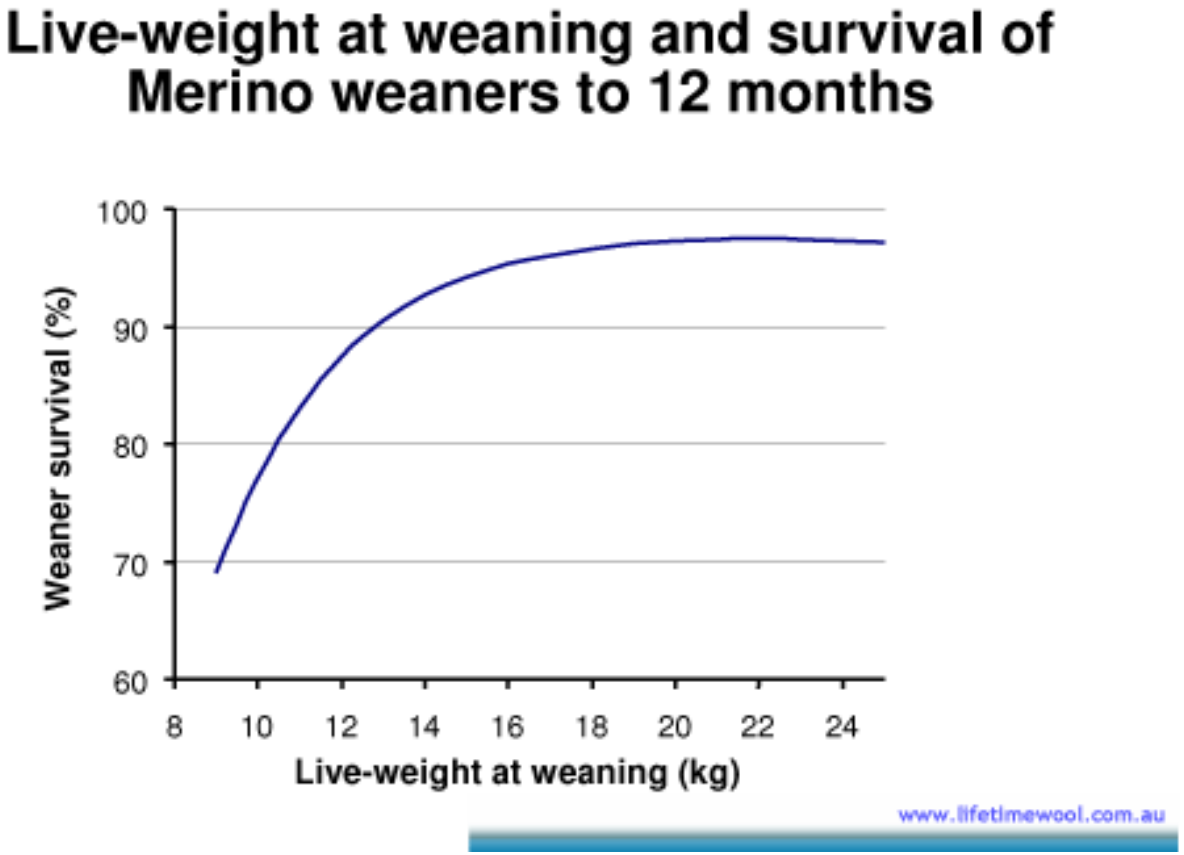
MAXIMISING LAMB SURVIVAL



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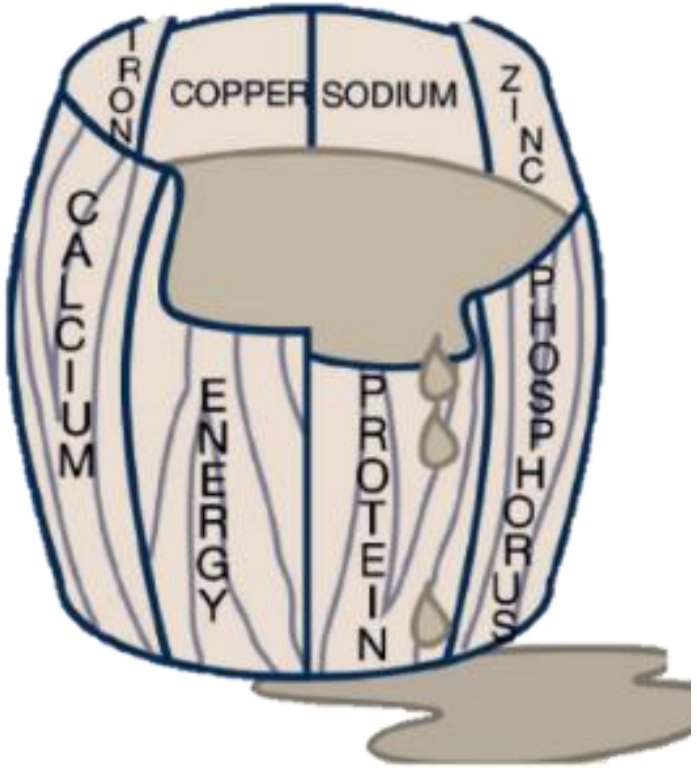
MANAGING FEED RESOURCES

- Animal requirements
- Available feed
- Surplus/deficit



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MEETING ANIMAL REQUIREMENTS

- What determines dry matter intake?
- What does energy (ME) influence?
- Why is protein important?
- Why do we need to consider NDF?
- Minerals

SHEEP REQUIREMENTS

	DMI		Energy	Protein
	(%)	*(kg/day)*	*(MJ ME/day)*	*(g/day)*
Maintenance	1.72	1.12	8.91	84
Late pregnancy (Single)	2.65	1.72	13.73	149
Late pregnancy (Twin)	2.68	1.74	17.39	183
Early lactation (Single)	2.88	1.87	14.94	220
Early lactation (Twin)	2.92	1.89	18.92	294
Weaner lambs	4	1.40	15.4	224
Replacement ewe lambs	3	1.35	13.5	189

Ewes – 65kg, Weaners – 35kg, Replacement ewe lambs – 45kg

Adapted from NRC 1985 & 2007

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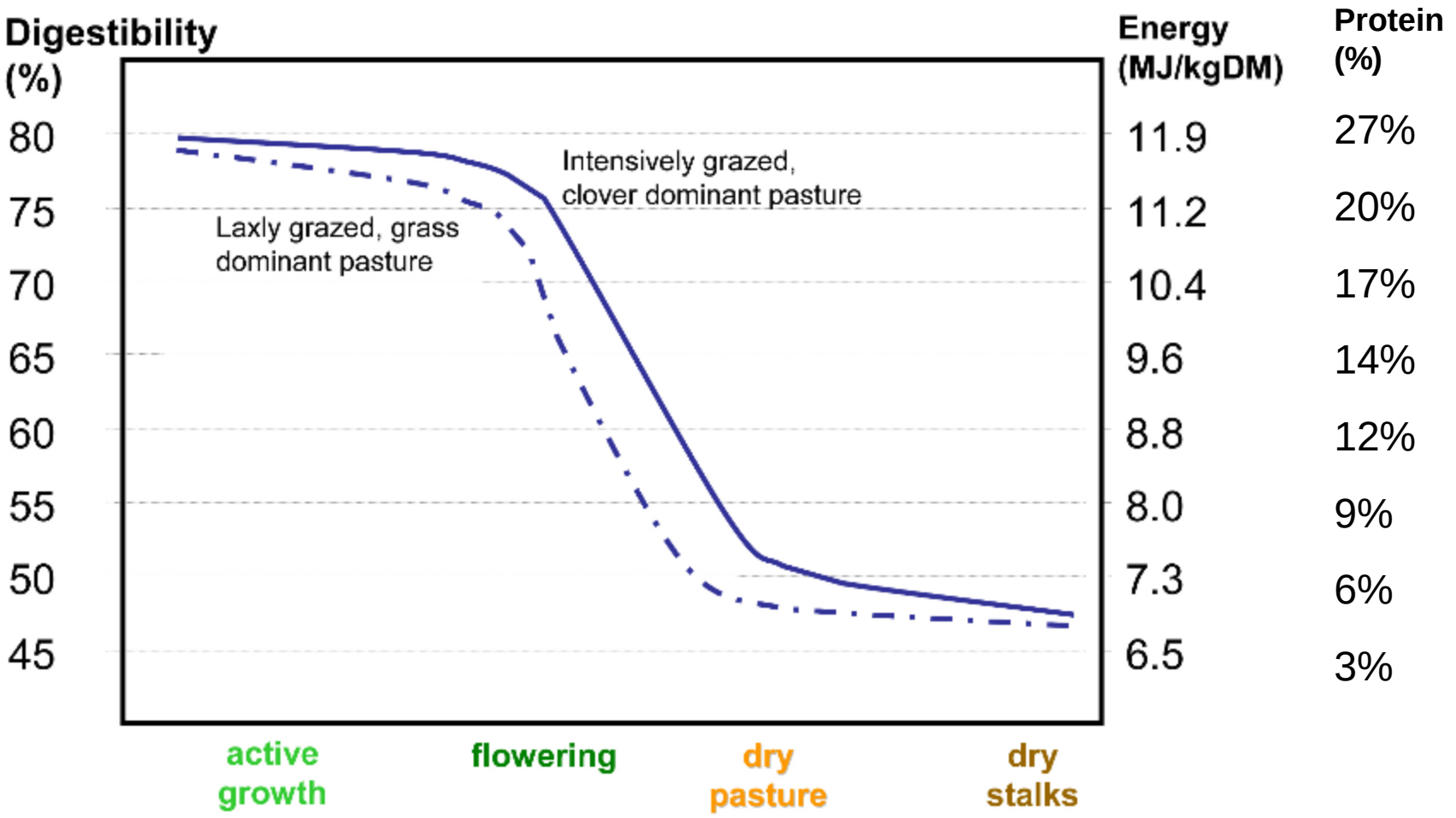
CATTLE REQUIREMENTS

	Energy					Protein
Breeder cows	**350kg**	**400kg**	**450kg**	**500kg**	**550kg**	**Protein required**
Dry cow	48	52	57	61	66	6-8%
Pregnant, last 3 months	60	65	69	74	78	6-8%
Lactating cow and calf, 0–3 months	74	80	85	90	95	10–11%
Lactating cow and 150kg calf	111	118	125	133	140	10–11%
Growing cattle	**150kg**	**200kg**	**300kg**	**400kg**	**500kg**	**Protein required**
Maintenance	22	26	35	45	55	8%
Gaining 0.5kg/day	37	44	57	71	82	10–12%
Gaining 1.0kg/day	50	59	76	93	108	13%

Energy = MJ ME/day

PASTURE QUALITY



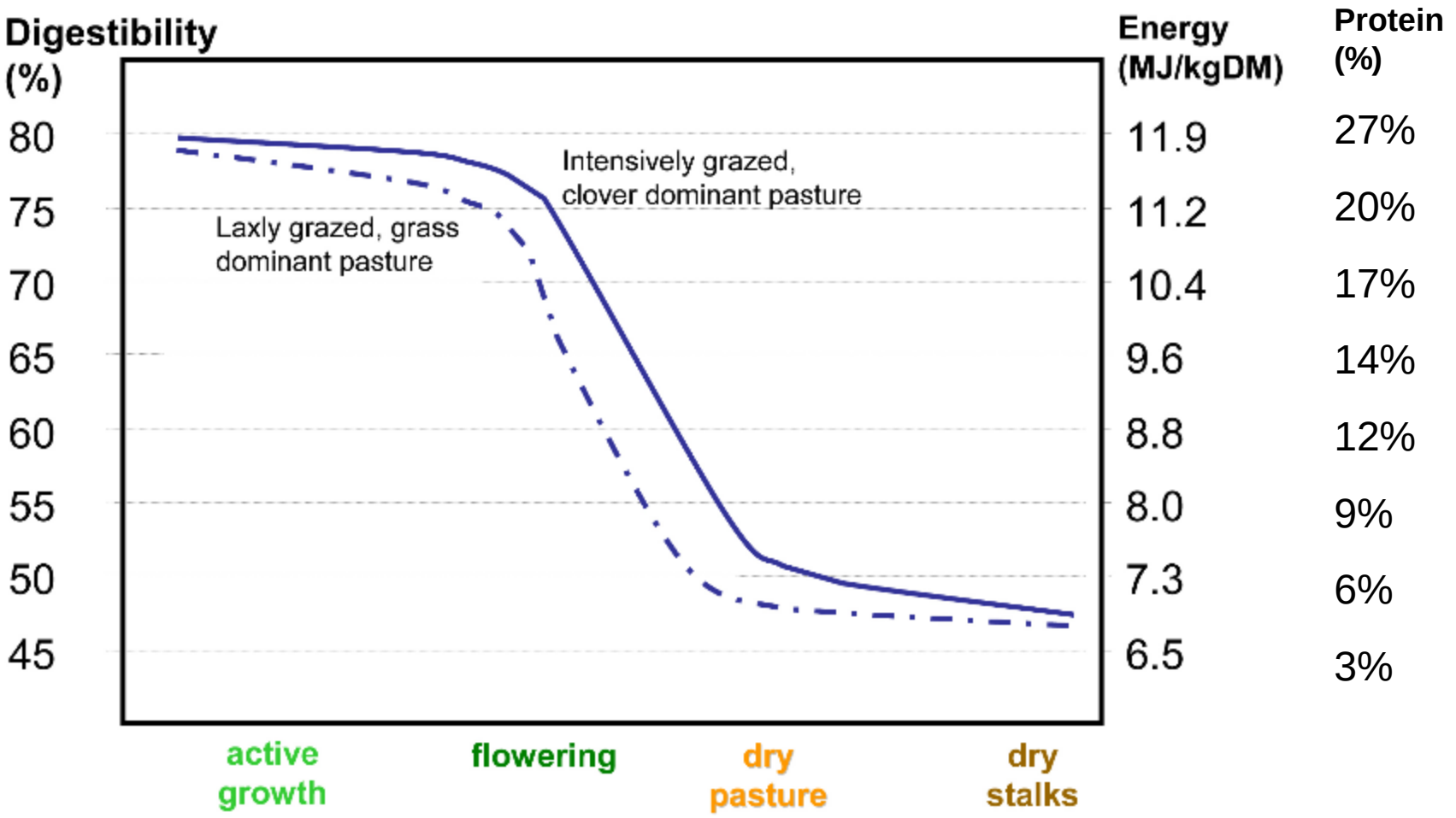
Feed tests!

Source: adapted from DAFWA

GRAZING CROP NUTRITION EXAMPLE

- Feed value
- Animal requirements
- Supplementation required?
  - Targets

PASTURE QUALITY



Feed tests!

Source: adapted from DAFWA

ALIGNING FEED AND REQUIREMENTS

Grazing cereal crop – 10ME, 14% CP, 46% NDF, 40% DM

Lamb requirements

- DMI – 4% x 30kg = 1.2 kg DM
- NDF – 46% = 2.6% of LW = 0.78kg DM (1.95 kg as fed)

	ME	CP
Lamb requirements	13.2 MJ/day	192g/day
Crop supply	7.8 MJ/day	109g/day
Deficit / surplus	-5.4 MJ/day	-83g/day
Balance (+440g/hd/d oats/lupins)	✓	✓

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COMPARING FEED OPTIONS

	Feed cost on farm ($/tonne)	Energy (MJ ME/kg DM)	Protein (%)	Dry matter (%)	Feed cost ($/MJ ME)	Feed cost ($/kg protein)
Legume grain	$480.00	13.0	30.0%	90%	$0.041	$1.78
Cereal grain	$380.00	13.0	11.5%	89%	$0.033	$3.71
Straw	$180.00	5.7	3.5%	88%	$0.036	$5.84
Legume hay	$375.00	10.0	18.0%	87%	$0.043	$2.39
Cereal hay	$265.00	8.7	7.0%	87%	$0.035	$4.35
Pellet	$440.00	12.0	16.0%	87%	$0.042	$3.16

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GRAZING CROP MANAGEMENT

- Feed budgets – Feed on offer, days grazing available
- High stocking rates; >30DSE/ha
- Water availability (high numbers of stock, electric fences)
- Weed control
- Grain vs no grain fill
- Supplementation

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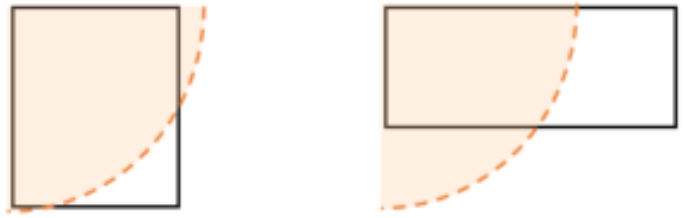
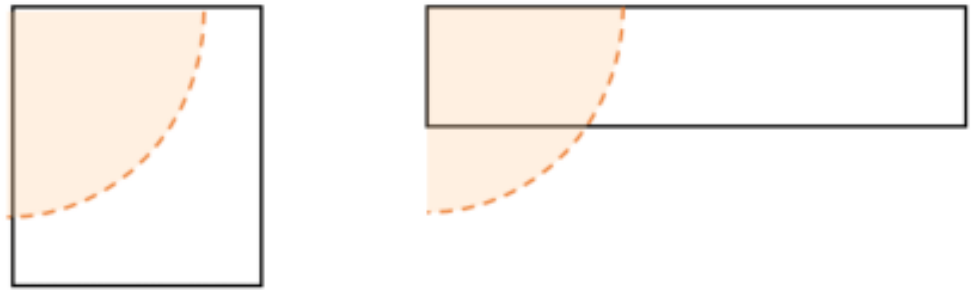
LOCATION

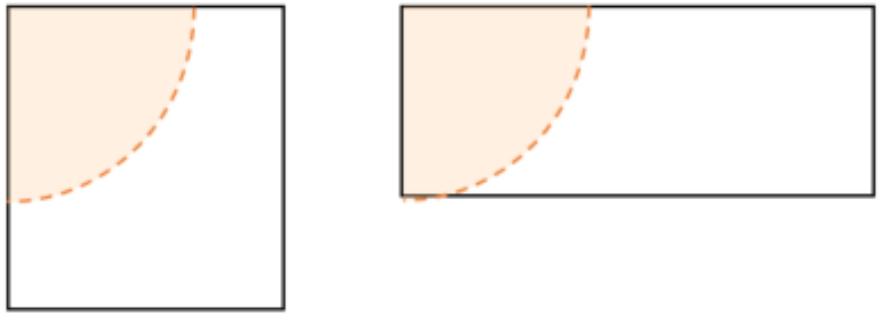
20ha paddocks



40ha paddocks



60ha paddocks



80ha paddocks

One trough in the corner is rarely enough! Images show 500m grazing arc around water trough position

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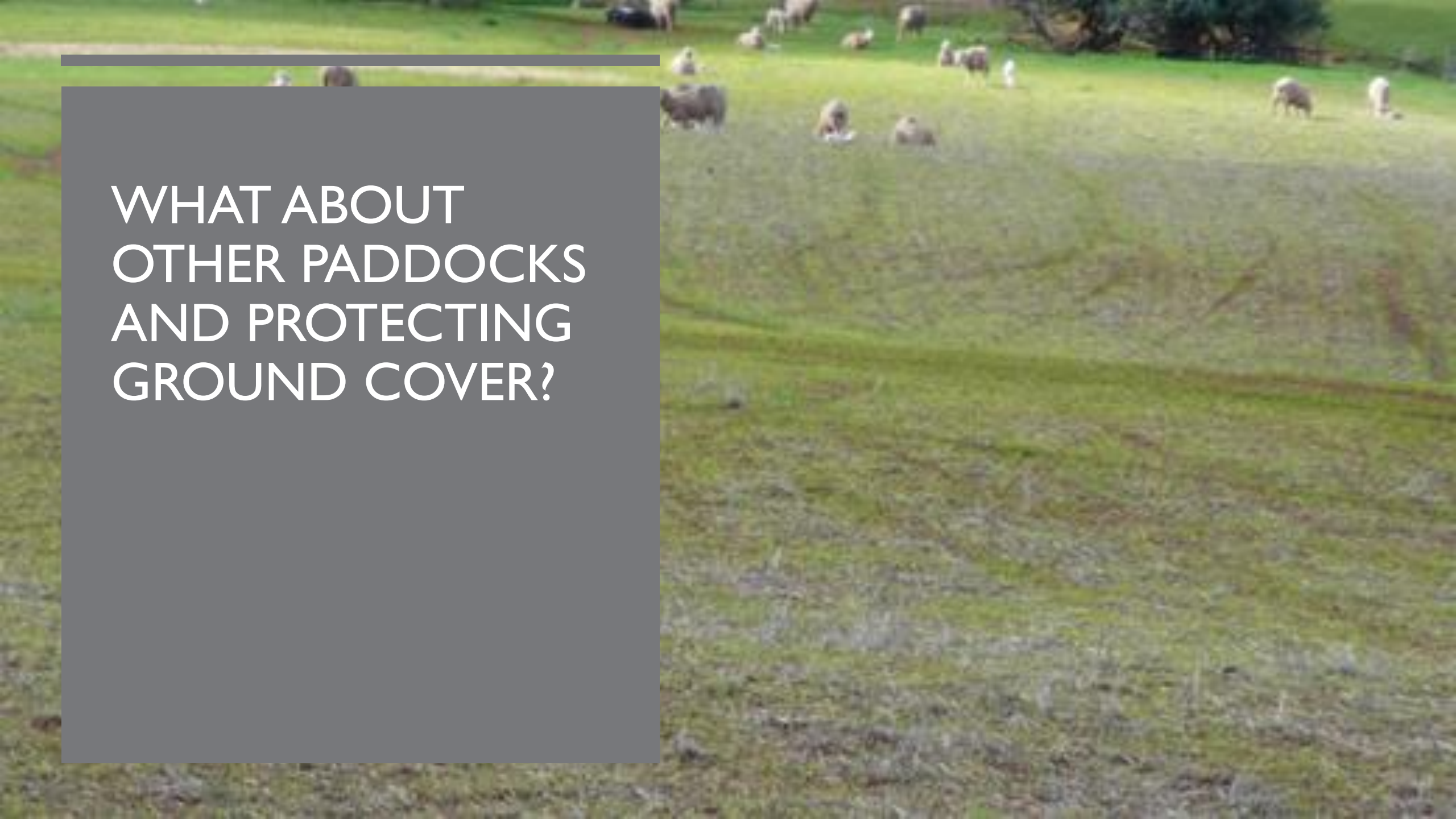
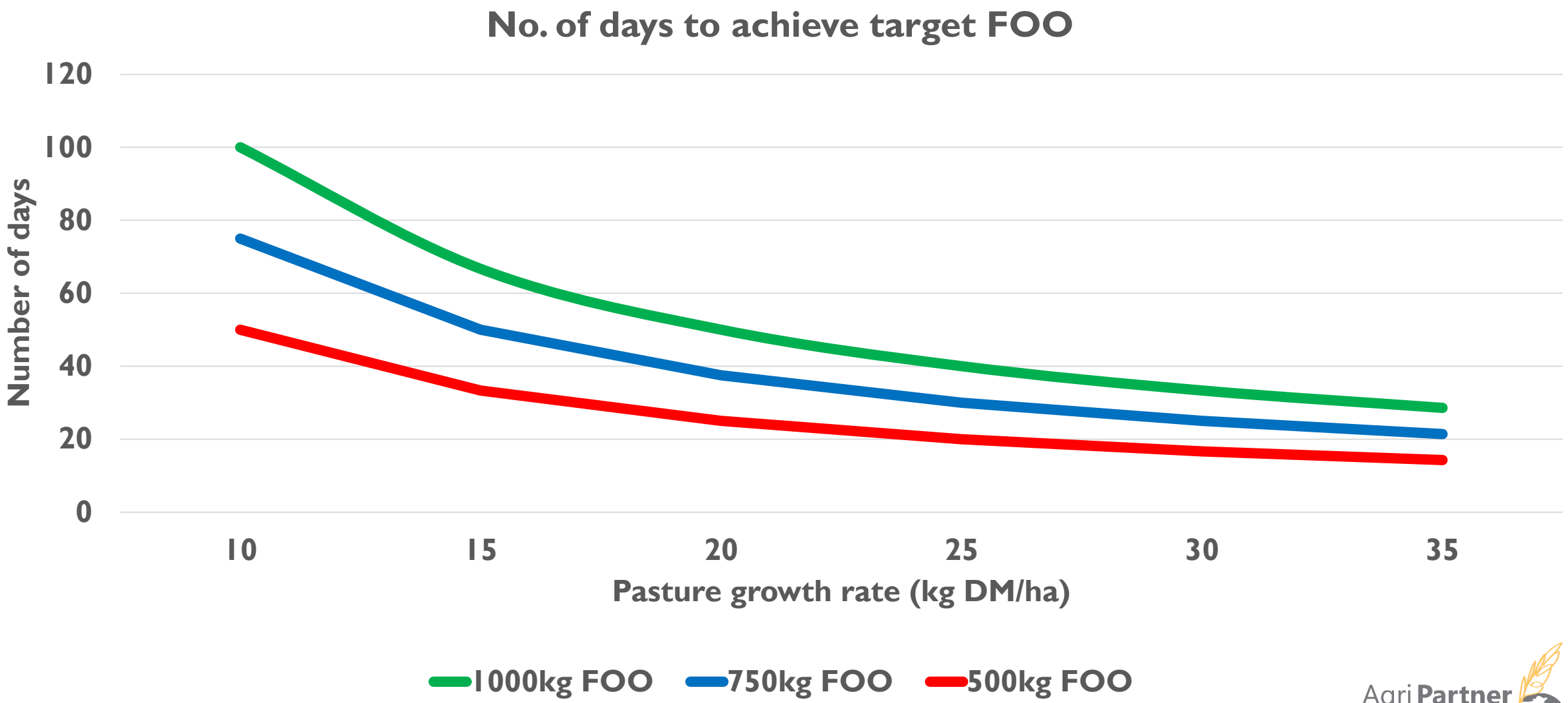


WHAT ABOUT OTHER PADDOCKS AND PROTECTING GROUND COVER?



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CONTAINMENT AREA

- Definition… (a.k.a. droughtlot, confinement area)

  "The removal of sheep or cattle from the paddock into containment for maintenance feeding, where all feed and water are brought to the animal."

  Differences to a Feedlot?

WHY…?

BENEFITS OF CONTAINMENT AREAS

- Option during dry times
- Increased carrying capacity
- Environmental protection
- Allows winter feed to get ahead
- Feedlot option
- Management benefits – feeding ease, shearing etc

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SETTING UP CONTAINMENT AREAS

Stock containment areas

More than a drought measure

Cattle in a containment area

Image credit: Hamish Dickson, AgriPartner Consulting

A stock containment area (SCA) is a carefully selected, small, fenced section of the property which is set up to intensively hold, feed and water livestock to protect soil and pasture resources, maintain animal health and condition and reduce demand on labour during adverse times and seasons.

A stock containment area suits sheep and cattle. It can be used following a fire, during droughts, early spring finishes or late autumn breaks when paddock feed is limited.

It should be considered part of a property management plan and once established, should be maintained and available for use during emergencies.

However, if considering containment areas to manage stock when paddock feed is limited, also take into account other possible management strategies such as seeking agistment or selling stock to reduce feed demand on the property.

Benefits to containing stock

Stock containment areas should be part of a farm management system to reduce soil erosion, maintain and enhance soils and pastures, save labour and can improve the productivity of animals.

They can also be used to quarantine new stock, for weaning and for holding stock prior to other handling tasks. Given this, it is worth spending time and money setting up a robust and labour efficient SCA.

There are a number of benefits to containing stock.
These include:

- reduced feeding, watering and handling time for stock as they are located in one area
- containing weeds potentially brought onto the property with imported feed
- stock control when areas may need fencing rebuilt (e.g. following a fire)
- less chance of soil erosion or damage to paddocks during a drought or dry conditions
- quarantine areas for new stock
- reduced energy expenditure of stock from walking around paddocks looking for scarce feed
- pasture maintenance or improvement due to the ability to rest paddocks, prevent over-grazing (especially of perennial grasses) and allow pasture to recover after opening rains
- better ability to monitor stock and keep them in good condition and health
- efficient ways of supplying quality water to stock.

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Natural Resources
Adelaide and Mt Lofty Ranges

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mla
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6. Induction

The following checklist is designed to be completed on arrival of each new consignment of sheep or lambs to be intensively fed.

	Date: / /	
6.1 A National Vendor Declaration (NVD) and National Sheep Health Statement (where necessary) is provided with all stock introduced to the property	☐	
6.2 Where necessary the NLIS database is updated to record the movement of stock	☐	
6.3 Sheep and lambs are provided with feed and water on arrival	☐	
6.4 Check for sick and/or injured animals and treat appropriately	☐	
6.5 Has medication(s) been administered?	☐	
Details: Treatment: ..... Date: ..... WHP of treatment: ..... ESI of treatment: ..... Expiry date of WHP: / / Expiry date of ESI: / / Medications have been administered in accordance with the manufacturer's instructions or under veterinary supervision ☐ If more treatments need to be recorded please attach an additional sheet		
6.6 Ration formulated to meet nutritional requirements with feeding plan/budget in place for the duration of the feeding period (see section 15.2 of the National Procedures and Guidelines for further information)	☐	
6.7 Ration is tested by an accredited laboratory to ensure nutritive value meets requirements of sheep and lambs	Yes ☐	No ☐
6.8 Sufficient roughage is provided in the diet to maintain animal health during introductory period	☐	
6.9 Grain and/or high starch, low fibre feeds such as grain based pellets are introduced to sheep and lambs slowly during introductory period	☐	
6.10 Sheep and lambs are vaccinated prior to entry?	☐	
Details: Product: ..... Date: ..... WHP of treatment: ..... ESI of treatment: ..... Expiry date of WHP: / / Expiry date of ESI: / / Medications have been administered in accordance with the manufacturer's instructions or under veterinary supervision ☐		
6.11 Sheep and lambs are drenched prior to entry?	☐	
Details: Product: ..... Date: ..... WHP of treatment: ..... ESI of treatment: ..... Expiry date of WHP: / / Expiry date of ESI: / / Medications have been administered in accordance with the manufacturer's instructions or under veterinary supervision ☐		

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WHERE – SITE SELECTION

- Slope
- Area
- Shade / Shelter
- Soil type & dust management
- Proximity to yards / laneways
- Feeding and watering equipment
- Neighbours and waterways
- Council guidelines

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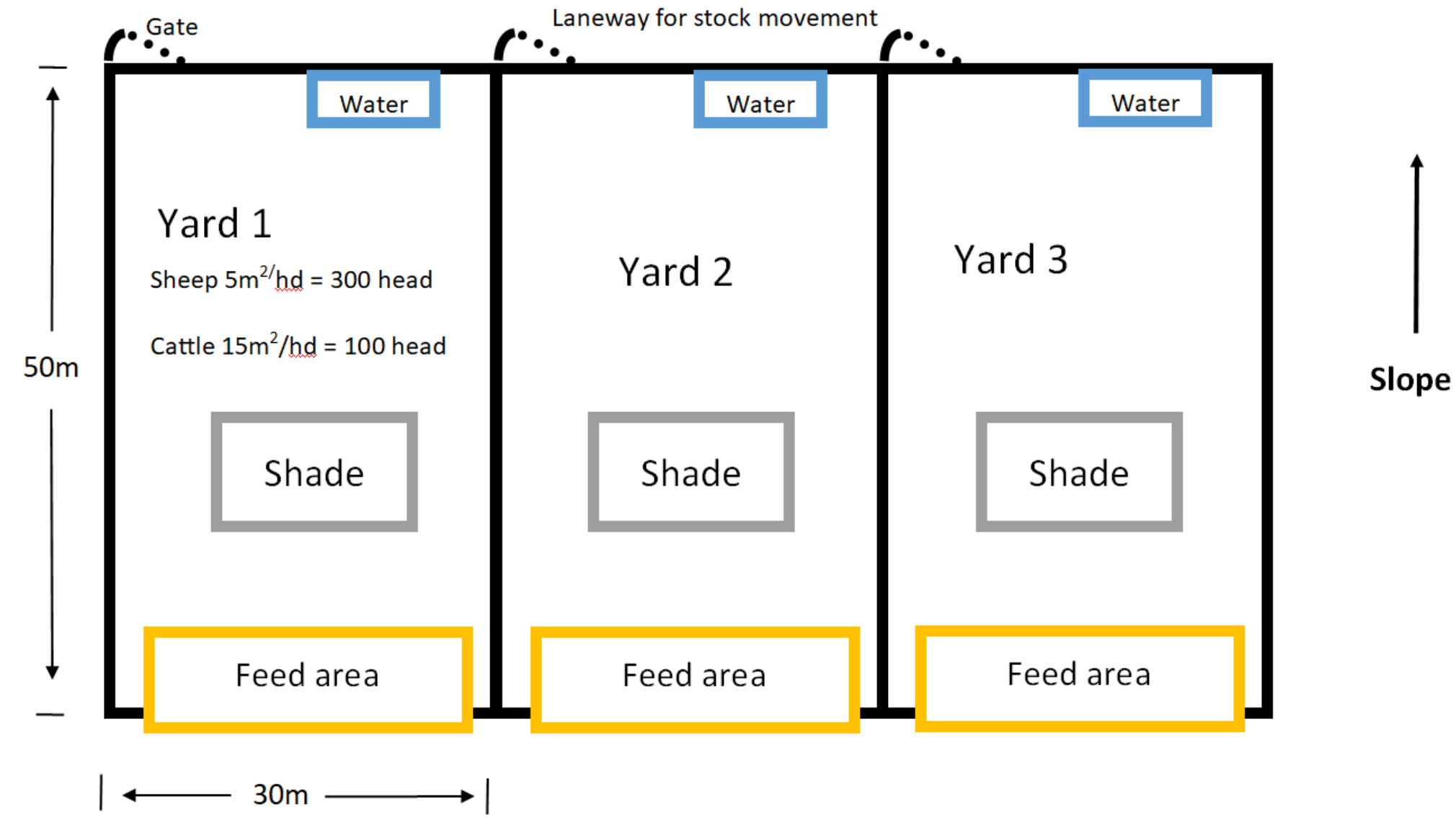

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SENSITIVE AREAS

- Roads – 200m
- Watercourse – 200m
- Property boundary – 20m
- Neighbours/towns – check standards

Note: above guidelines are general, local standards may require different distances.

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WATER QUANTITY

Stock type	Consumption per head per day (L)
Sheep	
Weaners	2 – 4
Adult dry sheep - grassland - saltbush	 2 – 6 4 – 12
Ewes with lambs at foot	4 – 10
Cattle	
Lactating cows - grassland - saltbush	 40 – 100 70 – 140
Young stock	25 – 50
Dry stock	35 – 80

Wide variance due to differences in;

- Liveweight
- Feed quality
- Water quality
- Breed
- Temperature

When calculating requirements also allow for evaporation and consumption by feral animals.

Source; NSW DPI

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ACCESS

- Sheep
  - 30cm + 1.5cm per head
- Cattle
  - 30cm per 10 head
- Above all, pressure is critical.


Source; ASC Water Tanks

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SUMMARY

1. Have a clear production goal for continued feeding
2. Remove any passengers (dry stock, poor performers)
3. Manage nutrition as cost effectively as possible (feed + labour)
4. Holding paddocks / containment
5. Consider animal health, particularly as feed changes

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RESOURCES

- Making More from Sheep Manual
- More Beef from Pastures
- AWI Drought Resources
  www.wool.com/droughtresources

- Barossa Improved Grazing Group
- AMLR and SAMDB NRM
- Hamish Dickson, Ph 0427 446 499

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QUESTIONS…?

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