MEAT & LIVESTOCK AUSTRALIA

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For the latest in red meat R&D

Supplementary feeding livestock in the rangelands and the economic benefit

Rob Inglis

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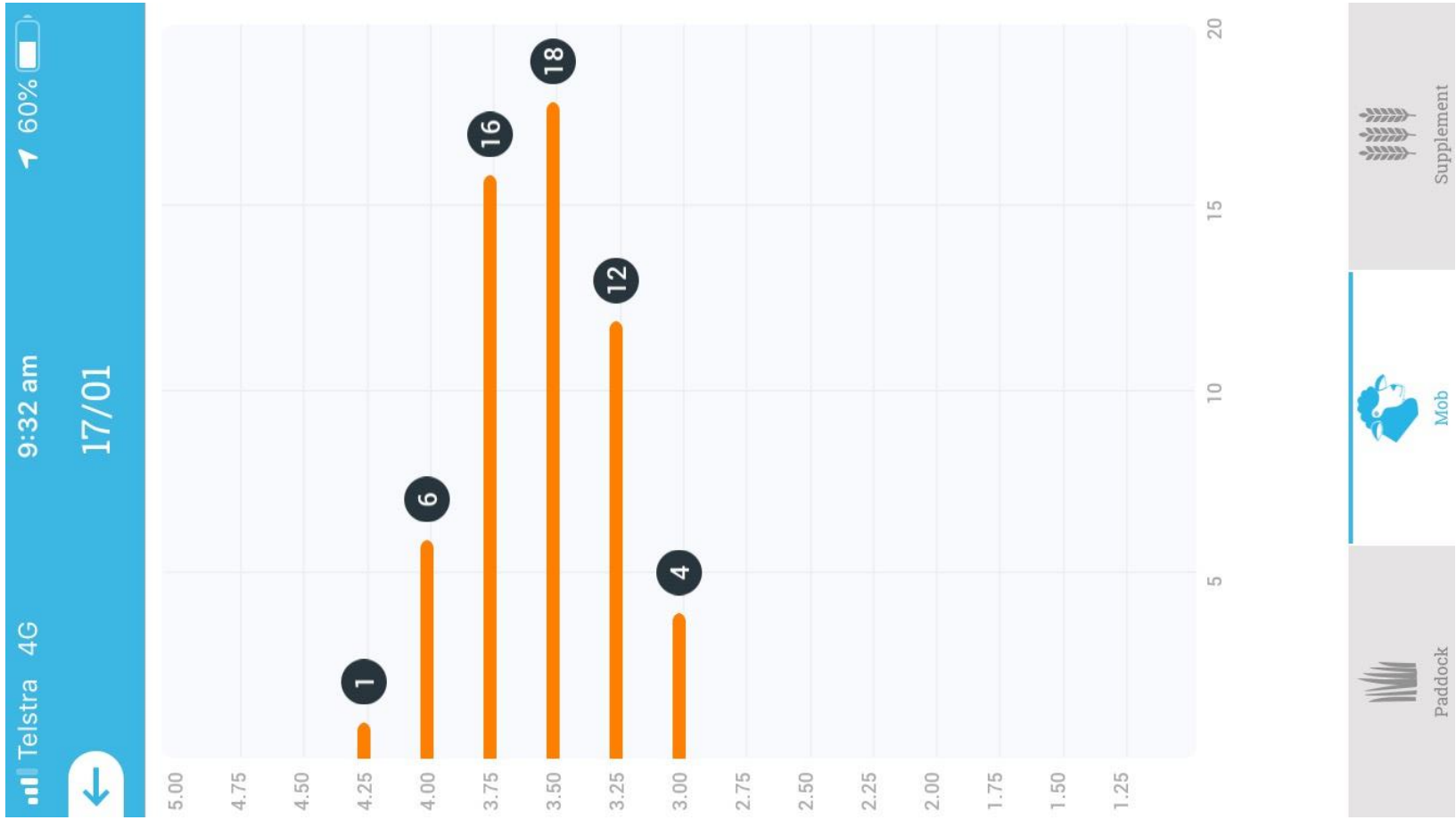
Key points

- It takes 3 times more feed to add weight than to maintain.
- Containment feeding pays
- Horses for courses

Condition score



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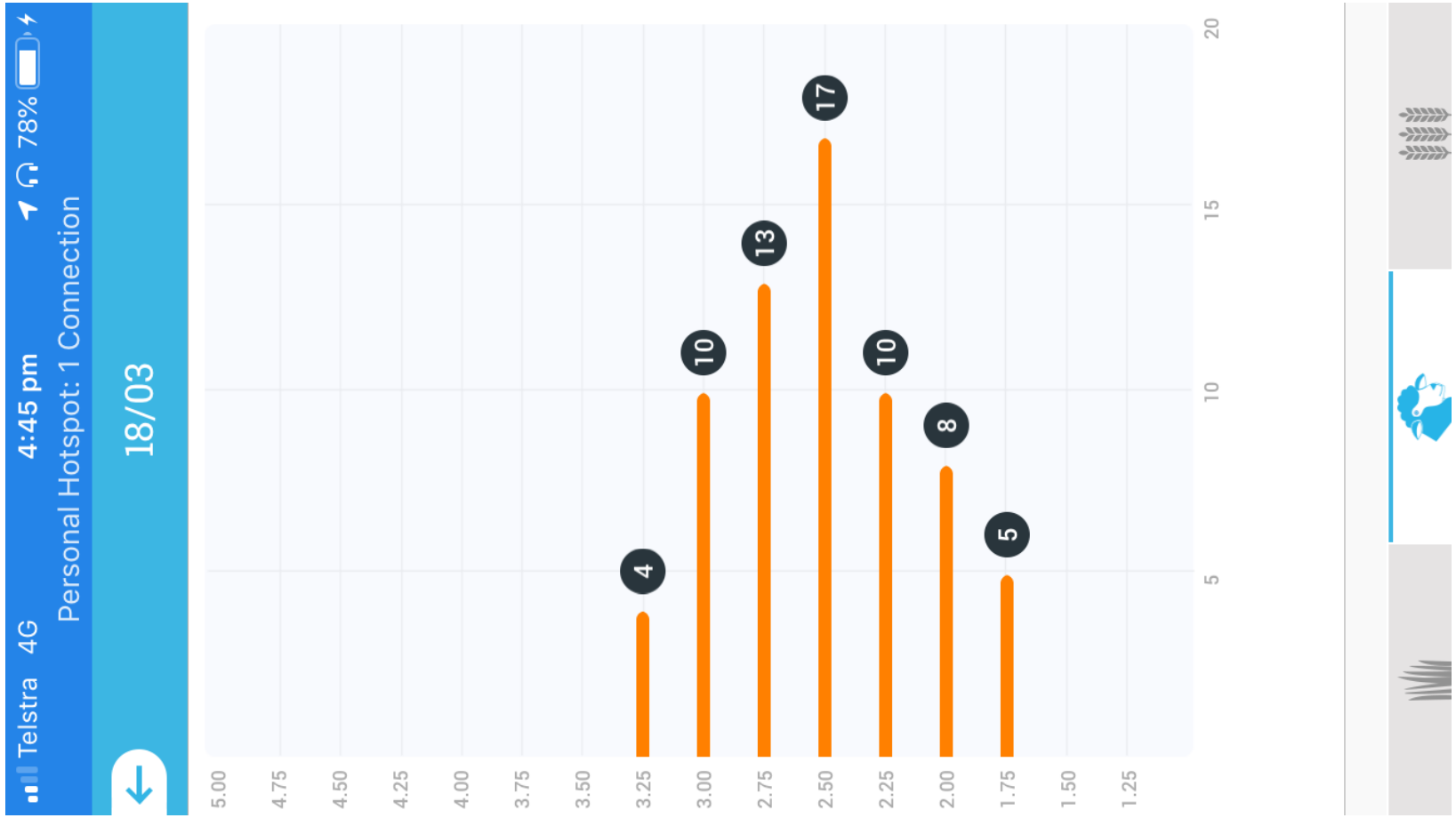
Declining?



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Condition score - sheep

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Condition score – cattle

Condition is scored on a scale of:

1 ⟵ **to** ⟶ **5**

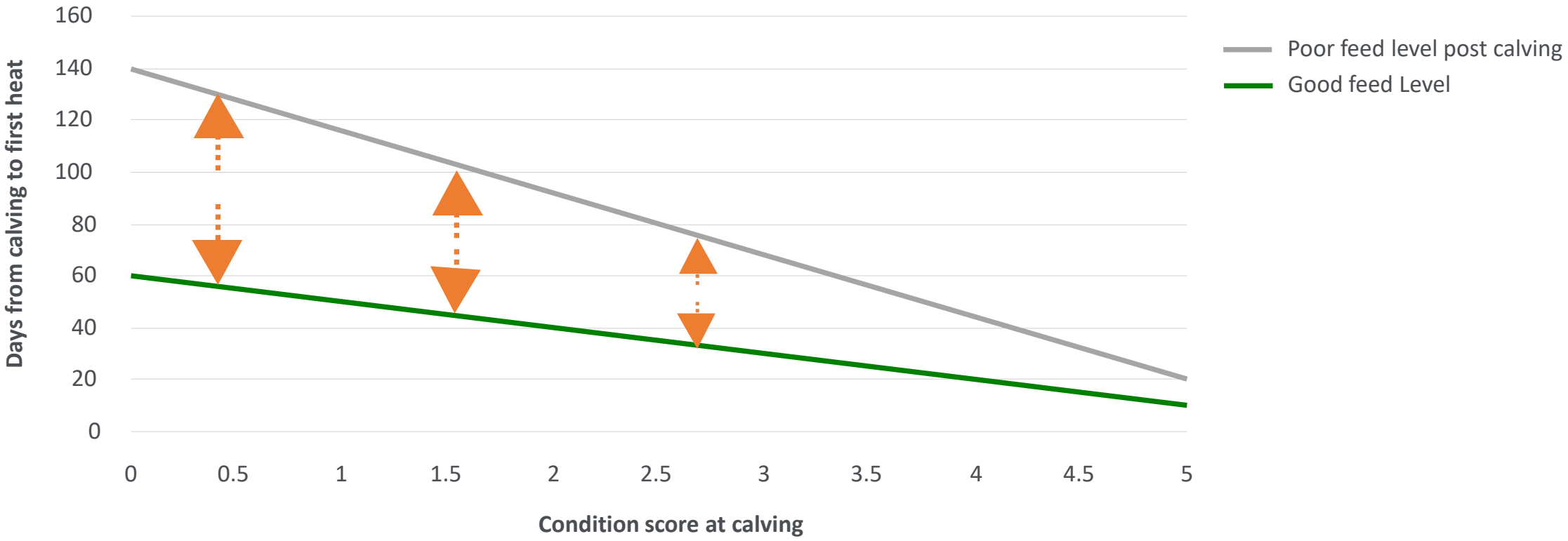
(extremely poor condition/underweight

(extremely over conditioned/overweight)

		
Condition score 2	**Condition score 3**	**Condition score 4**

Maintain condition scores above minimum guidelines to ensure animals meet welfare, health, growth and reproductive targets

Impact of CS at Calving and FOO on days to first heat



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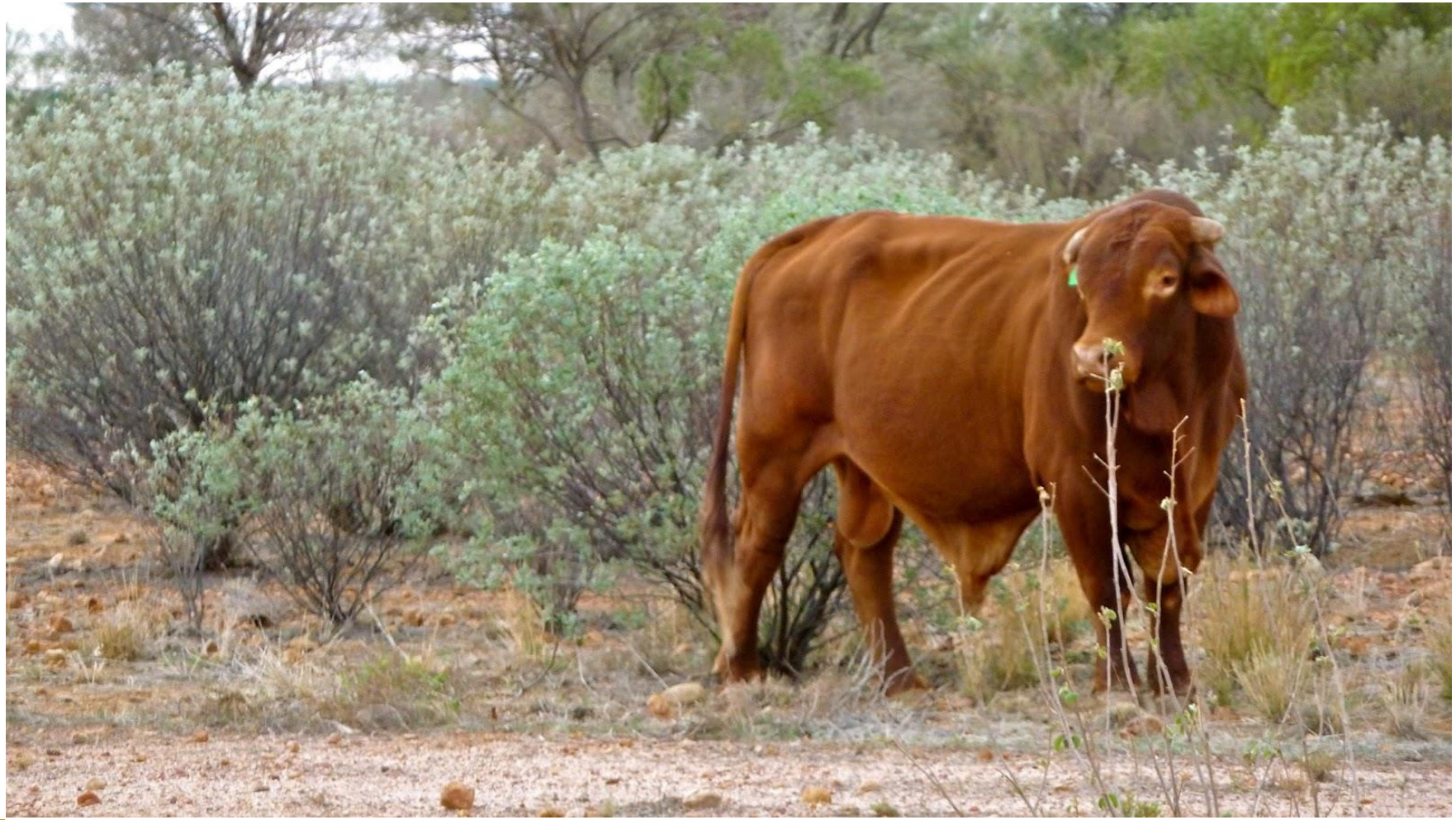
Are the stock getting what they need?



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Ewe requirements

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			

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Cow requirements

Table 15: DSE values for different classes of cattle (Figures from Prograze manual and adjusted for 1 DSE = 8.3 MJ ME — Meat and Livestock Australia and NSW Department of Primary Industries)

Livestock class	Body Weight (kg)		
Cows	**400**	**500**	**600**
Pregnant (last 3 mths)	8.2	10.1	11.9
Lactating (0–3 mths)	12.8	16.5	20.1
Lactating (150 kg calf)	16.5	20.1	23.8
Cow/calf average/year	12.5	15.6	18.6
Steers	**200**	**300**	**400**
Maintenance	3	4.2	5.4
0.5 kg/day	5.1	6.7	8.6
1.0 kg/day	6.6	8.8	11.3

Feed test

Neutral Detergent Fibre %	86	47	35
Acid Detergent Fibre %	53	27	26
Crude Protein %	< 2	6	23
DOMD %	< 38	65	65
Metabolisable Energy (MJ/kg)	< 4.3	10	10
*Water Soluble Carbohydrate %	< 4	35	12
Organic Matter %	92	96	88
Dry Matter %	92	95	89

What's in the feed?

Cannon ball – Wilcannia May 2020

DOMD	55%
CP	20%
ME	7.8 MJ

Blue bush – Wilcannia May 2020

DOMD	43%
CP	14%
ME	5.6 MJ

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Supplementary Feed

Feed Source	DM %	ME (MJ/ kg DM)	As fed ME /kg	$/ Tonne	$/ MJ	CP %
Cereal Hay	90	8	**7**	$250	$0.04	**5**
Lucerne Hay	85	9.0	**7.5**	$550	$0.08	**21**
Pellet	90	11.0	**10**	$550	$0.06	**16**
Barley	90	12.3	**11**	$250	$0.02	**11**
Lupins	90	12.5	**11**	$440	$0.04	**32**

Feed cost comparison

- ME pasture = 5 MJ
- Maintain condition
- MEm (60 kg) = (8.3 (1 DSE) x 1.2) = 10 MJ
- Supplement barley + buffer @ 500 g/hd/day = (11 x 0.5) = 5.5 MJ
- Ration cost = ($350 x 0.5)= 18 c/day = $5 (Feb) + $6 (Mar) + $7 (Apr).
- End of April (feed for 3 months)
- Ewes in CS 3
- Feed cost = $18 /hd

Feed cost comparison

- ME pasture = 5 MJ
- Lose condition @ 0.6 CS /mth
- End of March
- Ewes in CS 1.8
- Feed cost = $0/hd
- To get ewes back to CS 2.5 by end of April (impossible to get back to 3).

  Require ME surplus of 10 MJ

  Total ME req. = MEm(11 x 1.2) =13.2 + 10 = 23.2 = 2 kg barley + protein and buffer = $0.70/day
- CS 2.3
- Feed cost for April = $22/hd

It takes 3 times more feed to gain weight than to maintain weight.

- Cow 1 ; 500 kg - MEm = 55 MJ (6 DSE)
  - Pasture providing 3 DSE (30 MJ) – 25 MJ deficit
  - Supplement 3 kg of hay/silage per head per day
  - End of week 2
    - 42 kg hay, cow at 500 kg, cost $20

- Cow 2 ; 500 kg – MEm = 55 MJ (6 DSE)
  - Same pasture
  - No supplement in week 1
  - End of week 0 hay, cow at 496 kg, cost $0
  - To recover lost weight in week 2
    - 9 kg hay/hd/day (3 for maintenance + 6 to recover weight) = 63 kg , costing $31

Containment feeding

- Save ground cover
  - recovery
- Save labour
- Save feed
- Save water
- **Save money**

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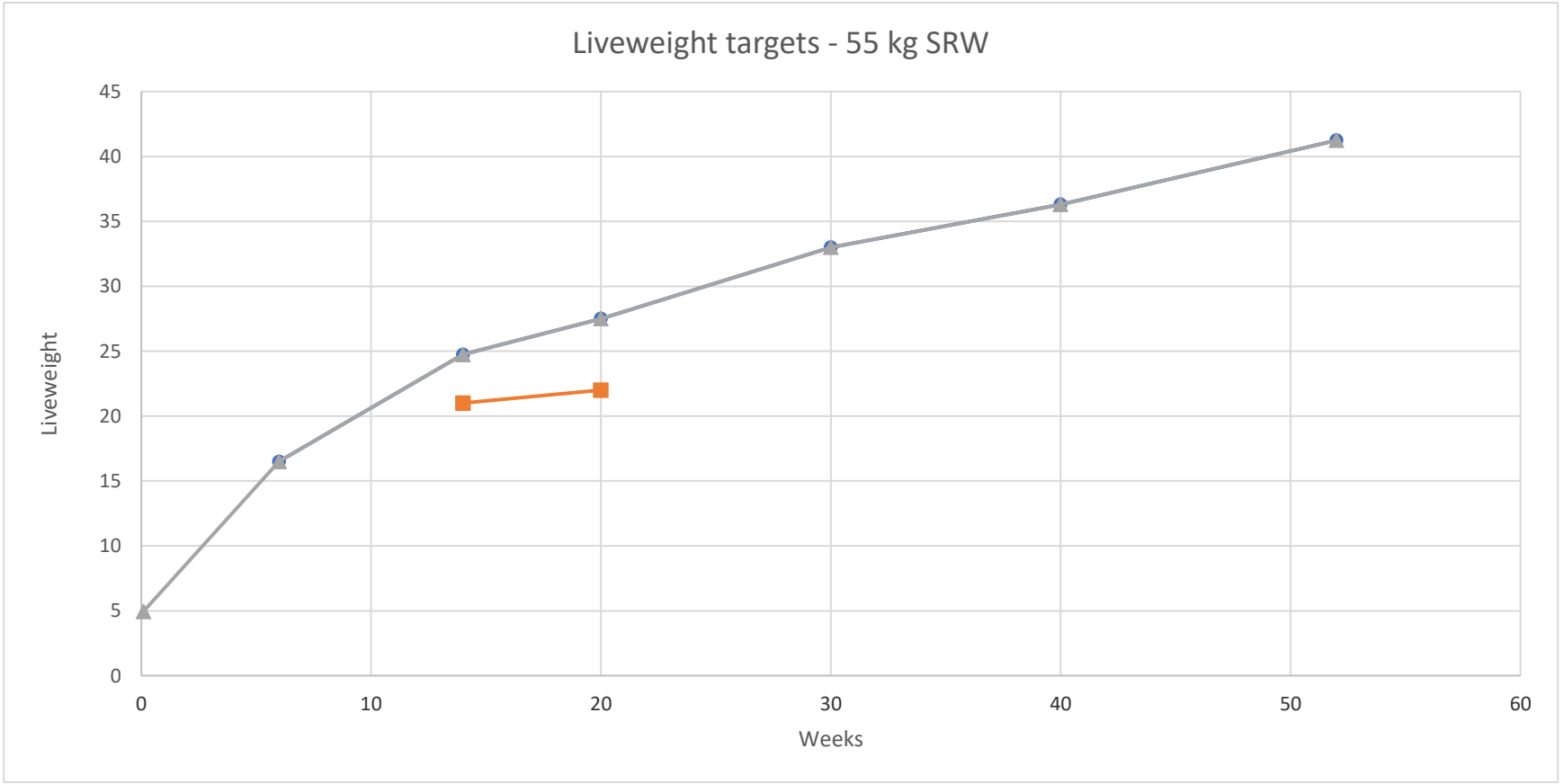
Weight for age



Green line – 70g/hd/day = 8 MJ/day @ 12% CP
Red line – 150g/hd/day = 11.5 MJ/day @ 15% CP

Example Budgets

60kg ewe, single bearing, Day 100 lactation

		GRAZING	CONFINEMENT
Requirements:	**10% CP**	**12.3 MJ**	**9.3 MJ**
Ration:			

		Kg/head/day	MJ	Kg/hd/day	MJ
Pellet	9.9 MJ/kg as fed	0.3	3.0	0	0.0
Cereal Hay	7.2 MJ/kg as fed	1.3	9.4	1.3	9.4
TOTAL			**12.4**		**9.4**
		14% CP		**8% CP**	

Example Budgets

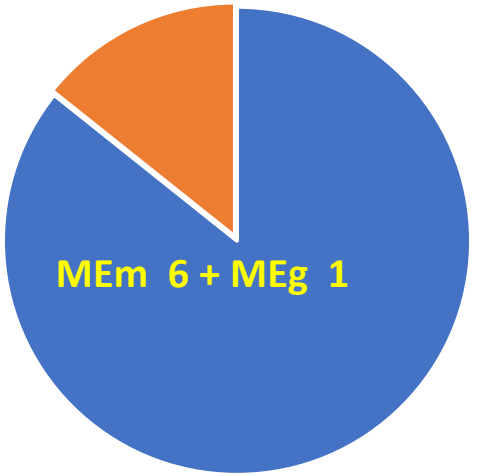
60kg ewe, dry

		GRAZING	CONFINEMENT
Requirements:	**8% CP**	**10.0 MJ**	**8.4 MJ**
Ration:			
Cereal Hay @ 7.2MJ as fed		1.4 kg/head/day	1.2 kg/head/day
30c/kg	8% CP	42c	36c
OR			
Pellets @ 9.9 MJ/kg as fed		1.0 kg/head/day	0.9 kg/head/day
45c/kg	16% CP	45c	40c

Maintenance or production

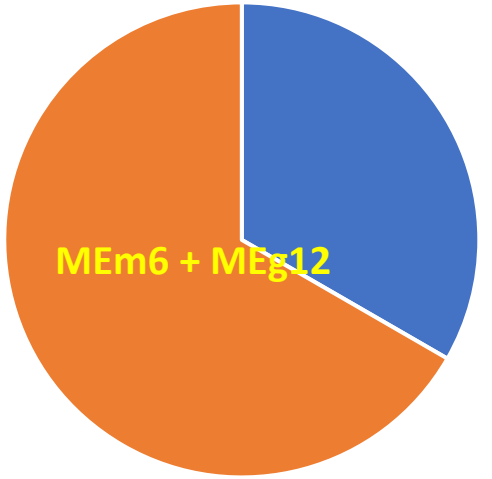
3 cents/MJ for 60 days

$10.80
$0



$12.60
$2.40

$21.60
$24



$32.40
$72

Mineral and urea supplements

- Energy is key
  - Buy megajoules not tonnes
  - DPI Drought Feeding App.
- Urea licks/blocks
  - Energy (carbohydrate) dependant
  - Dry or native (low CP) pastures, grains or fodders.
  - Maintenance
  - Counter productive if energy deficient
- Calcium : phosphorous
  - Calculi
  - Pica

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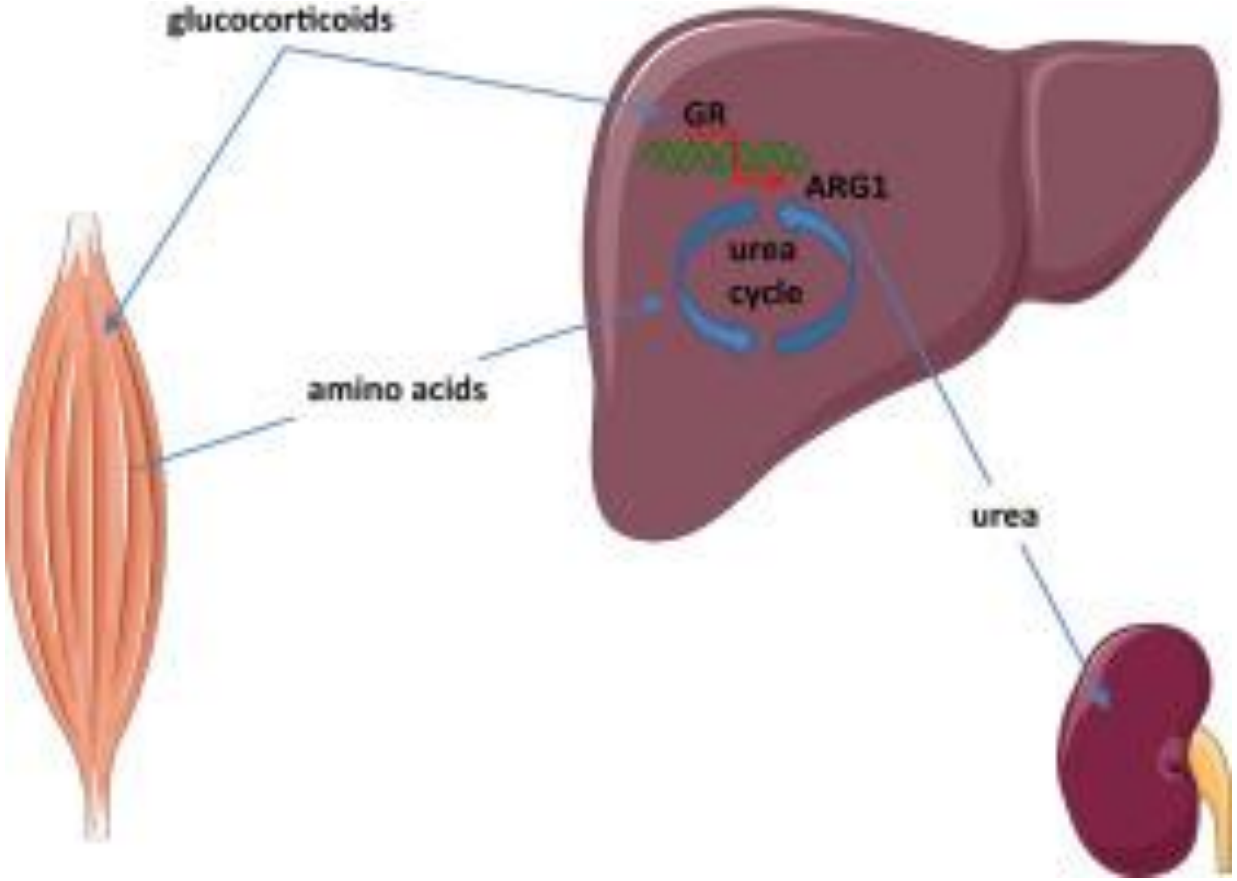
Protein catabolism

- Osteoporosis
- Kidney failure
- Liver damage



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Take home messages

- Manage condition score
- Containment feed to save time and money
- Mineral supplements work where apropriate

Tools and resources

MLA Producer demonstration sites

Western Division Merino weaner management.

MLA Stock rate calculators

https://etools.mla.com.au/src/?v=4&r=18&linking=1&&utm_campaign=160909_FFBK%20-%2029%20January

DPI/AWI/MLA Feed budget calculators.

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