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For the latest in red meat R&D

Maiden does may be the weak link to greater weaning rates

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Fundamentals

- Like the cow, oestrous cycle is 21 days
- Like the sheep, gestation is 5 months
- Puberty may be reached at 6-9 months, 15 to 27 kg
- Females are fecund (1.6 to 2.17 kids/doe kidding)

Literature review: Early pregnancy losses

Factor	Rate	Reference
Fetal mortality	2% at maintenance nutrition; 17% when 6% weight loss in mid-pregnancy	McGregor (2016)
	<7% at condition score 3; 20% at condition score 2 Nutritional stress 53-70% (Gest. Day 90-120)	Mellado *et al.* (2004) Mellado *et al.* (2004); Urrutia-Morales *et al. (*2012)
	First parity (i.e. maidens) higher risk Oldest does (>5 parities) higher risk	Mellado *et al.* (2004)

Fundamentals

- Reproductive success: age, weight, nutrition, season of birth & breed

Pregnancy scanning results (2019 field survey)

Pdn Zone	No. Farms	NDS	Fertility %	Scan %	Doe survival %	Kid survival %	Kids marked/ doe scanned
Rangelands	**5**	**5161**	**74%**	**122%**	**97%**	**77%**	**87%**
HRZ North	2	1710	69%	111%	98%	65%	72%
HRZ South	3	2316	66%	113%	94%	51%	58%
Total	**10**	**9187**					
Weighted mean			**72%**	**117%**	**96%**	**65%**	**77%**
Range			**45-97%**	**73-187%**	**80-100%**	**27-93%**	**37-130%**

NDS = Number of does scanned
NKM/DS = Number of kids marked per doe scanned

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Pregnancy scanning results

Age	Total	Fertility %	Scanning %	Kids per wet doe
Adult	4588	81%	136%	168
Mixed age	2587	74%	118%	159
Maiden	2012	48%	77%	161

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Maidens & adults (7 farms – known age & mob to marking)

Class	NDS	Fertility	Scanning	Kid survival	NRR
Adult	2952	86 %	147 %	61 %	77 %
Maiden	848	76 %	128 %	36 %	35%
Total	3800				

Fert x Scanning x Kid survival = Net Reproduction Rate (NRR)

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Closer examination of 4 farms (kidded same time)

Measure	Adult	Maiden	Significance
Does pregnant/doe scanned	0.84 ± 0.08	0.85 ± 0.03	0.62
Kids scanned/doe scanned	1.44 ± 0.17	1.45 ± 0.03	0.76
Kid survival	0.54 ± 0.09	0.35 ± 0.08	0.07
Kids marked/doe scanned	0.75 ± 0.15	0.53 ± 0.08	0.03

- Higher level of mgmt. (ie preg rate & scanning rate are not different)
- Despite that, kid survival is lower (tending to significant)
- Kids marked is statistically significantly different & lower in maidens
- Maidens are 40% of herd make up and rear 29% of kids

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Interested in mating during lactation?

- Rangeland producer, does re-joined, kids not yet weaned.

Class	Does	Fertility %	Scanning rate %
Adult Dry Udder	213	73%	122%
Adult Wet Udder	532	36%	59%
Maiden Dry Udder	48	48%	63%
Maiden Wet Udder	52	17%	27%
Whole farm	845	45%	73%

How to improve maiden performance

- Largest wastage appears to be kid survival, in managed & semi-managed herds

- Pregnancy scan
  - at least to remove non pregnant does from herd
  - consider scan fertility in adults and multiples in maidens

- Pregnancy scan 80-90 days after bucks are INTRODUCED
  - Difficult to do under continuous mating, or scan NP a second time (6 weeks later)

How to improve maiden performance

Managed herds able to scan for twins & manage separately:

- Twin doe management around D90-120:
  - Where possible ensure stable feedbase
  - Rising plane of nutrition, minimal handling of maidens
- Separate twin maiden does to best conditions

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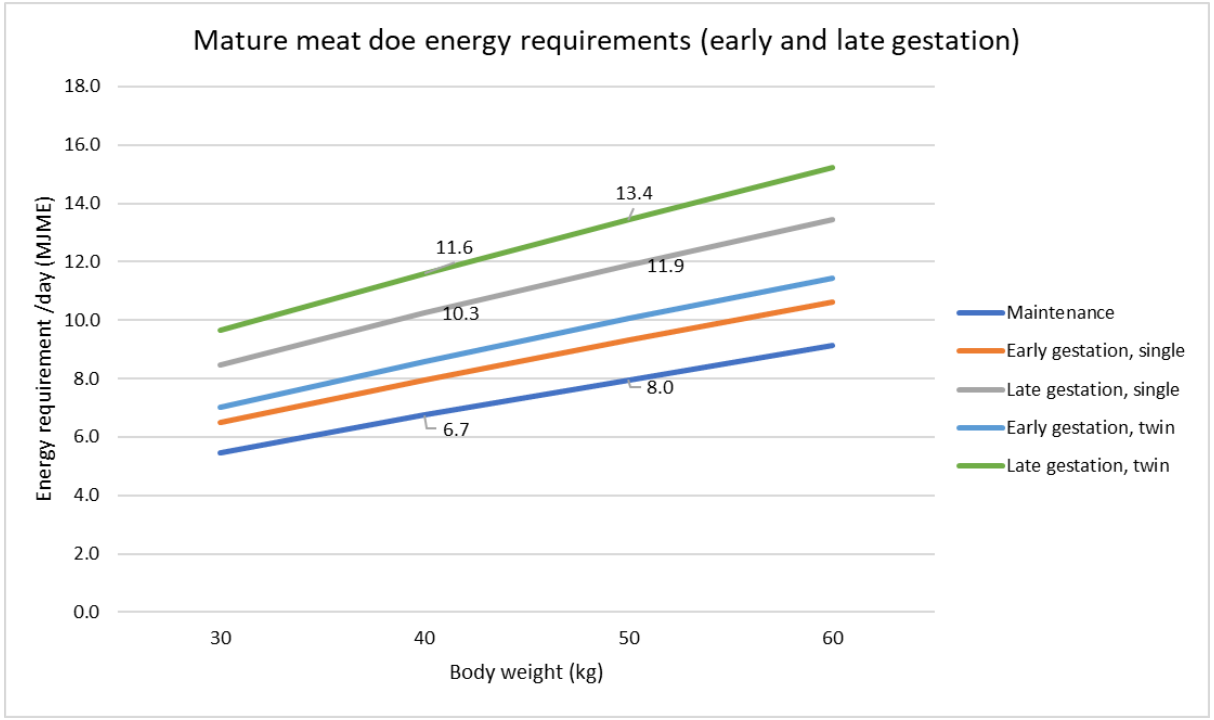
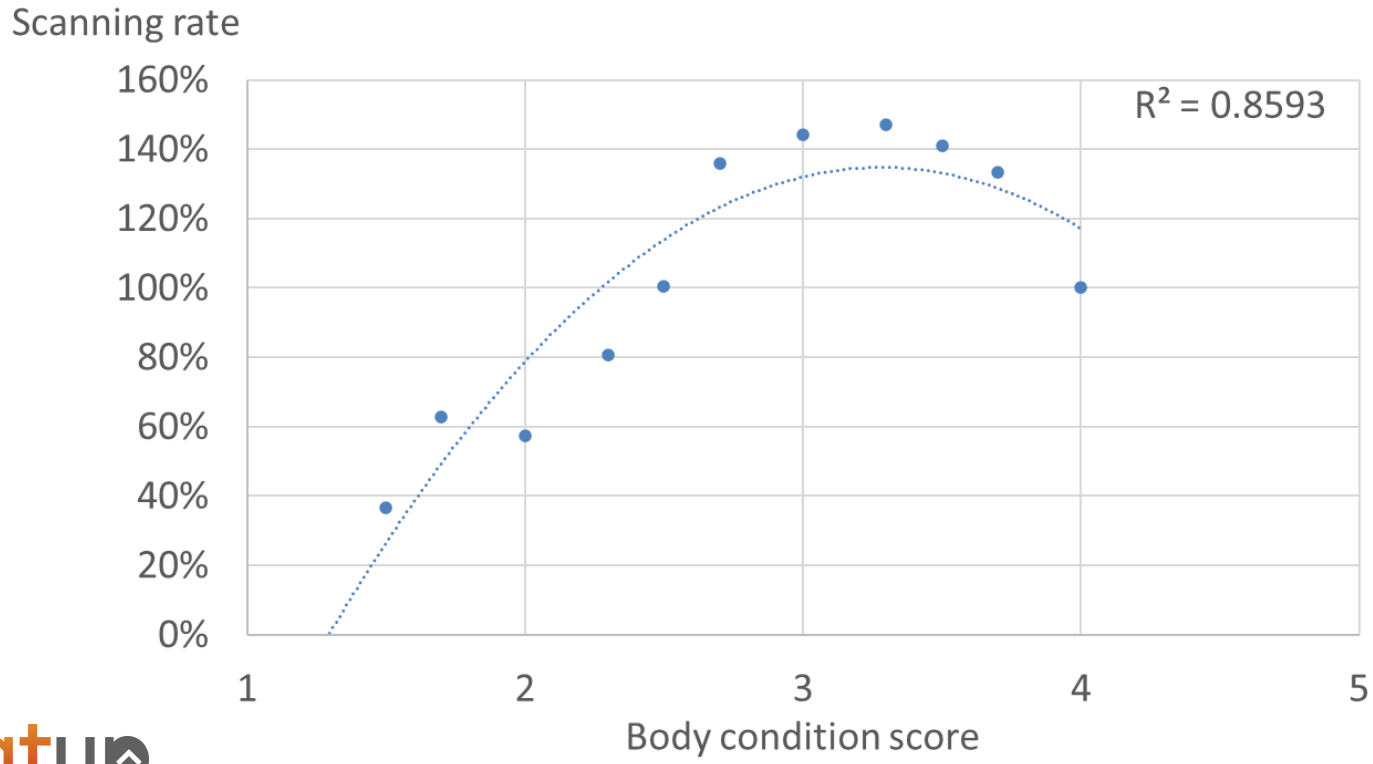
Energy requirements of mature does



Source: NRC (2007)

BCS & scanning rate; at scanning



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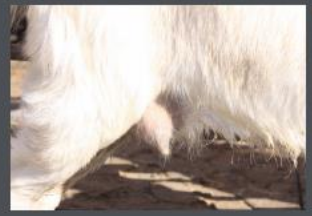
A guide to visual assessment of goats

1 Udder is well-shaped and even on both sides. Two functioning teats on either side of the udder that face downwards or slightly outwards and are evenly placed.




2 Udder is slightly uneven, or small. Two teats on either side of the udder that are unevenly placed, or slightly under or oversized, or slightly deformed.


3 Udder is uneven, excessively large or hangs low to the ground. More than two teats on either side, or teats that are deformed, misplaced, blunt, or extremely under or oversized.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Placing a cost on reproductive wastage

Jurisdiction	Managed Goats 2016 Ag Census	Estimated total does	Estimated milking and angora does	Estimated total meat does
NSW	231,061	106,011	6,862	99,149
Queensland	109,516	50,246	5,719	44,527
Victoria	35,735	16,395	14,296	2,099
South Australia	22,976	10,541	3,431	7,110
WA, Tas & NT	25,626	11,757	8,577	5,876
TOTALS	**424,914**	**194,950**	**38,885**	**158,761**

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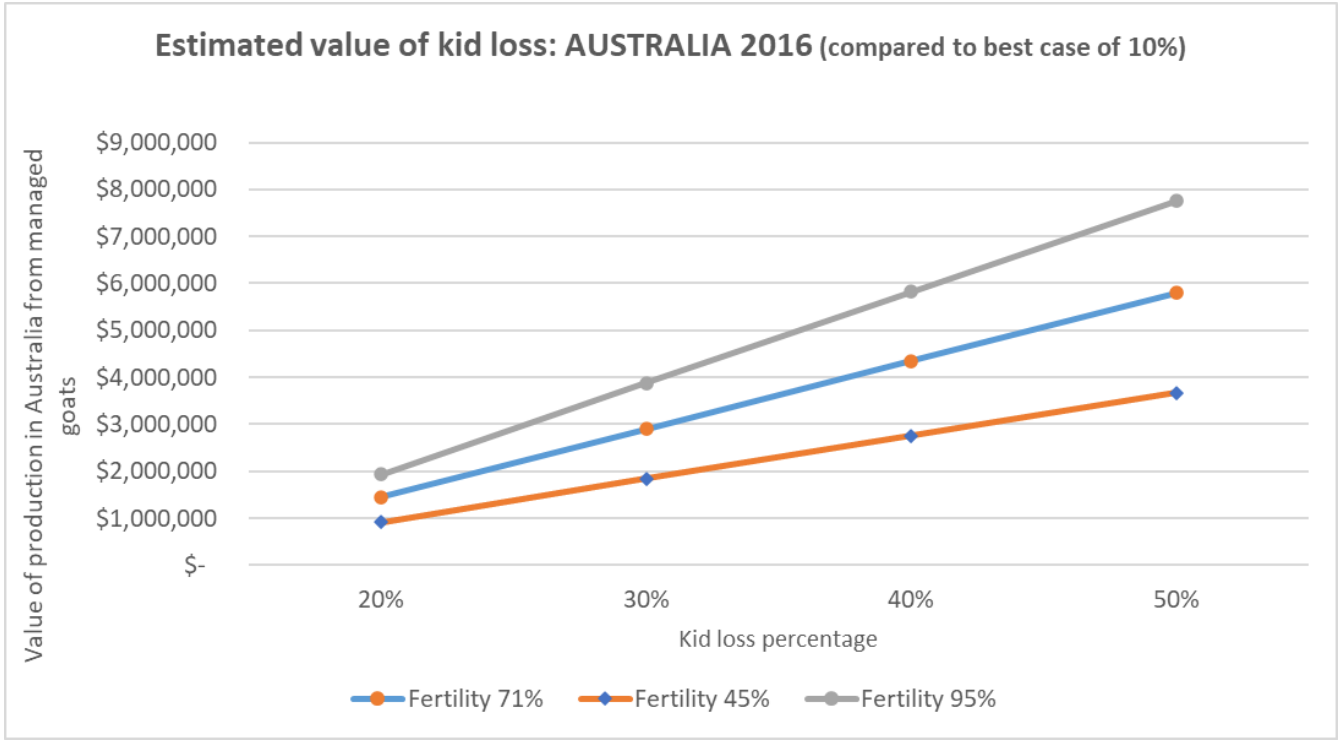
Value assumptions

- Average carcase weight 14.2 kg

- Average price $5.41 (5 year average in 2019)

The cost of kid loss



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Sensitivity to price and carcase weight

- The cost of 10% higher kid loss

Price ($ kg/cwt)			Spot price ($/kg cwt)
cwt (kg)	$5.41	$9.41	$8.13
14.2	$8.73	$15.18	$13.12
15.2	$9.34	$16.25	$14.04
16.2	$9.96	$17.32	$14.96
17.2	$10.57	$18.39	$15.89
18.2	$11.19	$19.46	$16.81

Take home messages

- Manage doe weaners & maidens for better growth & nutrition
- Start pregnancy scanning, couple with condition scoring
- Tidy up udders

Tools and resources

- MLA Report – Reducing Kid Loss – Select and Protect – Phase 1 B.GOA.1905
- Literature review (free download) - www.publish.csiro.au/AN/AN20161
- MLA Resources www.mla.com.au/extension-training-and-tools/going-into-goats/

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