



meatup FORUM

For the latest in red meat R&D

Improving goat productivity and profitability in the rangelands

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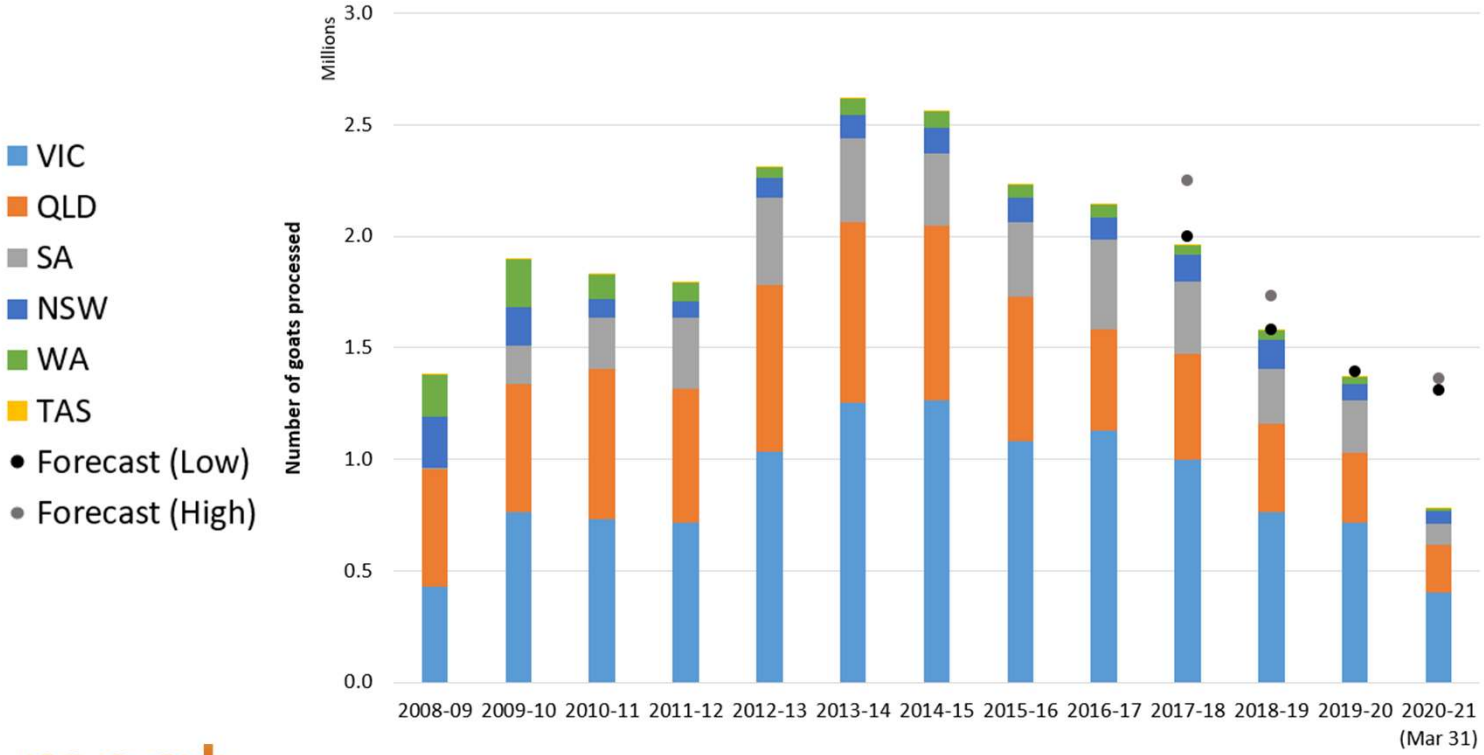

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MEAT & LIVESTOCK AUSTRALIA

Outline

- Rangeland goat industry current trends (Supply and demand)
- Factors that contribute to low kid weaning rates
- Management options to lift the reproductive performance and therefore productivity of goat enterprises
- Next steps
- Relevant tools and resources



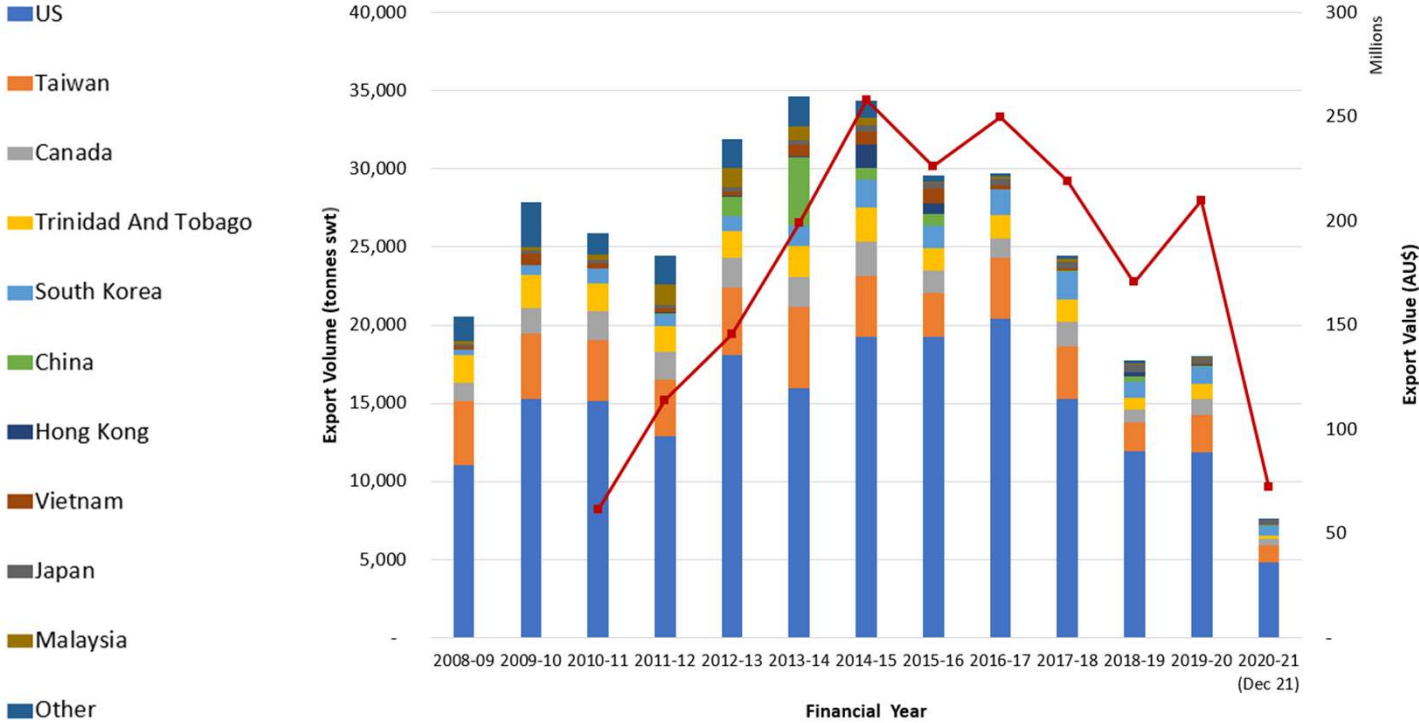
Current trends - Processing



Number of goats processed per financial year (2008-09 – 2020-21)
Data source: DAWE



Current trends – Export markets



Australian goatmeat exports by volume and value
(Data Source: GTA; MLA)



Current trends - Production

- Retaining does
 - Price
 - Goatmeat enterprises are competitive with lamb, beef and wool (Francis
 - Restocking option – drought recovery phase
 - Small stock options in western QLD (exclusion fencing)
- Rapid shift to managed enterprises
- Crossbreeding
- Integrated into enterprise mix



Pathways to high profits

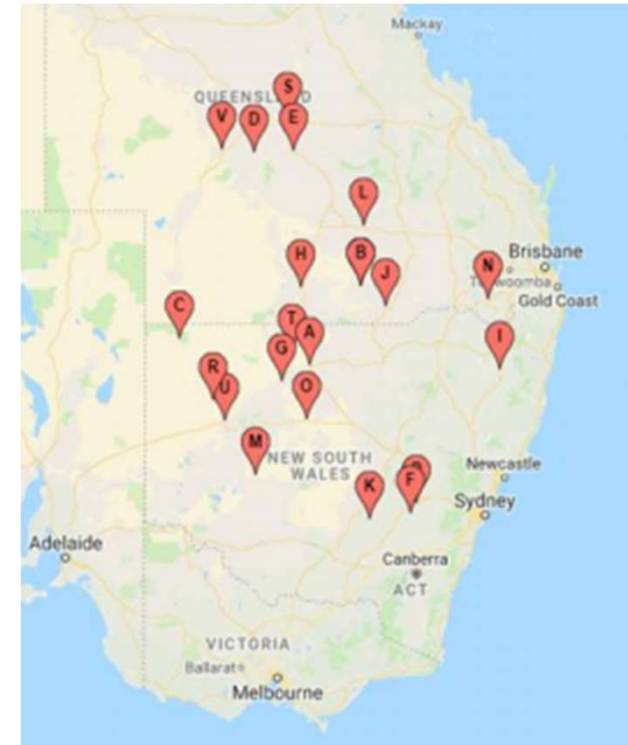
1. High-income/ high production strategy

- Higher per DSE production
- Higher per head turnoff weights
- Higher average prices received
- Higher cost structure per DSE
- Greater overhead expense level

2. Exceptional low cost structures

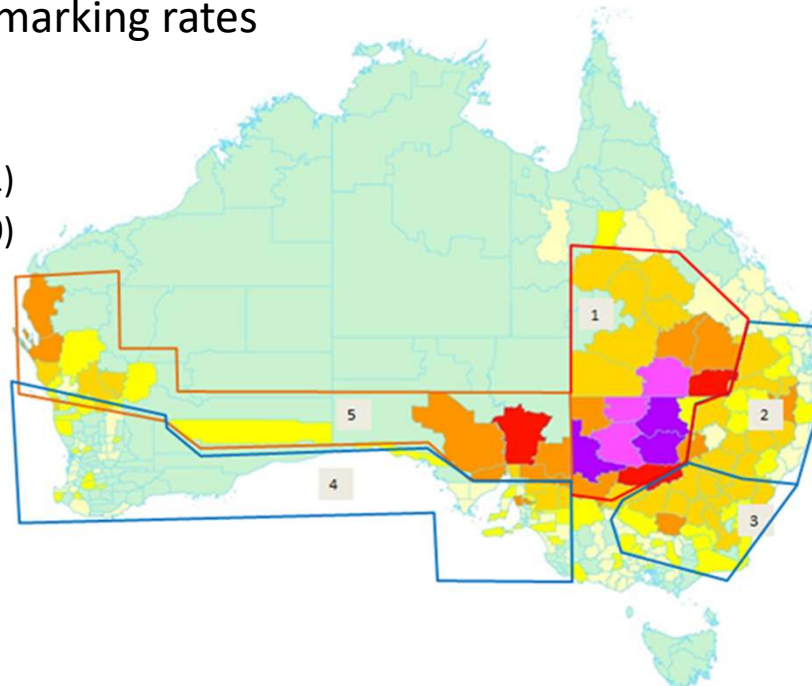
- Very low-cost structure
- Lower per head and per DSE production
- \$8 per DSE behind strategy 1

(Source: B.GOA.1903; Francis 2020)



Improving reproduction

- Reducing kid loss- select and protect (B.GOA. 1905; Refshauge *et al.* (2020))
 - Literature review (Robertson *et al.* 2020)
 - Pregnancy scanning and kid marking rates
 - >9000 does
 - 10 properties
 - Zone 1 – 5 properties (5161)
 - Zone 2 – 2 properties (1710)
 - Zone 3 – 3 (2361)



Reproductive wastage & loss of potential

- Failure to conceive
- Low fecundity (Single v multiple)
- Embryo loss
- Fetal loss (Day 40 to term)
- Perinatal mortality



Benchmarks

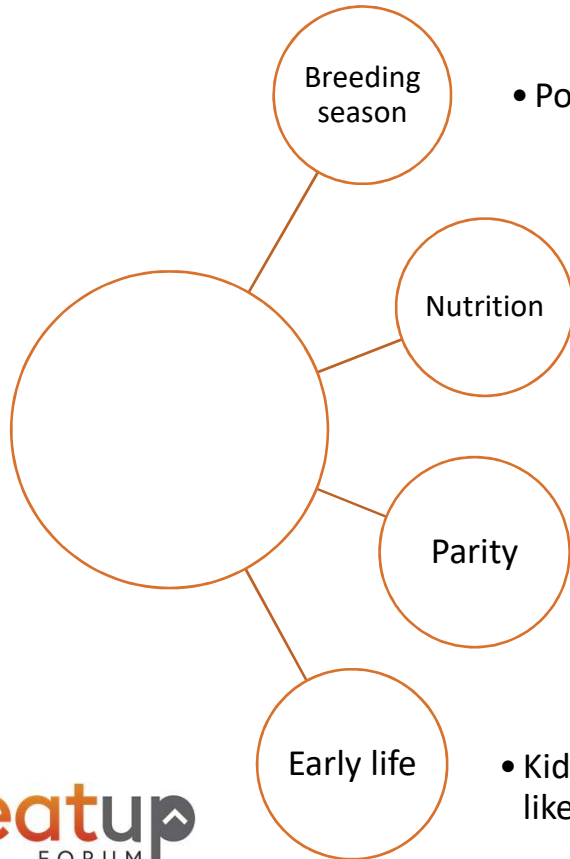
	On-farm scanning (Refshauge et al. 2020) (2019 data)	Literature review (Robertson et al. 2020)	References
Weaning rate/ Marking rate (No. kids/does joined)	38 – 130% Avg. 77% (marking %)	51- 165%	Robertson et al. 2020
Conception rate (Pregnant does / does joined)	45 - 97% (Avg. 72%)	<60% ->93%	Robertson et al. 2020; Nogueira et al. 2016)
Fecundity (Kids/pregnant doe)	1.36-1.97 (avg. 1.65)	1.23 -2.17 Kalahari – 1.6 Boer – 1.6-2.0 Rangeland - 1.96- 2.17	Norton 2004; Allan et al. 1991; Oderinwale et al. (2017); Erasmus (2000); Nogueira et al. (2016); Allan et al. (1991); Goodwin & Norton (2004)
Kid survival	27- 90% Avg. 65%	<20% - > 90% (KidPlan avg. to weaning 80%)	Lehloenya et al. 2005; Snyman 2010; Aldridge et al. 2015; Nogueira et al. 2016; Norton 2004; Browning et al. 2011; Nogueira et al. 2016

Benchmarks

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	On-farm scanning (Refshaug et al. 2020) (2019 data)	Literature review (Robertson et al. 2020)	Target (These are not established industry targets - Examples only)
Weaning rate/ Marking rate (No. kids/does joined)	38 – 130% Avg. 77% (marking %)	51- 165%	>160%
Conception rate (Pregnant does / does joined)	45 - 97% (Avg. 72%)	<60% ->93%	>90% (Adults)
Fecundity (Kids/pregnant doe)	1.36-1.97 (avg. 1.65)	1.23 -2.17 Kalahari – 1.6 Boer – 1.6-2.0 Rangeland - 1.96- 2.17	>1.65 (Adults)
Kid survival	27- 90% Avg. 65%	<20% - > 90% (KidPlan avg. to weaning 80%)	80%+

Conception rate



- Females mating:
 - During BS (April)- 90%
 - Outside BS (August –February)- 85%
- Potentially lower fertility of does that do mate out of season
 - During BS (March- July) – 86-89%
 - Outside BS <50%

(Restall 1992; Norton 2004)

- Lower levels of nutrition at mating reduce conception rates
- Bucks nutrition – increased activity and conception rates in does by 24 % on day 10 to mating

(Mani et al. 1992; Mellado et al. 2004; Urrutia-Morales et al. 2012)

- Maidens are likely to have lower conception rates
- Maiden 48%; Others 81%
- Conception rates also decline in does above parity of five

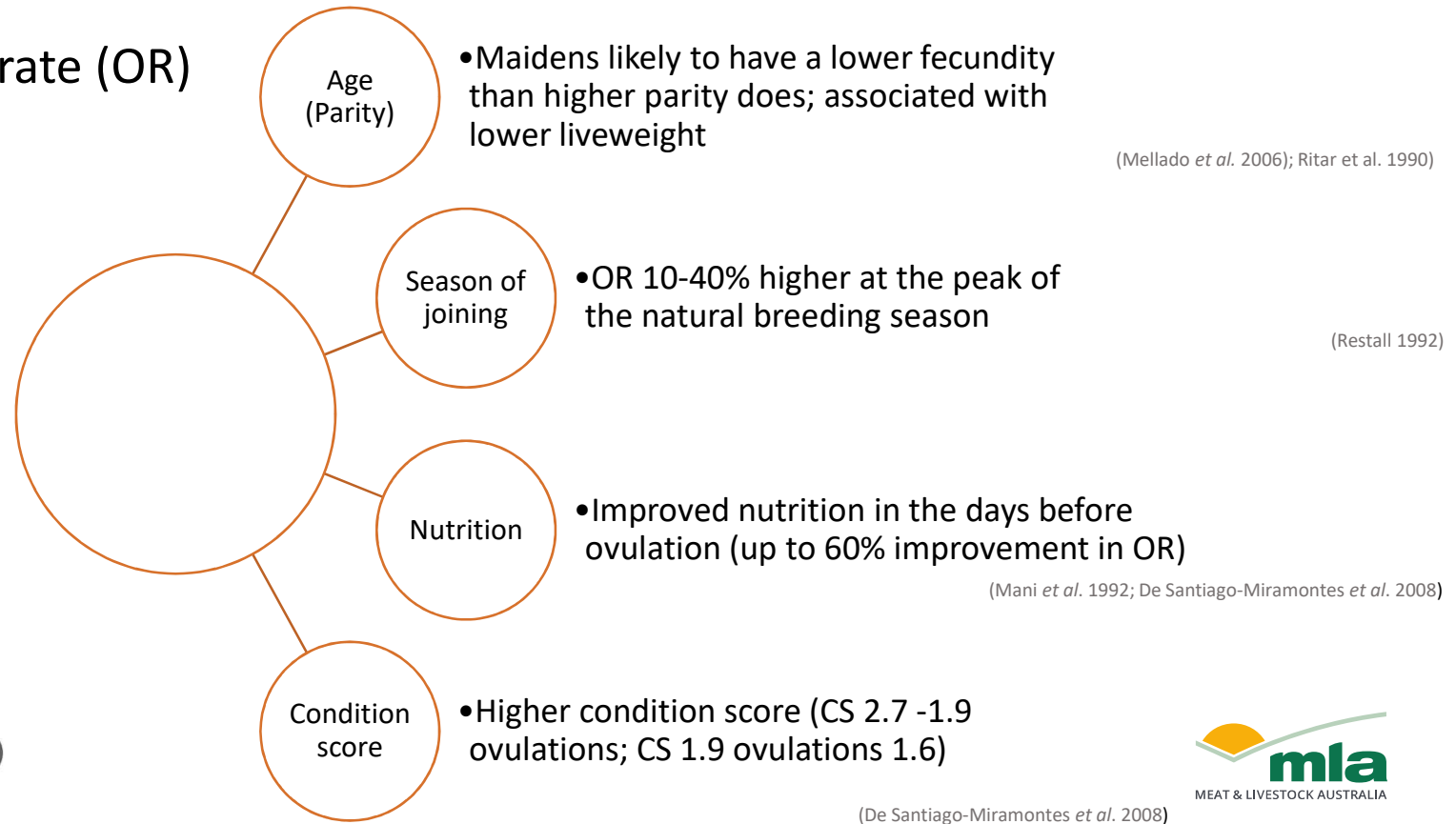
(Mellado et al. 2006; Refshauge *et al.* 2020)

- Kids lighter at birth or at 25 days of age were 20% less likely to conceive as adults

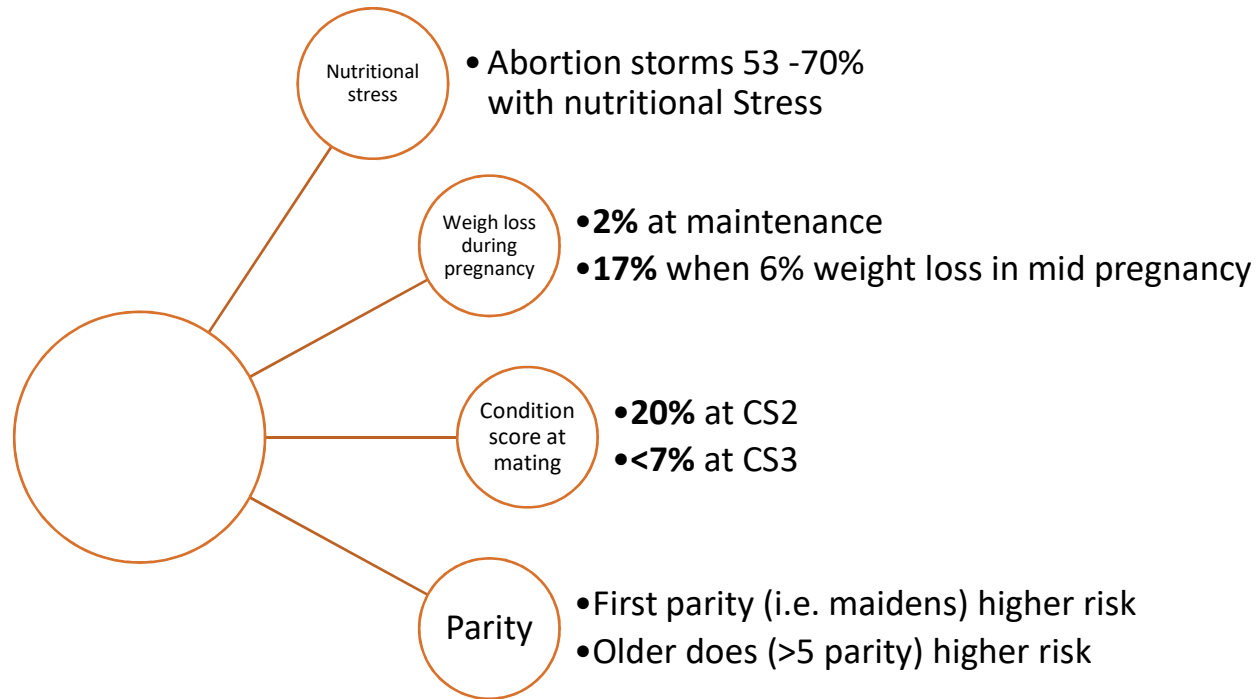
(Mellado et al. 2006)

Fecundity

- Ovulation rate (OR)



Reduce fetal loss



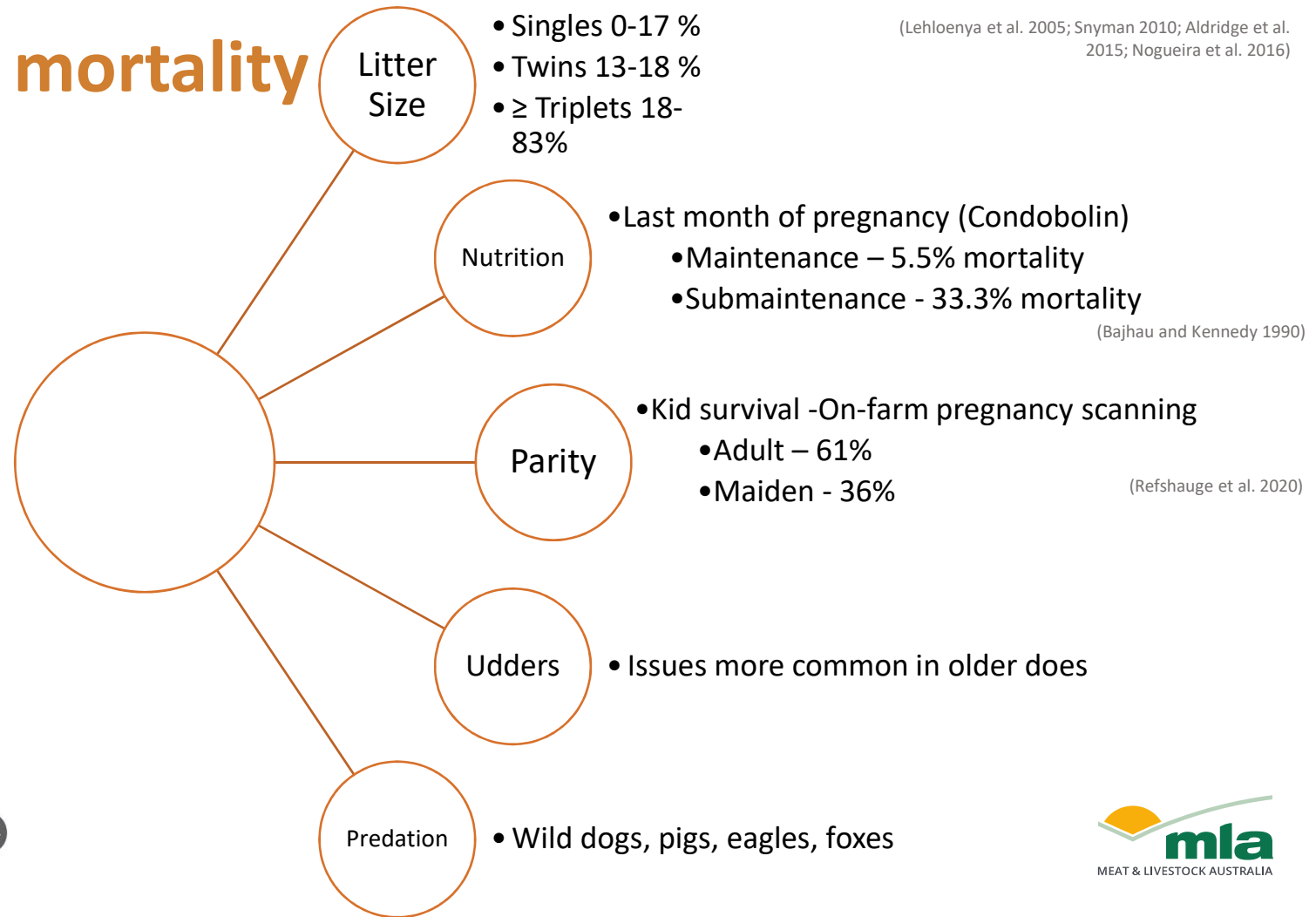
(Mellado *et al.* 2004; Urrutia-Morales *et al.* 2012)

(McGregor 2016)

(Mellado *et al.* 2004)

(Mellado *et al.* 2004)

Perinatal mortality

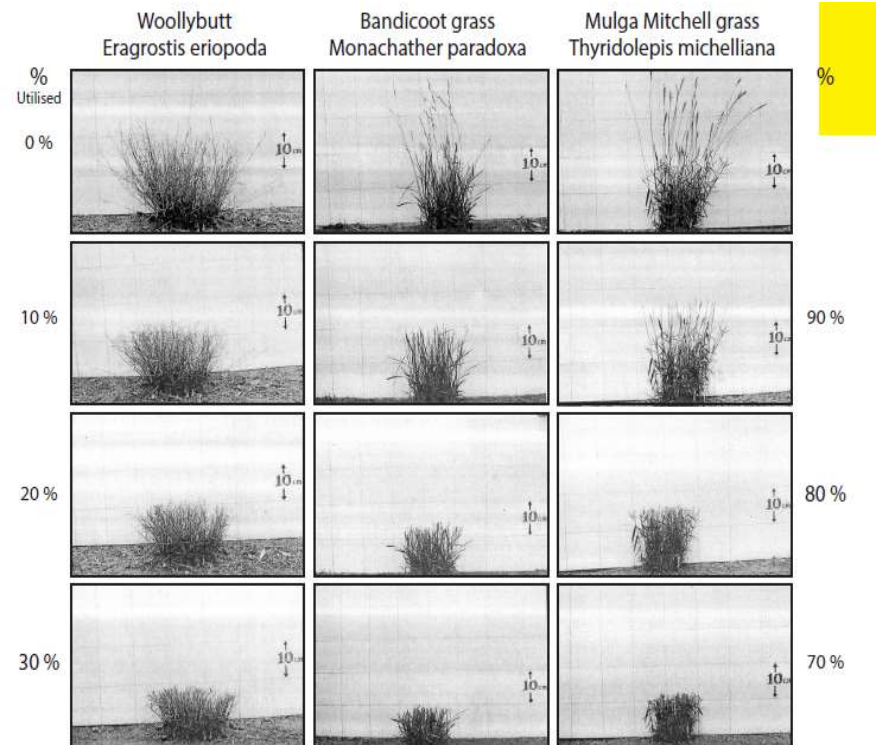


Actions to increase herd reproduction rates

- Manage the nutrition and body condition score of breeding does

- Grazing Management

- Stocking rate
- Strategic rest
- 'Condition' paddocks to respond to rainfall
 - Ground cover >50%
 - Perennial grass utilisation



Actions to increase herd reproduction rates

- Assess does for udder soundness annually before joining

Score

1	<p>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.</p> 
2	<p>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.</p> 
3	<p>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.</p> 

Actions to increase herd reproduction rates

- Collect performance data (e.g. pregnancy scanning results) and keep records to better understand your herd's performance



Actions to increase herd reproduction rates

- Provide targeted management to maiden does to maximise their reproductive potential and survival
 - Separate management
 - Age of joining

- Industry R&D recommendations



Next steps



- Attend the Western LLS Goat Production Field day, which will be held at Bourke in late July.
- Subscribe to the Goats on the Move eNewsletter
- Participate in a Tactical Grazing Management workshop— Contact NSW DPI or Western Local Land Services.
- Join a MLA Profitable Grazing Systems (PGS) ‘Getting Goats to Market’ group.
- Develop a Producer Demonstration Site.
- Register your interest in the proposed ‘Measured goats in the rangeland project’.

Take home messages

- To be well placed in the future, businesses need to assess their enterprise's production and financial performance and make decisions based on the data they collect and the records they keep
- There is large variation in the number of kids weaned per does joined among properties, indicating potential for gains. It is important to address both fertility and kid survival when aiming to improve weaning rates
- The productivity of goatmeat herds relies on successful breeding. Although goats are hardy and robust, they do require good nutrition and management to achieve high productivity.

Tools and resources

- The Going into Goats guide
- Give goats a go
- Goats on the Move e-Newsletter
- Global Snapshot – Goatmeat
- A guide to visual assessment of goats
- Rangeland goat production in western NSW: Where are they now? A review of 2012 case study enterprises

Research Publications

- Brady, M., Refshauge, G., Robertson, S., Atkinson, T., Allworth, B., and Hernandez-Jover, M. (2020). An exploratory study to investigate animal health and reproductive wastage among Australian meat goat producers. *Australian Veterinary Journal* 98(12): 602-609. <https://doi.org/10.1111/avj.13033>.
- Refshauge, G., Atkinson, T., Robertson, S. M., Hernandez-Jover, M., Allworth, B., Friend, M. (2020). Final Report (B.GOA.1905). Reducing kid loss- Select and protect. Phase 1. Meat and Livestock Australia.
- Robertson, S. M., Atkinson, T., Friend, M. A., Allworth, M. B. & Refshauge, G. (2020). Reproductive performance in goats and causes of perinatal mortality: a review. *Animal Production Science* 60(14):1669-1680. <https://doi.org/10.1071/AN20161>.

Acknowledgement

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