

Nutritional management of lambs prior to feedlot entry can effect feedlot growth rate

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Post-weaning growth rates of lambs are consistently less than potential and from a production efficiency perspective, having growth rate less than maximum is not desirable (Oddy and Walmsley 2013). Evidence suggests that lambs are most often nutrient deprived post-weaning and practical measures to increase nutrient availability are necessary to increase lamb growth rates. Specialist lamb finishing operations, such as lamb feedlots, have the ability to provide the unlimited intake of the necessary nutrients for unrestricted lamb growth; however it is not clear that lambs are reaching their genetic potential for growth. Modelling suggests that lamb growth rates greater than 400 g/day are possible depending on the maturity and mature weight of the animal however, in rare cases where reported post-weaning growth rates exceeded 400 g/day, it could be shown that this was more likely due to errors in measurement than actual lamb performance (Oddy and Walmsley, 2013). The purpose of this study was to determine if changing pre-weaning and post-weaning nutrient supply could allow lambs to better transition to the feedlot environment and improve lamb growth rates in the feedlot.

A replicated experiment was conducted in southern NSW from October 2019-February 2020. Single-born lambs (n=216) were exposed to one of four treatment groups for 42 days prior to weaning. The treatments included creep access to grain (barley and lupin mix), lucerne hay or both grain and hay, and a control treatment which received no creep supplement. At weaning lambs were assigned randomly to one of three post-weaning treatments; grazing irrigated lucerne with access to grain, grazing irrigated lucerne only or weaned directly into a feedlot. After 30 days, all lambs entered the feedlot for 38 days. The feedlot diet consisted of 70% barley grain, 25% whole lupins and 5% commercial mineral pellet and rumen buffer. The lambs also had unrestricted access to barley straw. A 16 day induction period introduced the grain diet gradually to lambs entering the feedlot. Statistical analysis utilised a linear mixed model in R.

Lamb growth rates pre-weaning did not differ significantly ($P>0.05$) between treatments (average daily gain [ADG] 373 ± 59 g/hd/day; live weight 35.4 ± 6.1 kg). Lambs that grazed lucerne post-weaning had significantly greater ($P<0.05$) ADG than lambs that were weaned direct into the feedlot (140 ± 79 v. 97 ± 90 g/hd/day). Feeding grain to lambs grazing lucerne post-weaning did not improve lamb growth rates. ADG of lambs in the feedlot during the final feedlot period was significantly greater ($P<0.05$) for lambs weaned direct into the feedlot (147 ± 95 g/hd/day) or that had access to grain when grazing lucerne during the post-weaning period (127 ± 78 g/hd/day) compared to lambs that grazed lucerne with no supplementation (79 ± 84 g/hd/day). Lamb live weight was not significantly different between post-wean treatments at the conclusion of the trial (43.4 ± 6.3 kg).

Preliminary results suggest no benefit from creep feeding lambs, which may relate to the high quality and quantity of feed available pre-weaning (Ates et al 2016; Moss et al 2009). Prior exposure to grain has been shown previously to improve acceptance (Savage et al 2008); however in the current study this was only true for lambs that were supplemented with grain during the post-weaning phase.

References

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