Growth rates and carcase characteristics of lambs fed CopRice® pellets during finishing

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Dietary composition could be expected to impact lamb growth rates, carcase yield and quality. This study compared the effect of different pellet formations (standard pellet or pellets with altered starch or protein source) or a grain ration on lamb growth rates and carcase characteristics.

On 21 January 2019, at Wagga Wagga Australia, 192 lambs were randomly allocated to one of four treatments after blocking for sex (1. Grain; 2. Standard Pellet; 3. Pellet with altered starch source; 4. Pellet with altered protein source). Within treatment, lambs were randomly allocated to pen (blocking for sex), with 8 pens per treatment. The 32 pens had been randomly allocated to the four treatment after blocking for replicate. Each pen contained six lambs. All rations included CopRice® VitaMinBuf pellets, and concentrates were gradually introduced over a 14 day period. Lucerne hay was provided for the first week, transitioning to straw as the roughage source thereafter. Lambs were weighed every 14 day without curfew and then on 26 March prior to transport to a commercial abattoir where they were killed on 27 March. Individual hot carcase weight, GR fat depth and pH decline were measured at the abattoir. Data were analysed in Genstat v20 and the level of significance was set at $P < 0.05$.

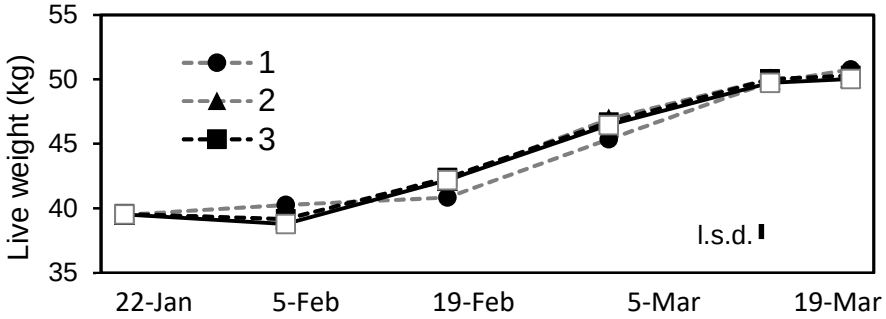

Fig. 1. Predicted mean lamb live weights between 22 January and 26 March. Treatment was 1. Grain, 2. Standard pellet, 3. Pellet and altered starch, 4. Pellet with altered protein source. Least significant difference (l.s.d) at P<0.05.

Lamb live weight at the commencement of the feeding trial was a significant term in the analysis of live weight, carcase weight and fat class (all $P < 0.001$) but not for other carcase data. Lamb live weights did not differ between treatments at the start or on 19 March and 26 March (Fig. 1). Mean live weight of lambs fed treatment 1 were higher than lambs fed ration 4 on 5 February. Lambs fed treatment 1 were lighter than lambs fed pellets on 19 February and lighter than treatments 2 and 3 on 5 March.

Table 1. The carcase data for lambs by treatment (1. Grain, 2. Standard pellet, 3. Pellet and altered starch source, 4. Pellet with altered protein source). Superscripts within rows identify means to be significantly different (P < 0.05). s.e.m. = standard error of the mean.

	Treatment					
	1	2	3	4	s.e.m.	P-Value
Dressing percentage	49.2[a]	51.0[b]	50.3[b]	50.8[b]	0.3	< 0.001
Hot carcase weight	24.6	25.5	25.9	25.1	0.6	0.235
GR Fat score	17.2	18.8	17.8	17.2	0.8	0.152
pH at 18 °C	5.84	5.87	5.93	5.93	0.05	0.234
Temperature at pH6	17.9	18.5	17.1	17.2	0.8	0.311
Final pH	5.38	5.40	5.42	5.42	0.02	0.203

Mean carcase weight and GR fat did not differ significantly between treatments. Likewise, the pH decline traits of pH at 18 °C, Temperature at pH 6 and Final pH were not influenced by treatment. Dressing percentage was higher for lambs consuming pellets compared to lambs in treatment 1, perhaps indicating final live weight of lambs in treatment 1 may have been increased by gut fill; however mean carcase weight did not differ between treatments, although it was numerically lower for the lambs in treatment 1 compared to other treatments (Table 1). It is concluded that changing the starch or protein source of pelleted diets has no effect on feedlot performance or carcase characteristics.

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