

Evaluation of Guar Meal Replacement Potential Instead of Some Conventional Meals for Feedlot Lambs

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Guar meal is a high-protein source for livestock feeding. Heat-processing produces a palatable and digestible guar meal that can be used instead of soybean and cottonseed (Rahman and Leighton 1968). Guar meal in finishing lambs ration showed an initial decrease in performance that was compensated in following step (Huston and Shelton 1971). Ahmed-Muna *et al* (2002) showed that guar meal can improve weight gain without an inverse effect on feed intake in low levels

This experiment investigated the replacement potential of guar meal. Thirty male feedlot Zel lamb divided into five treatment groups, maintained individually and fed the same feedlot ration (isocaloric and isonitrogenous), but each containing a different meal as protein source (Guar, Soybean, Canola, Cottonseed and Sunflower) for three consecutive months. Feed intake and weight changes were recorded weekly. The results are summarized in the following tables.

Table 1. Average feed intake (\pm S.E.) among treatment groups during the experiment [kg]

Meal	First Month	Second Month	Third Month
Guar	19.18 \pm 1.7 ^a	20.05 \pm 2.1	18.78 \pm 1.9 ^{ab}
Soybean	17.48 \pm 1.7 ^b	19.28 \pm 2.0	21.76 \pm 2.0 ^a
Canola	15.53 \pm 1.6 ^{ab}	18.72 \pm 1.7	18.53 \pm 1.9 ^{ab}
Sunflower	17.63 \pm 1.8 ^b	19.08 \pm 1.6	20.38 \pm 1.6 ^b
Cottonseed	15.48 \pm 1.6 ^{ab}	19.75 \pm 2.0	18.73 \pm 1.7 ^{ab}

In each column, means with different superscript letters are statistically different ($p < 0.05$)

Table 2. Average weight gain (\pm S.E.) among treatment groups during the experiment [kg]

Meal	First Month	Second Month	Third Month
Guar	2.17 \pm 0.11 ^a	2.21 \pm 0.10	1.92 \pm 0.11
Soybean	1.93 \pm 0.09 ^b	2.18 \pm 0.11	2.04 \pm 0.09
Canola	1.85 \pm 0.09 ^b	2.40 \pm 0.10	2.00 \pm 0.11
Sunflower	1.83 \pm 0.10 ^{ab}	2.10 \pm 0.09	1.78 \pm 0.09
Cottonseed	1.58 \pm 0.08 ^c	2.17 \pm 0.10	1.74 \pm 0.09

In each column, means with different superscript letters are statistically different ($p < 0.05$)

Table 3. Average feed conversion ratio (\pm S.E.) among treatment groups during the experiment

Meal	First Month	Second Month	Third Month
Guar	9.66 \pm 0.53	10.06 \pm 0.46	10.29 \pm 0.50
Soybean	9.42 \pm 0.51	9.66 \pm 0.43	10.65 \pm 0.46
Canola	8.79 \pm 0.51	8.64 \pm 0.48	10.01 \pm 0.52
Sunflower	10.38 \pm 0.54	9.82 \pm 0.46	11.07 \pm 0.51
Cottonseed	11.09 \pm 0.48	10.30 \pm 0.51	10.94 \pm 0.48

Results showed that guar meal group has greater feed intake versus other groups, especially in first month ($p < 0.05$). Furthermore, weight gain in guar meal group was greater than others in first month ($p < 0.05$). Feed conversion ratio was the same among groups ($p > 0.05$). At the end of the experiment, economic efficiency in guar meal group was better than other groups. In conclusion, guar meal is introduced as a suitable replacement for conventional meals in feedlot lambs without any side effects.

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