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Effect of a Herbal Growth Enhancer Feed Additive on Lamb Performance

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Abstract: The consumer of lamb meat relates the potential development of animals to use of growth promoters however, now-a-days the alternative nonantibiotic feed additives have improved the animal performance and health. The objective of the present trial was to evaluate the use of the herbal natural growth promoter in lamb production. Assessment was based on the performance of the animal when fed a commercial diet and the use of the herbal natural growth promoter. With the herbal, lamb weight and average daily gain were 0.270 g ($p<0.05$) however, the feed intake was not affected ($p>0.05$). The level of the herbal promoter had no effect on the back fat ($p>0.05$). Based on the results of the study, it could be concluded that with the herbal growth promoter, performance of the lambs can be improved.

Key words: Lamb, feed additive, herbal growth promoter, performance, assessment, non antibiotic

INTRODUCTION

Actual research in producing animal aims to use natural additives in the feed to replace antibiotics mainly with promoters such as probiotics, prebiotics, feed enzymes organic acids and herbal extracts in order to achieve the production goal (Ashayerizadeh *et al*., 2009; Buchanan *et al*., 2008; Cullen *et al*., 2005; Hanczakowska and Swiatkiewicz, 2007; Hashemi and Davoodi, 2010; Sanchez *et al*., 2009). Herb mixtures may be prepared containing individual ingredient or in mix in the diet and the resulted product is of favorable acceptance by the consumer.

Animal research has shown that certain herbal promotes growth in productive intensive systems (Langeroudi *et al*., 2008; Hashemi and Davoodi, 2010; Sanchez *et al*., 2009; Worku *et al*., 2009) but the results are contradictory. Furthermore, no studies have reported the effect of an herbal extract mixture as growth promoting agent on the lamb performance.

MATERIALS AND METHODS

Eighteen Pelibuey x Hampshire male lambs (averaged 20 kg of initial body weight) were used in the present study to evaluate the phytogenic growth promoter Fortimax™ [Herbal extracts (*Illicium verum*, *Aloe vera*, *Passiflora* sp., *Petroselinum sativum*, *Allium cepa*, *Rosmarinus officinalis*) and Neutraceutical (extracts of *Avena sativa*, *Yucca schidigera*, *Arnica longifolia*, *Chrysanthemum cinerariaefolium*, *Cynara scolymus*) and terapeuticals (somatotropin and hypofisis extract) was used at the rate of 1 kg ton^{-1} of feed. Animals were housed in a 40% covered shelter. The stalls size was of 3×3 m had individual feeder and housed randomly assigned lambs.

Prior to the beginning of the experiments animals were vaccinated for endemical diseases and were dewormed using a broad spectrum product. The lambs were fed an 80% ground sorghum-based ration which fulfilled the nutrient recommendation.

Feed was daily prepared and offered allowing a 10% refusal. Animals were weighted at the start and at the end of the experiment to asses daily body weight gain considering the initial weight as co-variable for statistical analysis.

Back fat was measured between the 10 and 12th rib when the lambs reached 35 kg and this was performed using an ultrasound equipment (Simadzu; Linear ultrasound scanner, Model SDL-32C). The trial followed the procedures approved by the animal care and use committee of the campus Los Altos, University of Guadalajara.

The statistical analysis of data was performed establishing an alpha of 0.05 to declare differences among both treatments using the SAS package.

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RESULTS AND DISCUSSION

Feed intake of the lambs averaged 1.16 kg day^{-1} and was slightly increased with the herbal extract compared to the control treatment ($p>0.05$; 1.14 vs. 1.18 kg day^{-1}). However, the daily gain of weight was 50 g more with the herbal compared to control ($p<0.05$; 0.249 vs. 0.293 kg day^{-1}). The feed to gain ratio was lower for the lambs consuming the herbal extract ($p<0.05$; 5.03 vs. 3.72) which means the need of more kilograms of feed in the control group to achieve the same performance. The latter implies the need of lesser days ($p = 0.07$; 63.5 vs. 53.57 days) to reach the market weight with the herbal extract and the related economical save for the lamb producer. Furthermore, the dorsal fat was slightly reduced with the plant extract ($p>0.05$; 5.08 vs. 5.00 mm).

CONCLUSION

Based in the results, we can conclude that with the use of alternative growth promoter the productivity of the labs can be improved.

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