



## Effect of Different Dietary Energy Level on Growth Performance of Fattening Ram Lambs

N. Arulnathan\* and M. Chellapandian

Department of Animal Nutrition,  
Veterinary College and Research Institute, Tirunelveli-627 358, Tamil Nadu, India  
Tamil Nadu Veterinary and Animal Sciences University (TANUVAS)

\*Corresponding Author E-mail: [drarulnutri@gmail.com](mailto:drarulnutri@gmail.com)

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### ABSTRACT

*This trial was taken to assess the growth performance and economic efficiency of diets with different energy level on fattening of Mecheri ram lambs. Twenty four weaned Mecheri ram lambs were selected randomly and divided into three groups of 8 lambs in each. Animals in Group I (Low energy-LE), group II (Medium Energy-ME) and group III (High Energy-HE) were fed with the concentrate mixture having 65,70 and 75 per cent of TDN respectively and having similar crude protein level (CP-18 %) by using locally available feed ingredients and fed with chaffed Hybrid Bajra Napier Grass ad libitum as a source of roughage for a period of 90 days in stall fed condition. Body weight were taken at fortnightly interval and Feed intake, growth performance and cost economics of different groups were assessed. The overall body weight gain and average daily weight gain were significantly ( $P < 0.01$ ) higher in HE when compare to ME and LE group. It was concluded that the supplementation of concentrate could be advised for best economic returns in fattening of ram lambs.*

**Keywords:** Ram lambs - dietary energy level- growth performance

### INTRODUCTION

Sheep are important meat producing animals in Tamil Nadu. Among the ten recognized breeds available in Tamil Nadu, Mecheri breed of sheep stands superior in productivity and draught tolerance. The major problem in sheep nutrition is to provide the essential nutrients in adequate amount to satisfy the requirements of the animal at an economical cost. The proper growth and development of growing lambs depends heavily on the animal's level of nutrition. The primary principle of intensive

lamb fattening process is concerned with the use of intensive feed ingredients in order to benefit the high rate of development in the lambs early ages. Average daily gain increased and feed efficiency was improved as protein and energy levels in the diet were increased (Ebrahimi et al., 2007). Energy is the major dietary element that is responsible for the different utilization of nutrients and thereby the productivity and gain of an animal (Hosseini et al., 2008).

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However comparison of growth performance and economic efficiency of diets with different energy level for fattening of Mecheri ram lambs are lacking in literature. Hence a research trial was conducted to assess the growth performance and economic efficiency of diets with different energy level on fattening of ram lambs.

## MATERIALS AND METHODS

Twenty four weaned Mecheri ram lambs were selected randomly and divided into three groups of 12 lambs in each. All animals were maintained under stall fed condition. Three concentrate mixtures were prepared with similar protein (18% CP) and different energy level (65%, 70% and 75% of TDN) by using locally available feed ingredients.

**Table 1: Ingredient composition of the experimental diets with different energy level**

Ingredients	Low Energy Diet(LE)	Medium Energy Diet (ME)	High Energy Diet(HE)
Maize	4.75	20.53	38.28
Broken Rice	25.00	25.00	30.00
DORB	46.00	28.55	0.50
Soya bean meal	19.25	21.93	26.77
Salt	1.50	1.50	1.50
Calcite	3.50	2.44	1.49
DCP	-	0.058	1.46
Total	100.0	100.0	100.00
Cost of Feed (Rs.)	19.15	19.55	20.55
CP (%)	18	18	18
TDN (%)	65	70	75

❖ Trace mineral premix was added at the rate of 250gm/MT in all three diets.

Animals in Group I, II and III were fed with the concentrate mixture having 65,70 and 75 per cent of TND respectively for a period of 90 days. The costs of the concentrate mixture were calculated for economic analysis. Animals in the three groups were fed with ad libitum roughages. Body weight were taken at fortnightly interval and Feed intake, growth performance and cost economics of different groups were assessed by ratio between revenue by the price of body weight gain and feed cost. The data were analyzed statistically (Snedecor & Cochran, 1994).

## RESULTS AND DISCUSSION

The total weight gains in three groups were  $5.53 \pm 0.62$ ,  $6.93 \pm 0.48$  and  $8.41 \pm 0.29$  kg respectively for LE, ME and HE groups. The average daily gains (g) were  $61.39 \pm 6.89$ ,  $76.95 \pm 5.35$  and  $93.47 \pm 3.26$  respectively for LE, ME and HE groups. There was no significant difference in daily dry matter intake. The overall body weight gain and average daily weight gain were significantly

( $P < 0.01$ ) higher in HE compare to ME and LE group; the reason could be higher plane of nutrition that supplied adequate essential nutrients for body growth. These results were agreed with Ebrahimi et al. (2007), Hosseini et al. (2008). The economic efficiency was higher for lambs fed on high-energy diet compared with other treated groups (Abdel, 2011). Hence, the net profit earned was also high in HE group than ME group and LE group based on the additional body weight gain and price fetched by this additional weight. It was concluded that the supplementation of high energy concentrate could be advised for best economic returns in fattening of Mecheri ram lambs at stall fed condition.

## CONCLUSION

Rearing of ram lambs is a now becoming a popular enterprise in our state. In order to guide the farming community for better utilization of the available resources and to get higher profit higher plane of nutrition have

to be supplied to the lambs that in turn supplied adequate essential nutrients for better body growth. It was concluded that the supplementation of high energy (TDN 75%) concentrate along with the roughages could be advised for best economic returns in fattening of Mecheri ram lambs production.

#### REFERENCES

- Abdel-Baset, N. Sayed. (2011). Effect of Different Dietary Energy Levels on the Performance and Nutrient Digestibility of Lambs. *Veterinary World*, 2(11), 418-420.
- Ebrahimi, R. (2007). Effect of energy and protein levels on feedlot performance and carcass characteristics of Mehraban ram lambs. *Pak. J. Biol. Sci.*, 15(10), 1679-1684.
- Hosseini, S.M. (2008). Effect of different energy levels of diet on feed efficiency, growth rate and carcass characteristics of fattening lambs. *J. of Anim. & Vet Adv.*, 7(12): 1551-1554.
- Snedecor, G.W., & Cochran, W.G. (1994). *Statistical Methods*, 8th Ed. Oxford and IBH publishing Co. Pvt. Ltd., New Delhi, India, pp.254-268.