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Effects of Different Production Systems on Growth Performance and Carcass Quality of Lohi Lambs in Pakistan

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Abstract

A study was conducted to evaluate the effects of different production system on growth performance and carcass composition of male Lohi lambs. Sixty-four Lohi breed lambs were divided in two groups (A and B) of thirty two animals in each group and kept in subgroups of eight in four pens. Half of the lambs were castrated. The group A was offered a concentrate diet (85g of DM/ kg of metabolic body weight/day) containing 15 % of crude protein and 3010 kcal kg⁻¹ of ME along with hay (100 g per amb per day). Group B was offered fresh green forage *ad libitum* and supplemented with a concentrate (400 g per amb per day) containing 20% of CP and 2940 kcal kg⁻¹ ME. Feed offered and refused were sampled and their DM contents determined. Feed intake was measured/day and animals weighted/week. At the end the feeding period, all animals were slaughtered; a half carcass was sampled from each pen for carcass composition determination. The concentrate diet significantly affected daily DM intake ($p = 0.001$), FCR ($p < 0.05$), daily weight gain DWG ($p < 0.05$), final live weight ($p < 0.001$), carcass weight ($p < 0.001$), dressing percentage ($p < 0.001$), conformation scores ($p < 0.05$), internal viscera weight ($p = 0.001$), feet ($p < 0.05$), total bones ($p < 0.05$), buttock ($p < 0.05$) and fat score ($p < 0.001$) as compared to the fodder fed lambs. However fodder fed lambs had longer finishing period ($p < 0.001$), heavy total bones ($p < 0.05$), weight of *M. longissimus dorsi* ($p < 0.05$), Lean:bone ratio ($p < 0.05$) and more leaner carcasses ($p = 0.06$) than concentrate fed lambs. Entire lambs had significant daily DM intake ($p = 0.001$), FCR ($p < 0.05$), DWG ($p < 0.05$), liver weight ($p < 0.05$), lungs weight ($p < 0.05$) and Lean:bone ratio ($p = 0.05$) than castrated lambs however the castrated lambs had longer finishing periods ($p < 0.05$) and more total fat contents (intermuscular and subcutaneous fat) but these values were non significant. There was no interaction found between sexual status and feeding systems. In general, the concentrate feeding system showed good results for growth performance and carcass composition but economic decisions and intensive management must be regarded. The results of this trial show that the sex had an effect on growth and carcass composition and castration may only increase the fatness of carcass but lean remains lower.

Keywords: Carcass, growth, lamb, meat quality, production system, sex