

Evaluation of Effects of Genetic and Non-Genetic Factors on the Growth Performance of Boer Cross, Jamunapari Cross and Local Khari Breeds of Goat in Jagatpur Farm, Chitwan, Nepal

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Abstract

The popularity of exotic goats and its crosses with indigenous breeds has been increasing amongst the Nepali farmers as it improves productive and growth performance of indigenous breeds through cross breeding. The purpose of this study is to evaluate the effects of genetic and non-genetic factors on the growth performance of Boer crosses with Local khari and Jamunapari cross breeds of goats in Jagatpur Farm, Chitwan, Nepal. Data of 60 registered kids were recorded in Jagatpur Agro Farm for five-month period and was analyzed using general linear model (univariate) in IBM SPSS Statistics 20. The mean birth weight of Boer × Khari, Jamunapari × Boer and Local khari was 3.19 ± 0.09 , 3.45 ± 0.08 and 3.21 ± 0.08 respectively. The effect of breed was significant on 3 month weight ($p < 0.001$), 5 month weight ($p < 0.05$) and pre-weaning average daily gain ($p < 0.05$). Boer × Khari was heavier than Local Khari followed by Jamunapari cross in all the three aspects; 3 month weight, 5 month weight and pre-weaning average daily gain. Sex was significant on 3 month weight ($p < 0.05$), 5 month weight ($p < 0.05$), pre-weaning average daily gain ($p < 0.05$) and overall average daily gain ($p < 0.05$). Male had higher weight and weight gains than female. The mean 3 month weight, 5 month weight, pre weaning average daily gain and overall daily gain of male was 14.85 ± 0.48 kg, 23.88 ± 0.41 kg, 127.64 ± 4.84 g/d and 136.8 ± 2.43 g/d whereas female was 13.56 ± 0.49 kg, 22.2 ± 0.42 kg, 115 ± 4.98 g/d and 126.79 ± 2.5 g/d respectively. Parity and season had no significant ($p > 0.05$) effects on any weights and daily gains. Similarly, post-weaning average daily gain was not significantly affected by any factors. It was concluded that cross breeding of Boer goat with Jamunapari and Khari breeds with ability to adapt to local conditions can add much more value to productive performance including body weights and weight gains. Similarly, the fixed effects such as sex, breed and parity should always be taken into consideration as it had significant effects in goat performance. Thus, cross breeding and effects of these factors need to be studied in more detail to determine impacts on productivity and profitability of the meat goat industry.