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"Bridging the gap between increasing knowledge and decreasing resources"

Analysis of Lamb Survival in Indigenous Sheep and their Crosses with Awassi under Farmers Management in Ethiopia

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Abstract

A Weibull proportional hazard model was used to analyse breed and non-genetic factors influencing lamb survival. Data was obtained from the on-farm indigenous with Awassi sheep crossbreeding project in the highlands of Ethiopia. The data consisted of 5530 records collected from three different locations (Menz, Chacha, Wollo). Explanatory variables included in the model were year of birth, season of birth, lamb sex, location, breed of dam and breed of the lamb. Proportion of censored data at weaning age was 87.8 %. Among the effects fitted year, season, sex and location effects were significant ($p < 0.05$) on lamb survival to weaning age whereas the breed of dam as well as the breed of the lamb itself were not significant ($p > 0.05$). Risk of lamb death to weaning age was highest in Menz area compared with the other two locations. Considering location Menz as the reference with risk ratio of 1.00, the risk of death in Chacha and Wollo was lower ($p < 0.05$) with risk ratios of 0.51 and 0.84, respectively. The dry season (March to May) was found more risky ($p < 0.05$) than the other three seasons. The risk of death of lambs born during the dry season was 1.8 times higher than during the wet season (September to November). The risk of death was 38 % higher for male lambs compared to females. High risk of death associated with non-genetic factors would have a negative effect on genetic improvement programs as well as reduce profitability of the farm. Thus management practice should be employed to improve lamb survival in a way of giving special consideration for the unfavourable non-genetic causes of risk.

Keywords: Crossbred, Ethiopia, lamb survival, proportional hazard, survival analysis

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