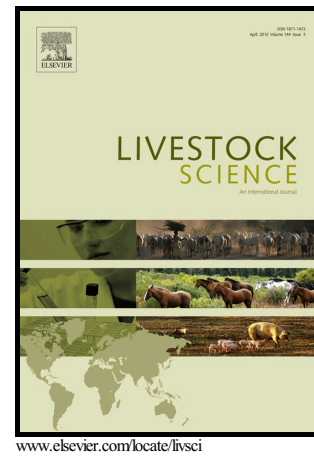


# Author's Accepted Manuscript

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**Genetic Parameters for Neonatal mortality in lambs at Semi-arid region of Rajasthan India**

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**Abstract**

Lamb survival is essential for successful rearing of lambs for sale and replacement of breeding stock given a profitable sheep enterprise. The present study was conducted using the data on 4694 Avikalin, 5015 Chokla and 5718 Malpura sheep recorded from 1991 to 2016 for studying the neonatal mortality in lambs. The effect of influential factors on neonatal mortality of lambs was ascertained and the genetic parameters for lamb survival till first 28 days of life using Gibbs sampling were estimated. Incidence of neonatal mortality was 4.29%, 5.17% and 4.07% in Avikalin, Chokla and Malpura sheep, respectively. Logistic regression analysis revealed significant impact of year of birth and lamb's birth weight on neonatal mortality for all the breeds. Year (1997, 2011-12) negatively affected the survival due to sudden shift in policy decision. Dams with low body weight and in their first parity were also found to affect the lamb survival negatively. Due care of the lambs born with low birth weight (<2.00 kg) and for primiparous dams with low weight (<20.00 kg) can improve the chances of lamb survival. Genetic analysis revealed that the direct heritability for Avikalin sheep was  $0.17 \pm 0.02$ , indicating scope for genetic improvement through selection. However, for Chokla and Malpura sheep the direct heritability were  $0.05 \pm 0.00$  and  $0.06 \pm 0.01$ , respectively. Maternal permanent environmental effect was important in Avikalin and Chokla sheep with maternal heritability estimates of 0.10 and 0.11, respectively. However, for Malpura sheep, with little genetic variance, only direct genetic effect was important. Apart from care and management, accounting for both direct and maternal effects in breeding program can improve the lamb survival.

**Keywords: Neonatal Mortality, heritability, Gibbs sampling, Threshold trait**

**1. Introduction**

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