

Genetic evaluation and genetic trends of Santa Ines hair sheep in Brazil

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Objectives

The objectives of this paper is to show the results of the genetic evaluation program for meat production of the Santa Ines hair sheep, performed in Brazil in Summer 2011.

Introduction

Santa Ines is a Brazilian hair sheep composite breed that received influence from Morada Nova, Bergamacia and Somalis and it was recognized as a breed by the Brazilian Agriculture Ministry in 1977. The animals are very well adapted to tropical conditions, presents nonseasonal reproduction and the breed is responsible for the important growth of the Brazilian sheep industry in last decade, aiming meat production. A program of genetic evaluation was established in 2006.

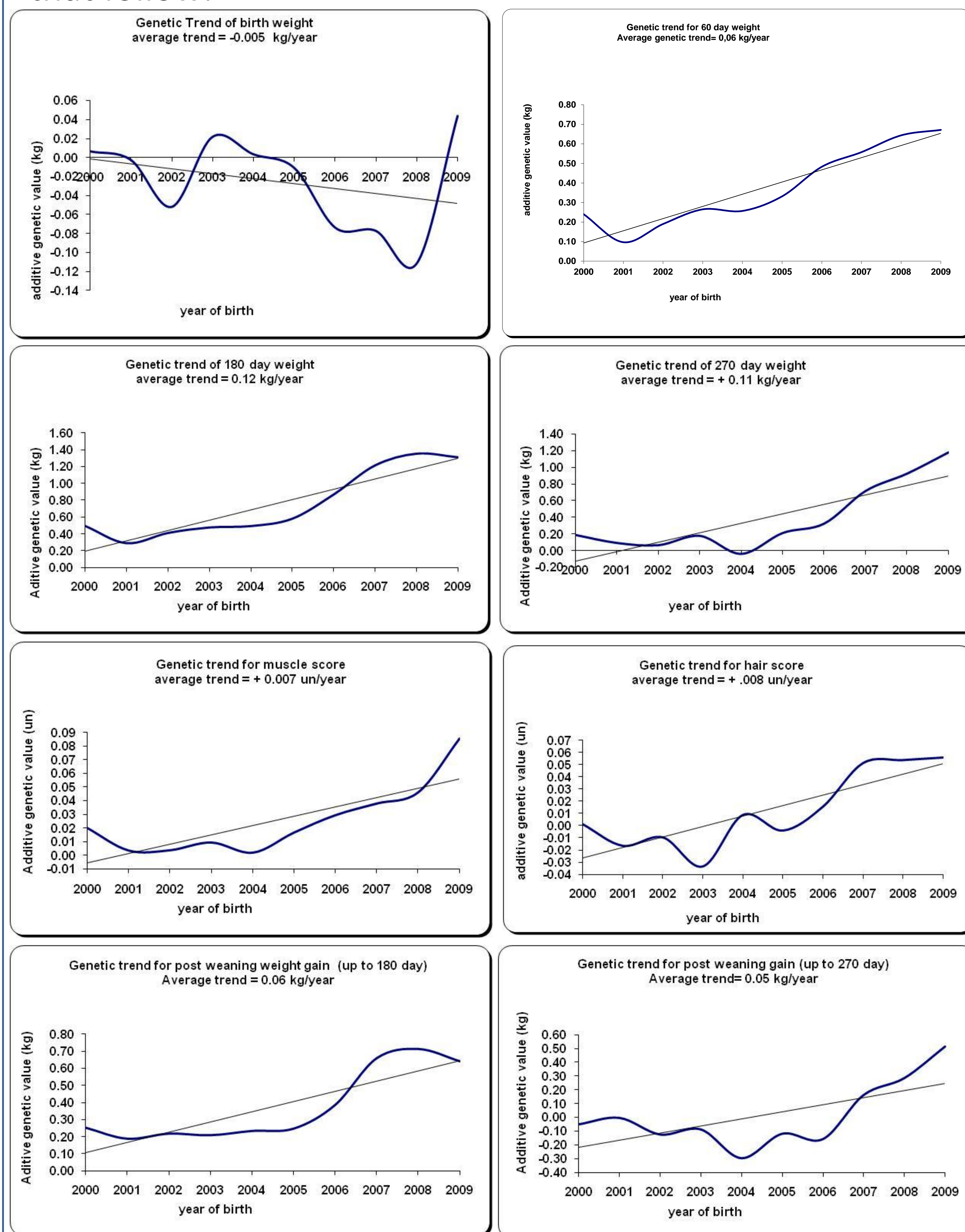
Material and Methods

Records of growth traits, maternal efficiency and visual scores of 11,596 animals, from 11 states of Brazil, located in Northeast (SE, BA), Southeast (ES, RJ, MG, SP), Central (GO, DF, MS and MT) and South (PR), were used for genetic analysis. A⁻¹ had 26,936 animals. Traits analyzed were weight at birth (WB), 60 (W60, weaning), 180 (W180) and 270 days of age (W270), mature weight (MTW), weight gain in the intervals, total maternal ability (MAT), maternal efficiency (EFICMAT), calculated for each parity expressing kg of lambs weaned/kg of adult weight of ewe (adjusted for body score and age of ewe) and visual scores for hair (HAIR) and muscle (MUS).

Genetic analysis were performed using single trait full mixed animal models, considering age of ewe and animal and contemporary group as fixed effects, and as random direct additive animal and maternal effects (only for WB and W60) and permanent environmental effect of dam. EFICMAT analysis was performed using a repeatability model. The software used was MTDFREML. Genetic trends were obtained by regression of estimated breeding values on year of birth of animals.

Results

Heritability estimates were .36 (WB), .28 (W60), .23 (W180), .24 (W270), .24 (MTW), .20 (EFICMAT), .26 (HAIR) and .19 (MUSC). Near zero, but negative genetic trend was observed in WB but for all other traits the trends was positive. When expressed in % of the phenotypic mean, genetic trends were low: -.08% (WB), .46% (W60), .29% (W180), .20% (W270), .29% (HAIR), and .18% (MUSC). Genetic trends for all traits are presented in the graphics that follow:



Conclusions

Although the Santa Ines genetic evaluation in Brazil is only a 5 years old program it already has more than 10,000 animals born and controlled and the genetic trends suggest that it is a successful project that can help the growing meat type sheep industry in the country.