STUDY OF THE INFLUENCE OF GENETIC AND NON-GENETIC FACTORS ON THE FECUNDITY AND LIVE WEIGHT OF MOUTON CHAROLAIS SHEEP

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Abstract

Breeding process in sheep requires the development of an appropriate breeding strategy and the application of adequate selection schemes. An important prerequisite for the process's implementation is the knowledge of genetic and non-genetic factors influencing animals' productivity. The present study was aimed at determining the effect of some genetic and environmental factors on fecundity and live weight of Mouton Charolais sheep.

Object of study was the flock of Mouton Charolais, raised at the Agricultural Institute - Stara Zagora for the period from 2005 to 2018. Data on the traits of live weight /at birth; at 10, 30 and 70 days of age; at weaning; at 9, 18 months and 2.5 years/ and fecundity /number of lambs born per ewe/ on average for the study period were presented and analyzed. The statistical working model was based on the "Animal-model".

The genetic factors (sire, dam and genealogical line), represented by the individual genetic code of the respective individual, had a highly significant influence ($p < 0.001$) on all studied traits. Biological and environmental factors also affected their level, but with varying degrees of significance ($p < 0.05$, $p < 0.01$, $p < 0.001$).

In conclusion, it is necessary when improving the main productive traits in the flock of Mouton Charolais breed by selection instruments to take into account the dependences of ewe productivity and genetic and non-genetic factors, which were object of study.

Key words: *Mouton Charolais, Fecundity, Live weight, Genetic factors, Environmental factors.*