

# **THE APPLICATION of the POLYMERASE CHAIN REACTION METHOD for SHEEP GENOTYPING with the USE of GENETIC MARKERS**

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*The article provides an analysis of modern information on scientific literature, on the development of molecular genetic methods and their use in sheep breeding. Much attention is paid to the application in sheep breeding most promising method for identifying genetic markers of various genes using the polymerase chain reaction. In this connection, the mass introduction of livestock, particularly sheep breeding industry, DNA technology allows us to study marker genes of animals, controlling and predicting important functions in animals (economically useful signs of performance such as growth, development, fattening characteristics, reproductive ability, meat quality, milk quality, and the like. It has been established that the introduction of DNA technology into the sheep breeding industry makes it possible to study animal marker genes that control and predict important economic-useful functions in sheep.*

*The aim of the work was to perform a meta-analysis of modern information data, literature sources, reviews on the application of the PCR method for genotyping sheep using molecular genetic markers in sheep*

breeding.

*The review describes promising genes - potential markers of productivity in sheep breeding.*

*Details considered of the use of genes - the reproductive ability of sheep, their multiplicity, milk and meat productivity, the use of growth, callipyge (SNPCLPG), calpain and calpastatin (CAST) as promising genetic markers for sheep breeding.*

*Identification of genetic markers by means of polymerase chain reaction is an accessible tool for conducting purposeful and highly effective breeding of farm animals, in particular sheep. DNA markers will make it possible to form a promising breeding core for sheep.*

*This brief review of prospective genes-markers of sheep productivity shows the advisability of a wider introduction of PCR for the detection of genetic markers in the practice of sheep breeding. DNA markers advantage is that it is possible to determine the genotype of an animal regardless of sex, age and physiological state of individuals, which makes it possible to significantly improve the efficiency of selection and breeding work in the sheep industry, respectively, the yield of sheep products.*

**Keywords:** polymerase chain reaction, genetic markers, genotyping, sheep