

Genetic determining of performance traits of animals

S u m m a r y

The domestication and genetic improvement have caused considerable changes in morphological, physiological and behavioural traits of domestic animals if compared with their wild relatives. These effects have been achieved by substituting the natural selection with the artificial one and by providing suitable breeding conditions for animals. At present, animal breeding is still based on an indirect valuation of animal's breeding traits (i.e. on phenotype traits of valued animals and their relatives). However, results obtained in laboratories of molecular genetics, cytogenetics and bio-statistics are increasingly applied in the improvement of animal breeding. It looks as if the history of genetics and its application in animal breeding returns to the starting point. At the beginning, genetics included only such aspects as the inheritance of some simple qualitative traits, followed by a discovery of principles of the inheritance of quantitative (polygenic) traits. While at present, the simple inheriting mechanisms are again used for the identification of markers and genes of big expression (major genes). At present, these are helpful in the process of animal breeding.