

## P53 | Correlation between the age of heifers' first successful insemination and LV-poliformism of somatotropin gene

A Yaryshkin; I Tkachenko; O Leshonok

*Federal State Budgetary Scientific Institution «Ural Federal Agricultural Scientific Research Centre, Ural Branch of the Russian Academy of Sciences», Yekaterinburg, Russian Federation*

The purpose of the study was to determine the effect of allelic variations in the somatotropin gene on number of days of successful insemination in heifers. The somatotropin or the growth hormone (GH) is a significant regulator of the animal somatic growth, which produces a lactogenic and a lipid-mobilizing effect. The gene

polymorphism in L and V alleles, identified with Alu I restriction endonuclease, has three genotypes: LL, LV and VV. The research studied the correlation between the age when Holstein black-and-white heifers were first successfully inseminated and the somatotropin gene polymorphism. The somatotropin gene polymorphism was studied using a PCR-RFLP technique (polymerase chain reaction – restriction fragment length polymorphism) (Alu I restriction endonuclease) and further electrophoresis in 3% agarose gel. Statistical indicators were calculated using IBM SPSS Statistics 23 software. The somatotropin gene in the sampled animals (120 heads per group) was represented by two gene variations: LL-84% and LV-16%. It was revealed that animals with LL variation were inseminated successfully on the 419th day and reached the weight of 398 kg, and animals with LV variation were inseminated successfully by the 436th day and reached the weight of 396 kg. The difference was 17 days ( $p \leq 0.1$ ). Heifers with LL variation of the somatotropin gene grew and developed better, and it the fact that they reached body weight necessary for the insemination earlier can be explained by that. Therefore, the use of animals with LL variation of the somatotropin gene in herds will enable to reach the age of the first successful insemination earlier than the use of animals with LV variation.