Association between β-lactoglobulin gene polymorphism with milk production traits in Guilan native cattle

Amin Ghomi Serajkar*,Dr. Seyed Zyiaedin Mirhoseini,

Abstract The aim of this study is the survey betalactoglobulin gene polymorphism and its relationship with the daily milk yield, protein and fat in Guilan native cattle. To investigate the relation of different genotypes of betalactoglobulin with blood parameters, blood of 100 native cattle of guilan in both sexes were taken randomly and individually. The DNA of samples were extracted using salt modified method. betalactoglobulin gene was amplified using two specific primer. According to the results of the data analysis of the amplification products were digested, betalactoglobulin gene was observed in native cattle in Guilan by HAEIII enzymes. Allele A at position BLG-HAEIII includes a shear point and thus bands with sizes of 159 and 109 bp couple alkali, but allele B had two shear poin and three bands of 109,79,74 couple alkali. There is a shear point in Allele A, but in allele B, conversion of nucleotide thymine to cytosine at position 118 changes the sequence of the shear as and thus this area is identifiable by HAEIII enzyme and three bands were appeared for allele B on gel. Two allele A and B were observed in the population with frequency 0.4 and 0.6 and three genotypes AA, AB and BB respectively with frequency 0.3, 0.19 and 0.51. the population according to this genes position was not in Hardy-Weinberg equilibrium that could be related to migration, ion and or the number of samples. Statistical analysis showed that there is no significant effect between genotypes with the production of milk, milk fat and protein percentage (p

Keywords : Keywords: polymorphism, betalactoglobulin , native cattle of guilan, PCR-RFLP.