

DNA Extraction and Identification of Kappa Casein (k-Casein) Gene on Friesian Holstein

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Abstract:

Casein genes family (as1-Casein, as2-Casein, b-Casein and k-Casein) were extensively reported that casein genes are responsible for milk quality and quantity. The purpose of this study were to compared phenol-chloroform DNA extraction method and salting-off DNA extraction method from whole blood samples, and to identify Kappa Casein (k-Casein) gene as marker for milk quality of Friesian Holstein cows in smallholder farming. The result of this study can be used as a reference for future research in Friesian Holstein genetic improvement. The research was conducted at Laboratory of Zoologi, The Faculty of Mathematic and Natural Science. DNA was extracted from 78 blood samples that used to identify the genotype and allele frequency using phenol-chloroform DNA extraction method and salting-off method with PCR-RFLP based technique. Samples were run through polyacrylamide gel electrophoresis (PAGE) 5% followed by silverstaining. DNA extraction from whole blood samples using phenol-chloroform has better quality DNA than salting-off method. In Pondok Rangon genotype frequency for AA, AB, BB were 34,21%; 63,16% and 2,63% respectively. Frequency alel A and B of k-casein gene in Pondok Rangon were 65,79% and 34,21% respectively. Frequency of genotype for K-casein gene in Kebon Pedes and Faculty of Animal Science showed 100% for AA.

[Skripsi Lengkap - fulltext]