

Identification of Quantitative Characteristic and Association Between ACTA-1 Gene and Body Weight in Local Chicken

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Abstract	<p>This study aims to identify the quantitative characteristics of local chickens and examine the presence of polymorphisms based on the nucleotide sequences of ACTA-1 genes. The material used is a local chicken consisting of 25 Pelung and 25 Native chickens. The quantitative data uses t test. Identification ACTA-1 gene polymorphism is carried out by PCR method and Sequencing of PCR product. The quantitative characters, of male Pelung and Native chickens significantly different, involving the length of tarsometatarsus, tarsometatarsus circumference, comb height and body weight. Meanwhile, female Pelung and Native chickens show significant differences in femur length, tibia length, tarsometatarsus length, tarsometatarsus circumference, third finger length, wing length, comb height and body weight. The sequencing result indicates the presence of SNPs (Single Nucleotide Polymorphism) among them c.584 T>G, c. 585 T>A, and c.657 T>C. Furthermore, in the base c.657 T>C the heterozygosity value of 0.18. Based on correlation value at c. 585 T>A shows that AA genotype has a significant effect on body weight ($P < 0.05$). Therefore, the ACTA-1 gene is an important marker, which can be used to improve the economic characteristics found in local chickens.</p>
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