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**GENETICS
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IDENTIFICATION OF PIT-1 GEN USING PCR-RFLP AND GENETIC EVALUATION OF HATCHING WEIGHT USING PATERNAL HALB SIB ON INDEGENOUS BREED SINGING COCKEREL PELUNG

Sri Bandiati Komar PRAJOGA¹, Kundrat HIDAYAT¹, Perman IMAN²

¹Animal Breeding and Reproduction Laboratory, Animal Husbandry Faculty, Universitas Padjadjaran, Bandung, Indonesia

²Biochemistry Laboratory, Mathematics and Natural Sciences Faculty, Universitas Padjadjaran, Bandung, Indonesia

Corresponding author email: komarsri@yahoo.com

Abstract

This research was conducted at the Laboratory of Animal Breeding and Reproduction of Animal Husbandry Faculty, and Laboratory of Biochemistry of Mathematic and Natural Sciences Faculty Universitas Padjadjaran at June 2012. The objectives of this research were to know variation of Pit-1 gen of Pelung singing cockerel and evaluate genetic parameter of Hatching Weight (HW). The data comprised of 76 HW-records as progeny from 5 cocks and 15 hens of Pelung using Paternal Halb Sib and 29-blood samples. Variance component and heritability were estimated by Restricted Maximum Likelihood (REML) using Animal Model with the program of VCE 4.2. Fixed effect was sex and hatching period. Variation of chicken Pit-1 gen was analyzed using PCR-RFLP and used 5 primers (PR1, PR2, PR3, PR4 and PR5) and 4 restriction enzymes. The average hatch weight was 33.83 ±2.42 gr. The heritability value was 0.5 ±0.05 as high category. The genetic respond to selection was 2.55 gr. The accuracy of selection of was 0.707. While selection intensity was 1.92% for 3 hens and 1 cock (sex ratio 1 ♂ 3 ♀). Presence or absence of deletions in a PCR fragment of the result can be distinguished by differences in the electrophoresis migration of the fragment. The result showed that there was deletion of 57 bp of insertion fragment length of 387 bp. In this experiment the difference migration did not occur in all samples, that was implicated with reverse and forward primer (PR1).

Key words: Artificial Insemination, Paternal Halb Sib, Pit-1 Gen, Singing Cockerel.

INTRODUCTION

Pelung Chicken is one of the local chickens, which were developed by the community with the objective being to sound melodious crowing roosters, easy listening, big, long, playing and rhythmic. However, if it is not supported with good stamina, the sound quality may not appear as expected.

Although the criteria of performance and body weight are ignored, in the future the characteristics of Pelung Chicken (big body) will be lost.

On a semi-intensive maintenance Pelung adult, can achieve weight of 3.37 kg for cocks and 2.52 kg for hens, while the DOC body weight is 30.7 g for males and 31.6 g for females. The usefulness of Pelung Chicken as a source of animal protein, have higher productivity than other types of local chicken in Indonesia. The roosters have loud rhythmic and long floating crow. Pelung chicken do not have a specific pattern of feather color, many of them have a

mixture color of red and black, yellow and white, and also shiny green color mix, but the most often found is the mixture of red and black.

Genetic diversity is important in breeding programs for the genetic optimization of the acquisition of certain properties can be achieved when there is enough opportunity for the selection of genes or the desired properties. Beside that, genetic diversity plays an important role in the survival of the population. The loss of genetic diversity can reduce the chance of survival of the population.

Growth is weight gain until they reach adult size or per additional body mass per unit time. Specific growth occurs in young animals which is formed by the large bone, protein, and water networks.

Through a complicated on differentiation phase of the anterior pituitary and the regulation of prolactin gene (PRL), growth hormone (Growth hormone-GH) and thyroid-stimulating