Growth Selection by Evaluation of Exterior Parameter and Nutritional Approach on Local Meat Chicken

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ABSTRACT

Related research efforts exploring the genetic potential of local chickens *(Gallus gallus domesticus)* in order to get the parent of superior local meat chicken (ALPU) through the development of selection methods was applied. Economical and practical approach to nutritional requirement especially protein requirement has been done since July, 2008 as well. The research was located at the Field Laboratory of Poultry Science and Technology, Department of Animal Science, Faculty of Agriculture, Syiah Kuala University, Darussalam, Banda Aceh. The research was divided into 2 groups: the female and male parent selection for 2 months, and the selection and enlargement of the derivative (F1) for 4 months. The selection process by using the parameter was developed starting with the selection of the DOC of local chicken which has potential as meat chicken, was divided into 2 groups: medium and heavy types. Selection was continued on the derivative chicken which was mated by artificial insemination method (IB). Beranger (2007) developed an exterior selection method which has a positive correlation with genetic potency: broad skull, wide back, long back, the depth of the body, thigh circumference, carcass weight, chest width and proportions of the chest muscles and thigh muscles (Yaman et al., 2000). Ration treatment aimed to obtain optimal nutrition standards to stimulate the optimum production. Protein content in ration was 17, 19, and 21%, respectively. Selection of the exterior parameter has been able to classify the candidate of local meat chicken into 2 type specific growth models: heavy and medium types. Based on the parameters that were developed in this study, the local meat chickens have a huge potential as superior meat chickens. Growth patterns of male and female of selected chicken were significantly different for final body weight and exterior size. The male chicken achieved commercial weight at the age of 3-4 months (<1.0 kg), while females have a tendency to continue to grow after 4 months of age. Male chicken fed with 19% of protein resulted better performance, while the female chicken growth was in line with the increasing of protein in the ration. In conclusion, the exterior parameters and nutritional approach have an important role to evaluate the growth process on local meat chicken.

Key words: local chicken, selection, exterior, nutrition

INTRODUCTION

In local animal, the genetic improvement program is often done by crossbreeding with non-local animal. This technique requires a large cost, long time, and must be done judiciously and focused because it can threaten the purity of indigenous animal (local) that basically has its own advantages as compared to non-local animal. It can be overcome by selection programs aiming to change the frequency of genes from a population that expressed in the production ability.

Most of animal selection methods were focused on the determination of the potential nature of phenotype or genotype. This will be more difficult with the local livestock as well as local chicken genetic trait in which variation is very high because of the history of origin. The selection program to increase genetic potential of local animal should consider the aspects of economic value, cost, and time to achieve the target. This selection program resulted in economic value property such as the increase in fertility, vitality, weight gain, color or body performance (Le-Bihan et al., 2001:2008).

Recent parameter selection method, based on the existing exterior performance to determine the genetic potential of chicken, needs to be developed with the exterior parameters selection