Increasing the Egg Weight of Burgo Chicken Offspring through Cross-Mating Between Burgo Chicken with Native Chicken

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ABSTRACT

The research was aimed to increse the egg weight of burgo chicken offspring. The research used 300 hens, offspring from four mating types between burgo chicken and native chicken. These offspring were resulted from the succesive four mating groups of: a. Native cock with native hen (KK); b. Native cock with burgo hen (KB); c. Burgo cock with native hen (BK); d. Burgo cock with burgo hen (BB). The offspring in each mating group consisted of three postal coops, and each postal coop was filled by 25 hens. Variables collected from the hen offspring included for egg weight and egg production. Result showed that the egg weights of the cross-mating offspring of burgo chicken with native chicken were higher than those of mating offspring within BB. The increased egg weight of the KB cross-mating offspring was 30.79%, while that for the BK cross-mating offspring was 62.79%. However, the average egg production of the cross-mating offspring within Burgo chicken (BB) was the highest compared to the others (KB, BK, and KK). The egg production of the KB cross-mating offspring decreased 12.95%, while that for the BK cross-mating offspring decreased 19.77%. It can be concluded that the cross-mating offspring of both KB and BK mating types could be sonsidered for the purpose to produce relatively small egg production with the increased egg weight.

Key word: Burgo chicken, cross-mating offspring, egg weight, egg production

INTRODUCTION

In Indonesia, there are many kind of native chicken that each of it had its own characteristic and some of them can be developed to broiler, layer and exotic chicken (Rasyaf, 1994). Native chicken including Burgo chicken has its potential to be both meat and egg production. This potential has not been used well yet, this fact was based on the management of Native chicken which is still very simple /traditional. Its life depends on its natural environment (Kingstone, 1979).

Burgo chicken was wide-spread in Bengkulu. It showed the variety of fowl in Bengkulu that could be a native asset of Bengkulu's Indigenous (Setianto *et al.*, 2009). Burgo chicken was the result of cross-mating type between Red Jungle Cock (Gallus gallus) with native hen (Gallus domestica) (Warnoto, 2000). This cross-mating type had produced new species that had superiority. Superiority that Burgo chickens have is the resistance of many kinds of disease, high egg production, attractive feather color and specific hi-pitched crow.

Warnoto (2001) clarified that Burgo hen had high egg production that approximately laid around 16-18 eggs a period and the interval between egg production was relative short, approximately around 7-10 days compared to native hen that usually laid 10 eggs a period with the interval between egg production approximately around 14-30 days. However, with this big amount of eggs produced, the egg weight was produced was light with an average egg weight that was approximately around 30 grams each from the interval of 25-35 grams. Low egg weight was correlated to the average weight of hen that was average around 750 grams a hen from the interval of 600 – 1500 grams / hen. Another characteristic that is beneficial as local layer, the sexual maturity of Burgo chicken was around 4-5 month, shorter than native chicken that was around of 5-7 month.

Burgo chicken developing efforts still have many obstacles. It's caused by less information and knowledge about Burgo chicken. In order to make Burgo chicken as superior commodity, it needs more scientific investigation towards Burgo chicken that will increase the potential of Burgo chicken.

From the previous research, it is known that Burgo hen had a potential to be layer (Warnoto, 2002; Warnoto and Setianto, 2009). The total of annual egg production doesn't have much difference with the total annual egg production of native chicken if it compared. However, this high production total amount is not get along with the egg weight. The egg weight is lighter than the weight of native chicken's Egg. That's why, it is needed to find an alternative to produce a better egg, especially on its weight. One of the ways to do it is increasing the genetic quality by cross-mating method.

The research was aimed to obtain to increase the egg weight of Burgo chicken offspring through its cross-mating result.

MATERIALS AND METHODS

The research used 300 hens, offspring from four mating types between Burgo chicken and native chicken. These offspring were resulted from the succesive four mating groups of :

P1 = Native cock with Native hen (KK)
P2 = Native cock with Burgo hen (KB)
P3 = Burgo cock with Native hen (BK)
P4 = Burgo cock with Burgo hen (BB)

The offspring in each mating group consisted of three postal coops, and each postal coop was fileed by 25 hens.

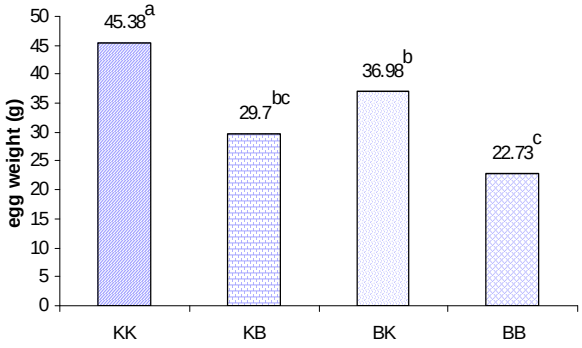
The hens were raised intensively by *adlibitum* feeding. Feeds that were given are corn, mixture of rice and bran, and concentrate with the composition of 40:30:30. The hen was raised for 2 month of its first production. The eggs withdrawn from each postal coop every day and it were identified by its offspring of mating group. Each egg was scaled.

Variables collected from the hen offspring included for egg weight and egg production.

All of the variables that were observed were analyzed with Random System Program. If there are real differences at the variant analysis, than it will be continued by the different average test with Duncan's Multiple Range Test (DMRT).

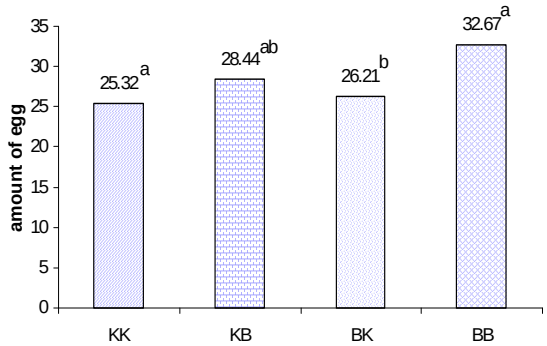
RESULTS AND DISCUSSION

Egg's weight average and egg production of the eggs subscribe in Figure 1 and Figure 2. According to the chart 1, it was shown that the average egg weight result that was produced by the cross-mating offspring of Burgo cock with Burgo hen (BB) was significantly the lightest among others. The average egg weight of the cross-mating offspring of Native cock with Native hen (KK) was significantly the heaviest among others. The most interesting thing was the egg weight of the cross-mating offspring of Burgo chicken with the other showed the increasing of the egg weight than the cross-mating offspring among Burgo cock with Burgo hen (BB). It can be seen that, there was an increasing of the average egg weight of 30.79% towards the cross-mating offspring of Native cock with Burgo hen (KB) and another increasing of 62.79% towards the cross-mating offspring of Burgo cock with Native hen (BK). However, the increasing of the average egg weight was still not getting the equality towards the average egg weight of the cross-mating offspring of Native chicken with Native hen (KK).



Note: Differences of Superscript were significant difference (P<0,05)

Figure 1. The Average Egg Weight (g/egg) of The Cross-Mating Offspring



Note: Differences of Superscript were significant difference (P<0,05)

Figure 2. The average egg production of the cross-mating offspring in 2 month of first production.

Different with the average egg weigh that was increased upon the cross-mating of Burgo

chicken, the average egg production of Burgo chicken was decreased (look chart 2).

The average egg production of the cross-mating offspring among Burgo Chickens was the highest among the others (KB, BK, and KK). There was a decreasing of egg production among the cross-mating offspring of Burgo chicken with Native chicken (KB and BK) if it's compared to the cross-mating offspring of Burgo cock with Burgo hen (BB). Upon the cross-mating offspring of Native cock with Burgo hen (KB) there was a decreasing of 12.95% and a decreasing of 19.77% upon the cross-mating offspring of Burgo cock with Native hen (BK). Even though the decreasing was happened, the egg production of the cross-mating offspring among Burgo chickens, the egg production of the cross-mating offspring of native cock with Burgo hen (KB) and the cross-mating offspring of Burgo cock with native hen were still higher than the the egg production of the cross-mating offspring among Native chickens.

Changes that resulted to the offspring from the cross-mating method are the heterocyst effect from additive gene that resulting the average characteristic from both crossmated parents. However, there were some cross-mating that could resulted better certain characteristic upon the offspring from both of its parents. This changes happened because of the effect of the dominant gene works or the over dominant gene (Warwick *et al*., 1984).

CONCLUSIONS

According to the observation result, it can be concluded that with the cross-mating method between Burgo chickens could increase the average egg weight. The cross-mating offspring of Native cock with Burgo hen (KB) and cross-mating offspring of Burgo cock with Native hen (BK) could be use for the purpose of the relatively small egg production with the increasing of the average egg weight.

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