



## Performance of KUB (Ayam Kampung Balitbangtan) Chicken Fed Local and Commercial Feed

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### Abstract

The KUB chicken is one of the local chicken families, which is the result of research by Balitbangtan. This study aimed to determine the performance of KUB chickens with P1 feeding treatment (using 100% commercial feed) and P2 treatment (using 100% local feed). This study used 100 KUB chickens aged two weeks and was reared up to 6 weeks. Chicken performance was measured based on feed consumption, body weight, body weight gain, and feed conversion. The data were analyzed descriptively by presenting the mean, standard deviation, coefficient of diversity and statistical analysis using the T-test. The study results on the performance of KUB chickens in treatment P1 obtained feed consumption of 23.68 and P2 23.25, for feed conversion P1 0.24 and P2 0.23 while the weight gain of P1 was 33.76 and P2 was 47.78. This study concludes that local feed ingredients provide performance (feed consumption, body weight gain, and feed conversion not significantly different from commercial feeds. It can be concluded that local feed ingredients can be used as the main feed in KUB chicken feed formulations.

*Keywords: KUB Chicken, Perform, Local Feed, Comercial Feed.*

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### Introduction

Kampung chicken in Indonesia has a particular market with relatively high consumers. It can be seen from the higher price of free-range chicken products. In addition, kampung chickens could adapt quite quickly to dry land areas. Free-range chicken has the potential to be developed as a smallholder business even though its productivity is lower than that of purebred chicken, but this can be improved by rearing management and genetic improvement of chickens.

There are various types of native chickens that the Indonesian people can cultivate, one of which is the Kampung Unggul Balitnak (KUB) chicken. KUB chicken is one of the local

chicken families, which is the result of research by Balitbangtan. KUB chickens are selected native chickens with several advantages with more egg production than ordinary native chickens and have higher disease resistance than purebred chickens (Sartika et al., 2013).

Feed is the primary requirement livestock needs to maintain its life, about 70% of production needs. Feed must have quality requirements on the farm, such as feed safety, livestock health, food security, and economic aspects (Hafsah and Sarjuni S, 2017). The ability of KUB chickens to utilize local feed ingredients is the same as that of native chickens in general. Therefore, using local feed ingredients that have quality and are available continuously needs development efforts. The use of cheap local feed ingredients also needs to be considered for nutritional content, availability and prices that do not compete with human food. According to Ekalinda et al., 2019. KUB Chicken feed can be given in coarse flour or crumble (broken pellets). The feed ingredients consist of commercial chicken feed, bran, corn or other materials available on site. This study aims to determine the performance obtained from local feed ingredients to increase the growth of Kampung Unggul Balitbangtan (KUB) chickens.

## Materials and Methods

The research was conducted from October to November at the teaching farm of the Department of Animal Husbandry, Pangkep State Agricultural Polytechnic. The material used in this study was 100 head of Kampung Unggul Balitbangtan (KUB) chickens aged 14 days which were reared for five weeks. The cage used is a type of litter cage. There was two treatment feeds, namely treatment P1 = 100% crumble for the broiler starter phase and treatment P2 = 100% local mixed feed. The composition of the feed ingredients used in this study was presented in crude protein content of 21%.

**Table 1.** Percentage of feed ingredients used

Description	Quantity (%)
Rice Bran	60
Ground Corn	16
Fish meal	12
Concentrate feed	12

The variables observed were related to the performance of KUB chickens, including feed consumption, body weight gain, and feed conversion. Feed consumption is the difference between the ration given and the rest of the ration during the feeding period within 24 hours, measured using a digital scale in g/head. Average Bodyweight gain (ABG) was obtained from the difference between final body weight and initial body weight per maintenance period, in g/head. Feed conversion or feed conversion rate (FCR) is the ratio between feed consumption and body weight gain, while the mortality rate is the percentage of the number of chickens that die during the rearing period.

## Data Analysis

The data were analyzed descriptively by presenting the mean ( $\bar{x}$ ) and standard deviation (sd). The T-test was used to determine the difference in average body weight, body weight gain, and feed conversion between KUB chickens fed local feed and commercial feed.

$$t \text{ count} = \frac{x_1 - x_2}{\sqrt{\frac{(n_1 - 1) S_1^2 + (n_2 - 1) S_2^2}{n_1 + n_2 - 2} \left(\frac{1}{n_1} + \frac{1}{n_2}\right)}}$$

description:

- X1 : The mean value of the first sample group
- X2: The mean value of the second sample group
- $n_1$  : First sample group size
- $n_2$  : Size of the second sample group
- S1 : Standard deviation of the first sample group
- S2 : Standard deviation of the second sample group

## Results and Discussion

The performance of KUB chickens with different feeds, such as local and factory feed, included feed consumption, body weight, ABG and feed conversion, shown in Table 2.

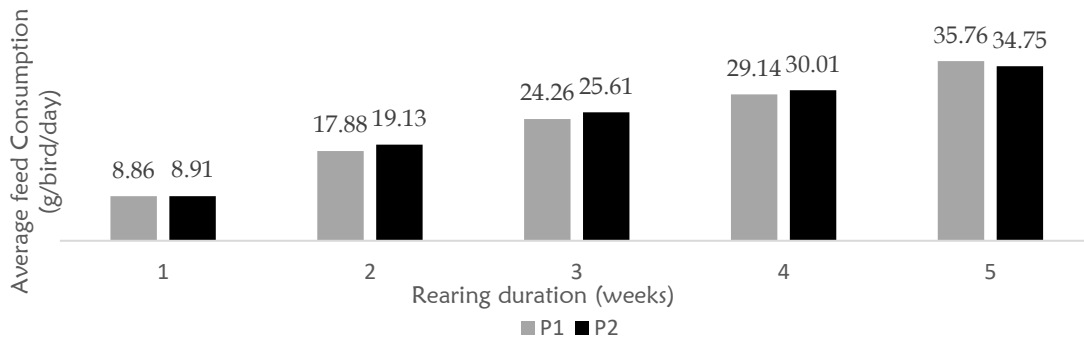
**Table 2.** The Perform of KUB Chicken fed a local feed and commercial feed

Parameter	Treatment	
	P1	P2
Feed Consumption (g/bird/day)	23.68±10.06	23.25±10.35
Feed Conversion (g)	0.24±0.13	0.23±0.12
Average Bodyweight Gain (AVG) (g/bird/week)	33.764±48.76	47.78±49.07

Description: the data is not significantly different in the treatment of the parameters.

### Feed consumption

Livestock consumes rations to maintain their bodies' metabolic processes, body temperature, intracellular activity, and growth activity. The average ration consumption for KUB chickens from 2 to 6 weeks in the P1 group was 23.68 g/bird/day, not significantly different from the P2 group at 23.25 g/bird/day. The amount of ration given by Balitnak Ciawi's recommendation increased the feed consumption for 5 - 7 g/ bird by quantity around 15-30 g/ bird/ day. Table 2 shows no difference in the consumption of KUB chicken feed that is fed with local rations with factory rations.

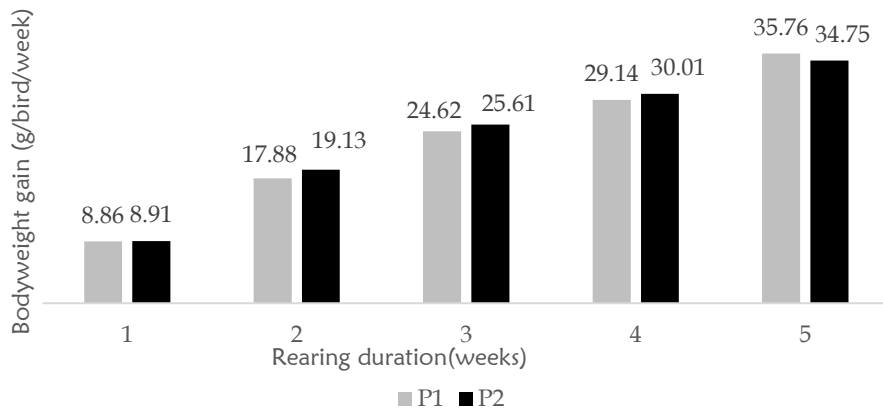


**Fig. 1** Development of KUB Chicken Feed Consumption during the Maintenance Period

The average development of KUB chicken feed consumption during the five-week maintenance period increased along with the age of the livestock. Livestock needs for their principal life influence the increase in feed consumption. Prawira et al., 2013 explained that the ration consumed by livestock would be used for basic living and production partly disposed of through excretion. One factor influencing feed consumption is age, where feed consumption increases in line with the increasing age of Kampung chickens (Lisnahan et al., (2017).

## Average Bodyweight Gain

Bodyweight gain in livestock during the maintenance period of KUB chickens aged two weeks to 6 weeks can be seen in table 2. The treatment ratio had no significant effect on body weight gain because the treatment ratio also had no significant effect on consumption.



**Fig. 2** Development of Bodyweight of KUB Chicken in duration maintenance.

Chickens that provide body weight gain will determine the success of the livestock business. Binda et al., 2012 explained that the growth of reared chickens would be better if the average daily gain (ADG) were significant. Bodyweight gain in the group fed local feed with the manufacturer's feed was not significantly different. An increase in body weight is influenced by the increasing age of livestock and feed consumption. Lisnahan et.al 2020 explain that the increase in body weight is strongly influenced by feed consumption and the protein content factor in the ratio. They were also explained by Urfa S, 2017 that the speed of growth and the amount of ration consumed in a certain period. There is a close relationship. Growth will be rapid, and birds will reach a specific weight at a young age.

## Feed Conversion

Based on table 2 for the results of the calculation of feed conversion for KUB chickens up to 6 weeks of age, it was found that the conversion of P1 treatment was 0.24 and P2 0.23. The feed conversion value reflects the efficiency level of the feed. The greater the feed conversion value, the less efficient the feed, while the smaller the feed conversion rate, the better. The feed conversion value reflects the efficiency level of feed given to livestock (Yunilas 2005).

The ration conversion value of the two treatments showed relatively the same results. It was presumably due to the same consumption of rations and body weight gain. The two treatment groups showed good ration efficiency results, namely 0.23 (P1) and 0.24 (P2). This figure shows that the better the ration quality, the lower the conversion value of the ration will be. Furthermore, Sari M et al. 2017 added that the quality of the ration is determined by the balance of nutrients in the ration needed by the body of native chickens.

## Conclusion

Based on the results of the study, the use of local feed ingredients performed (feed consumption, body weight gain, and feed conversion) were not significantly different from the use of commercial feeds, so it can be concluded that the use of local feed ingredients can be used as the main feed in the formulation of KUB chicken feed.

## Conflict of Interest

We certify that there is no conflict of interest with any financial, personal, or other relationships with other people or organization related to the material discussed in the manuscript.

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