

Feeding Local Fermentation To Production and Carcass Percentage of Peking Duck

ABSTRACT

This study aimed to determine the effect of local fermentation feeding on carcass production and chunks of Peking duck carcass. The research material used was 96 peking ducks which were 1 day old (DOD) divided into 4 ration treatments, each treatment consisted of 4 replications and each replication consisted of 6 Peking ducks. The treatments used were: P0: Local ration without fermentation (P1): Local ration fermentation 10 ml / L, P2: Local ration fermentation 12,5 ml / L, and P3: Local ration fermentation 15 ml / L. The observed variables included: live weight, carcass weight, ~~carcass weight~~, carcass percentage and percentage of carcass. This research uses Completely Randomized Design (RAL). The data obtained were analyzed by Analysis of Variance and continued by Duncan test. The results showed that the local fermentation feeding had no significant effect on live weight, carcass weight and percentage of 8 weeks old peking duck carcass. Local feeding of fermentation showed no significant effect on the mean of weight and percentage of carcass (chest, wings, thighs and back). It was concluded that local fermentation feeding can give positive effect to Peking duck carcass weight, and local feeding of fermentation 12,5 and 15 ml / liter of water was increase peking duck carcass weight 8 weeks and better than non fermented feed.

Key Words: Fermentation, Local Feed, Peking Duck, Carcass

INTRODUCTION

Maintenance of ducks is still done in relatively small quantities and is still extensive. The negative impact due to of this maintenance-management farming system is that slow ducks growth slow and produce and low meat quality. Increased duck productivity needs to be done to produce superior and productive livestock, while encouraging the development of broiler duck business in the country. One way to improve the appearance of ducks that are devoted as broiler ducks is through improved quality of feed. Through the improvement of the feed is expected to produce ducks that have superiority to the growth and production of better carcass. Naturally duck livestock has a higher tolerance to feed containing fiber than other poultry.

Ducks also have better adaptability to the environment and have better resistance to diseases, so in the maintenance of ducks not so need to be given drugs boost immune or vaccine from certain diseases such as gumboro or ND. The excellence of ducks will certainly make it easy for breeders to maintain it. In addition to the high tolerance of coarse fiber, provides opportunities for the use of high-fiber raw material and nutrient value is quite good, and easy to obtain.

Local feed raw materials are one of source of feed sources that can be used as duck feed. However, the quality of local feed is generally low, limited stock and low nutritious content. The weakness of local feed is the quality and availability of not guaranteed and low nutritional content. Accordingly, it is fundamentally requirement to produce better feed for duct by utilising local feed sources mixed with other materials in order to enhance both meat and eggs production Therefore, it is necessary to implement a strategy to effectively and efficiently utilize local feed ingredients as mixed materials in duck formulations so that the population and livestock production can be further

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~~enhanced and improved~~ (Daud *et al.* 2014). Efforts to improve the use of local feed have been made by the government through its policies. However, this effort has not been fully successful, due to the supporting factors that have not been considered such as the provision of facilities, infrastructure, and technology. In relation to efforts to improve the quality of local feed, it is deemed necessary to seek technological breakthrough that is cheap, simple, and has multiple functions.

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One of the more promising feed technologies to be applied in improving the quality of local feed is fermentation technology. Fermentation technology is one of the alternatives in the effort to maximize the use of local feed raw materials, through metabolic processes where the enzyme from microorganisms do oxidation, reduction, hydrolysis and other chemical reactions of chemical changes in the organic substrate by producing certain products. Feed ingredients that have been fermented have better nutrition and nutritional content than their origin because microbes are catabolic or break down complex components into simpler substances that are easier to digest in addition to the microbes can also produce amino acids and some vitamins such as riboflavin, vitamin B12, provitamin A, can produce the preferred flavors and can reduce the toxins / anti-nutrients present in the ingredients (Carlile and Watkinson 1995).

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Preparation of fermentation feed in addition to preservation is also intended so that raw materials post-harvest high water content can be directly used, so that applicable technology can cut the feed production line becomes shorter. Related to the description, the research on the use of local fermented food is important to be done in order to apply appropriate feed technology and easy to apply at the farmer / breeder level, especially in broiler duck farming. The purpose of this study was to determine the effect of local fermentation feeding on the production and carcass percentage of peking duck

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MATERIAL AND METHODS

The research used 96 peking ducks at *finisher* phase. Ration used in this experiment consisted of fermented rations using local feed raw materials (sago waste, corn, rice bran, coconut meal, sago, fish meal, molasses, premix, coconut oil, premix, NaCl, and probiotic).

Treatment Rations

Treatment rations used were fermented rations using local feed formulated according to the finisher phase duck requirements: It contained 15-16% crude protein and 2800 kkal/kg metabolizable energy (Table 1).

Table 1. Composition and nutrients content of the treatment ration

| Feed Ingredients | Treatment Rations | | | |
|------------------|-------------------|----|----|----|
| | R0 | R1 | R2 | R3 |
| |%..... | | | |
| Sago waste | 11 | 11 | 11 | 11 |
| Rice bran | 20 | 20 | 20 | 20 |
| Sago | 20 | 20 | 20 | 20 |
| Coconut meal | 22 | 22 | 22 | 22 |
| Corn | 10 | 10 | 10 | 10 |
| Fish meal | 12 | 12 | 12 | 12 |

| | | | | |
|--------------------------------------|------------|------------|------------|------------|
| Molasses | 3,3 | 3,3 | 3,3 | 3,3 |
| Coconut oil | 1,0 | 1,0 | 1,0 | 1,0 |
| Premix | 0,2 | 0,2 | 0,2 | 0,2 |
| NaCl | 0,5 | 0,5 | 0,5 | 0,5 |
| Total | 100 | 100 | 100 | 100 |
| Probiotic (ml/L) | 0 | 10 | 12,5 | 15 |
| Calculated nutrients content: | | | | |
| Metabolizable energy (Kcal/kg) | 2802 | 2802 | 2802 | 2802 |
| Crude protein (%) | 15.50 | 15.50 | 15.50 | 15.50 |
| Crude fiber (%) | 7.53 | 7.53 | 7.53 | 7.53 |
| Crude fat (%) | 7.49 | 7.49 | 7.49 | 7.49 |
| Ca (%) | 1.28 | 1.28 | 1.28 | 1.28 |
| P (%) | 0.88 | 0.88 | 0.88 | 0.88 |

Fermentation Feed Procedures

The procedure of making fermentation feed from each treatment is as follows: (a) all feed raw materials are milled using hammer mill machine until the size of mash, (b) then all feed ingredients are mixed until homogeneous, (c) mixed rations and then put bacteria probiotics that have been dissolved in water and mixed until evenly (according to the treatment). (d) then the ration is put into a closed container and stored for 7 days, (e) ready fermented feed is given to the peking duck.

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Statistical Analysis

The study was conducted for 4 weeks (age 5 - 8 weeks). The design used was completely randomized design with 4 treatment rations and 4 replications: R0 = Basal ration (control); R1 = Basal fermentation probiotic ration 10 ml / liter of water; R2 = Basal fermentation of probiotic 12.5 ml / liter of water; R3 = Basal fermentation probiotic 15 ml / liter of water. The observed variables were: final body weight, carcass weight, carcass percentage and percentage of carcass (back, chest, thigh and wings) of peking duck. Data was analyzed by Anova and Duncan test (Steel and Torrie 1993).

RESULTS AND DISCUSSION

Carcass Production

Production of 8 weeks old peking duck carcass from 4 fermentation ration treatment is shown in Table 2.

Table 2. Production of peking duck carcass of 8 weeks

| Parameters | Treatment | | | |
|-----------------------|--------------|--------------|--------------|--------------|
| | R0 | R1 | R2 | R3 |
| Final body weight (g) | 1.781±193.98 | 1.768±177.60 | 1.824±196.05 | 1.854±212.29 |
| Carcass weight (g) | 1.105±124.2 | 1.091±209.0 | 1.177±147.1 | 1.181±180.2 |
| Chest weight (g) | 289±75.6 | 293±51.2 | 296±65.7 | 290±73.4 |
| Thigh weight (g) | 184±49.9 | 207±52.2 | 207±34.9 | 222±53.9 |
| Back weight (g) | 350±122.7 | 381±172.7 | 433±138.0 | 488±202.9 |
| Wings weight (g) | 154±22.33 | 149± 31.76 | 150±23.92 | 155±35.49 |

Note: R0 = Basal ration (control); R1 = Basal fermentation probiotic ration 10 ml / liter of water; R2 = Basal fermentation of probiotic 12.5 ml / liter of water; R3 = Basal fermentation probiotic 15 ml / liter of water.

The results showed that local fermented feeding in peking duck did not show significant effect on final body weight, carcass weight and peking duck carcass weight, but numerically showed that local feeding of probiotic fermentation of 12.5 and 15 ml / liter of water was able to increase live weight and peking duck carcass weight 8 weeks old. Similarly, on carcass weight where the use of local feed fermentation probiotics 12.5 and 15 ml / liter of water tend to increase the value of peking duck carcass weight. This is probably caused by the nutrient content contained in each treatment ration is relatively the same and has sufficient peking duck needs so as not to affect the weight of life, carcass weight and weight of carcass of peking duck produced. Carcass is a slowly ripe organ, so with age, growth is increasing and the percentage of carcass weight and carcass percentage also increases. Donald *et al.* (2002) carcass weight associated with sex, age and body weight. Carcass increases with increasing age and body weight. Muhammad *et al.*, (2014) reported that provision of a complete ration based on local fermented raw materials up to 100% level has no effect on the increase of local duck body weight of South Sumatera. Rengga *et al.* (2014) reported the addition of soybean pulp in the feed up to 15% did not affect the weight of cut, and the weight of male ducks aged 8 weeks.

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Percentage of Carcass

Percentage of peking duck carcass of 8 weeks from 4 treatments of fermentation ration was presented in Table 3.

Table 3. Percentage of peking duck carcass of 8 weeks

| Parameters | Treatment | | | |
|-----------------------|-------------|-------------|-------------|-------------|
| | R0 | R1 | R2 | R3 |
| Percentage of carcass | 62.90±11.03 | 62.44±14.00 | 65.43±12.22 | 63.20±11.53 |
| Percentage of chest | 26.00±7.28 | 27.37±6.80 | 25.00±7.11 | 24.87±6.51 |
| Percentage of thighs | 17.02±5.84 | 19.76±6.81 | 17.85±3.63 | 19.21±3.75 |
| Percentage of back | 31.81±10.76 | 37.98±25.09 | 36.45±10.66 | 39.57±19.84 |
| Percentage of wings | 16.12±6.65 | 16.59± 6.05 | 15.47±4.92 | 16.20±3.47 |

Note: R0 = Basal ration (control); R1 = Basal fermentation probiotic ration 10 ml / liter of water; R2 = Basal fermentation of probiotic 12.5 ml / liter of water; R3 = Basal fermentation probiotic 15 ml / liter of water.

The results showed that the local fermentation feeding did not significantly affect on the percentage of carcass and the percentage of carcass (chest, thigh, back and wings) of 8 weeks old peking duck. The use of local feeds of probiotic fermentation of 12.5 and 15 ml / liter of water has a relatively higher percentage of carcass compared to the use of local feed without fermentation (control). This suggests that the use of local feed of probiotic fermentation with a certain percentage can increase the weight of carcass. Amiruddin *et al.* (2011) declare that carcass pieces will be determined by the size of the cut body parts such as head, neck, legs, feathers, and blood.

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Percentage of peking duck carcass produced in this study ranged between 62.44-65.43% and higher than the results of research Daud *et al.* (2016) produces percentage of peking duck carcass fed in the form of complete ration wafer containing coffee waste that is ranged between 53.72 - 61.10% and the percentage of peking duck

carcass 8 weeks old given a ration containing mas snail flour and probiotic supplementation in the ration ranged between 50.89 - 51.72% (Daud *et al.*, 2017).

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The use of fermented local diet has no significant effect on the percentage of carcass (chest, thigh, back and wings) of 8 weeks old peking duck (Table 3). This is because the duck carcass is a component of carcass which has a relatively constant growth on the increase of carcass weight (Prasetyo 2011). According to Fan *et al.* (2008), feed is one of the factors that influence the percentage of carcass in poultry consisting of the chest, back, thighs and wings. The existence of feed is very important for livestock because the feed contains nutrients needed for the formation of carcass components and other components of the body (Parakkasi, 1985). Feeding of wet fermentation does not negatively affect blood profiles, gastrointestinal organs and does not increase the levels of fecal matter doses of ammonia (Alaily, 2017).

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CONCLUSION

The use of local feed of probiotic fermentation ~~can may give produce~~ positive effect to production and percentage of 8 weeks old peking duck carcass. ~~By giving Local feeding of probiotic fermentation~~ 12,5 and 15 ml / liter of water ~~may generate a good performance of pucking duck, including increasing -is good as peking duck ration and can increase~~ carcass weight and percentage of peking duck carcass ~~of 8 weeks after 8 weeks being feed using local feed of probiotic fermentation.~~

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