

Giving A Variety of Fermented Tauge Flour Levels to The Percentage of Carbon and Giblet Broiler Chicken Age 5 Weeks

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Abstract

The commodity of poultry that has the greatest potential to be developed is broiler chicken because its growth is fast so the maintenance period is relatively short. The purpose of this study was to determine the effect of fermented bean sprouts flour on the percentage of carcasses and giblets as well as what level of fermented bean sprout flour administration in rations that affected the percentage of carcasses and giblets of broiler chicken CP 707. The design used in this study was a Completely Randomized Design (CRD) with 4 treatments and 3 replications. At each test using 4 CP 707 broiler chickens aged 2 weeks with homogeneous body weight. The treatments are P0 (control ration without fermented bean sprout flour), P1 (ration containing fermented bean sprout flour 3%), P2 (ration containing 6% fermented bean sprout flour), and P3 (ration containing 9% fermented bean sprout flour). The parameters observed were the percentage of carcasses and giblets (heart, liver, gizzard). The provision of various levels of fermented bean sprouts waste flour had no significant effect ($P>0.05$) on the percentage of carcasses and giblets of broiler chickens aged 5 weeks

Keywords: Broiler Chicken, Giblet, Carcass Percentage, Fermented Bean Sprouts Flour.

1. Introduction

In animal husbandry businesses to increase livestock productivity, various things that are aimed at fulfilling animal protein needs are needed. One of the livestock businesses that can be increased in production is poultry. The various types of poultry commodities that have the greatest potential to be developed, are broilers (*broiler chickens*), this is because the growth rate is very fast so the maintenance period is relatively short. The feed is the main basic ingredient for non-ruminant and ruminant livestock and it costs the most. Innovative efforts are needed in utilizing alternative feed ingredients that are cheap and have good nutritional content to reduce production costs. One way that can be done to reduce the cost of expensive feed is to utilize waste that can still be used as animal feed like one of them is market waste. Utilization of market waste can be used as broiler chicken feed with due regard to the nutritional content and also the availability of the waste if it is used as animal feed. One that can be used as animal feed ingredients is bean sprouts. Bean sprout waste is the residue from bean sprout production consisting of mung bean shells and bean sprouts fragments obtained during sifting or when separating to obtain edible bean sprouts. The nutritional content of bean sprouts is water content 32.4%, crude protein (PK) 12.09%, crude fiber (SK) 50.89%, crude fat (LK) 1.18%, calcium (Ca) 0.37%, Phosphor (P) 0.33% and metabolic energy content (EM) in amount of 2689 kcal/kg [1]. Because of the high fiber content of bean sprout waste, the processing is needed, one of the processing that can be done is fermented. Fermentation is an overhaul of a physical hard structure, chemistry, and biology so that materials from complex

structures become simple so that the digestibility of livestock becomes more efficient [2]. Bean sprout flour can not be given directly to poultry because in the digestive tract of poultry there are no microbes that can digest the crude fiber, so it requires fermentation treatment to reduce levels of crude fiber and increase digestibility [3]. The purpose of this study was to determine the effect of the provision of fermented bean sprouts waste flour to the percentage of carcasses and giblets as well as what level of fermented bean sprout flour administration in rations that affected the percentage of carcasses and broilers giblets CP 707.

2. Material and Methods

2.1 Place and Time Research

This research was conducted in the experimental cage of the Faculty of Agriculture, University of Warmadewa, located in area Tanjung Bungkak, Sumerta Sub-district, Denpasar City, Bali, The study lasted for 5 weeks consisting of 2 weeks of the brooding period and 3 weeks of treatment starting from February 26 to April 3, 2019

2.2 Research Materials

This research used 48 broiler strains CP 707 by using treatment feed ingredients namely bean sprouts waste flour by compiling other feed ingredients such as corn, rice bran, soybean meal, fish meal, coconut oil, and minerals. The enclosure used is a 12-cell battery enclosure with the size of each plot (P x L x T) 50 cm x 50 cm x 47 cm made of bamboo and wood. The feed container is made from a split pipe and a 2-liter drinking water container. Like a light bulb, 6 pieces of 40-watt incandescent lamps are used. Other tools used are Tarps, displays, digital electrical scales, plastic bags, stationery, surgical instruments, and Thermo hygrometers.

2.3 Research Design

The design used in this study is a complete random design (CRD) with 4 treatments and 3 replications. The treatment is P0 (control) chicken that is not fed with fermented bean sprouts, P1 chicken fed with rations containing 3% fermented bean sprouts, P2 chicken fed with rations containing 6% fermented bean sprouts, and P3 chicken fed with 9% fermented bean sprouts. Each treatment consisted of 3 replications, so there are 12 plots and each in one plot consists of 4 chickens aged 2 weeks. So that in this study using 48 broilers.

2.4 Research Variable

The variables observed in this study were the percentage of carcass and Giblet (heart, liver, gizzard). The data obtained were analyzed by analysis of variance, if there were significantly different results ($P < 0.05$) then it was continued with the multiple distance test from Duncan.

3. Results and Discussion

The provision of fermented bean sprouts waste flour in 5-week broiler chicken rations had no significant effect ($P > 0,05$) on the percentage of carcasses and broiler chicken giblets (Tabel 1). Nevertheless, fermented bean sprout flour can still be used as additional feed ingredients to reduce the use of commercial feed. Ref. [4] states that the feed must contain nutrients in sufficient and balanced conditions to support maximum growth and produce a high final weight. The high final weight will affect the high percentage of carcasses produced. Besides that, the percentage of the

carcass is also influenced by the carcass weight, the higher the carcass weight, the higher the percentage of carcasses produced. According to [5] in [6] states that the carcass weight produced is influenced by several factors, namely age, sex, cutting weight, size and conformation of the body, fat, quality and quantity of rations as well as strains maintained.

Average percentage of carcasses of each treatment P0, P1, P2 and P3 are 68.41%, 69.74%, 68.32% and 64.97% (Table 1). Percentage of carcass obtained from carcass weight divided by weight cut times 100%. P1 treatment showed the highest percentage of a carcass or the best results, although statistically showed no significant difference with other treatments. P1 treatment which has a percentage of a carcass is almost the same as P0 (control) so that it can be said P1 treatment gives the best results.

The percentage of giblets includes the percentage of heart, percentage of liver and percentage of the gizzard. From the statistical analysis of fermented bean sprouts, waste flour did not have a significant effect on the percentage of giblets. This is because the cut weight and the weight of the broiler chicken giblet also show no significant effect.

The average percentage of the heart for each treatment P0, P1, P2 and P3 are 0.61 %, 0.60%, 0.57% and 0.62% statistically different insignificantly. The results of this study are not much different from [7] reported that the percentage of broiler chicken heart is 0.46-0.50%, with an average of 0.47% of body weight. The average percentage of heart in this study is in the normal range, the average percentage of the heart is 0.5-1.42% of life weight [8]. Increasing fermented bean sprouts waste tends to have a greater heart percentage compared to other treatments. [9] states that the heart is very vulnerable to poisons and anti-nutritive substances, Cardiac enlargement can occur due to the accumulation of toxins in the heart muscle.

The average percentage of hearts for each treatment P0, P1, P2 and P3 are 2.40%, 2.39%, 2.34% and 2.74% statistically different insignificantly. The percentage of liver obtained is still within the normal range. The results of this study are not much different from [10] that the average weight percentage of broiler chicken liver ranges from 1.98 to 2.12% of the cut weight. While [7] states that the percentage of broiler chicken liver is 2.16% of body weight. [11] states that the percentage of hearts obtained between 2.15-2.59%. According to [12], the percentage of the liver is influenced by the activity of the liver in neutralizing the presence of toxic compounds or anti-nutrients. In this study, the provision of fermented bean sprouts did not have a significant effect

Percentage of gizzard each treatment P0, P1, P2 and P3 are 2.96%, 2.89%, 3.16% and 3.20%. The results showed that the percentage of gizzard broiler chickens due to the influence of the provision of fermented bean sprouts flour was quite large although statistically different was not significant. [13] explains that the growth and development of the gizzard is inseparable from the growth of the animal's body itself, the higher the growth the higher or better the growth of other organs, one of the gizzards in poultry has the same function as teeth in mammals, which is to reduce the size of food mechanically. More and more, hard and rough food that enters the gizzard, the higher the activity of gizzard, the greater the weight of gizzard. The use of 9% bean sprouts certainly makes the gizzard work heavier because of its higher crude fiber content. But in this study, the provision of bean sprouts waste did not significantly affect the weight of the gizzard. This might be because bean sprouts have been fermented in advance, increasing digestibility in feed ingredients.

Table 1.
Average Percentage of Carcass and Giblet by Providing Various Levels of Fermented Bean Sprout Flour in a 5 Week Broiler Ransum

Variable	Treatment ⁽³⁾				SEM ⁽²⁾
	P0	P1	P2	P3	
Percentage of Carcass (%)	68.41 ^a	69.74 ^a	68.32 ^a	64.97 ^{a(1)}	0.58
Percentage of Giblet :					
Percentage of Heart (%)	0.61 ^a	0.60 ^a	0.57 ^a	0.62 ^a	0.02
Percentage of Liver (%)	2.40 ^a	2.39 ^a	2.34 ^a	2.74 ^a	0.08
Percentage of Gizzard (%)	2.96 ^a	2.89 ^a	3.16 ^a	3.20 ^a	0.12

Information: 1) Values with the same letter in the same line show no real difference ($P > 0.05$).

2) SEM (*Standard Error of The Treatment Means*).

3) P0: Fermented Beanless Flour Feeding

P1: Rations containing 3% Fermented Bean Sprout Flour

P2: Rations containing 6% Fermented Bean Sprout Flour

P3: Rations containing 9% Fermented Bean Sprout Flour

4. Conclusions

Based on the results of the study it can be concluded: The provision of fermented bean sprouts waste flour has no significant effect on the percentage of carcasses and giblets of broiler chickens aged 5 weeks. The provision of fermented bean sprouts wastes flour to a level of 9% does not increase the percentage of carcasses and the percentage of broiler chicken giblets at 5 weeks.

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