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Journal homepage: https://talenta.usu.ac.id/jpi/workflow/index/16319/3

Carcass Quality of 75 Days Kampung Unggul Balitnak Chickens Fed Diets With Fermented Cassava Leaf Flour (Manihot Utilissima)

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ARTICLE INFO

Article history:
Received 18 July 2024
Revised 30 July 2024
Accepted 3 August 2024
Available online 9 August 2024

E-ISSN: 2808-2753

How to cite:
Untung Pardosi, Ghuido Martinus, "Carcass Quality of 75 Days Kampung Unggul Balitnak Chickens Fed Diets With Fermented Cassava Leaf Flour (Manihot Utilissima)" Jurnal Peternakan Integratif, Vol. 12, No. 02,pp. 1-9 August. 2024, doi: 10.32734/jpi.v 10.32734/jpi.v12i2.17535

ABSTRACT

The advantage of Kampung Unggul Balitnak Chickens chicken is that the harvest period is shorter than ordinary native chicken. This study aims to determine the effect of fermented cassava leaf flour (Manihot Utilissima) in commercial fed on the quality of carcasses of Kampung Unggul Balitnak chickens aged 75 days. The research method used was a complete randomized design (CRD) with 4 treatments consisting of P0 = 100% commercial ration + 0% fermented cassava leaf flour, P1 = 98% commercial ration + 2% fermented cassava leaf flour, P2 = 96% commercial ration + 4% fermented cassava leaf flour, P3 = 94% commercial ration + 6% fermented cassava leaf flour with 5 replicates. Parameters observed included slaughter weight, carcass weight and carcass percentage. The data obtained were analyzed using Analysis of Variance (ANOVA). The results showed that the provision of fermented cassava (*Manihot Utilissima*) leaf meal in commercial rations on 75-day-old KUB chickens had no significant effect (P>0.05) on slaughter weight, carcass weight and carcass percentage. In conclusion addition of fermented cassava flour in commercial fed did not effect carcass quality thus 6% of fermented cassava flour could be used as an additional ingredients in commercial rations.

Keyword: Carcass Weight, Carcass Percentage, Fermented Cassava Leaf, Native Chickens, Slaughter Weight

1. Introduction

The advantages of Kampung Unggul Balitnak (KUB) chickens are that the harvest period of KUB chickens takes 70-90 days, faster than ordinary native chickens which take about 5 months. Its development is faster, has a high resistance to disease, just like joper chickens. Its brooding behavior is also low like joper chickens. The fed is relatively more expensive because KUB chickens are intended as laying hens [1].

Cassava leaf flour can be an appropriate ration material to be mixed with commercial rations. According to Tesfaye et al. (2014) cassava leaves contain high protein which ranges from 20.6-34.4% [2]. so it can be used as an alternative as one of the mixed ingredients for making animal feed. However, cassava leaves contain high crude fiber which limits its use. In addition, cassava leaves contain cyanide acid (HCN) which is a toxin, therefore it is very important to reduce the levels of crude fiber and cyanide acid in cassava leaves through fermentation.

Kobawila et al. (2005) argue that the fermentation method is used to remove the content of cyanide acid compounds in cassava leaves [3]. The presence of high crude fiber content also needs to be fermented to hydrolyze food substrates into oligosaccharides, a little mannose, glucose and galactose, which are simple forms of material that are more easily absorbed by livestock. Microorganisms that can be used in cassava leaf fermentation are EM4 with the aim of reducing

crude fiber levels and at the same time increasing crude protein levels [4]. Feed containing cassava leaf flour with a percentage below 5% can increase ration consumption and body weight gain of broiler chickens and giving higher 10-20% has decreased body weight gain [5].

The use of cassava leaf meal at the level of 6% in the ration formulation increased body weight, carcass percentage and decreased the percentage of abdominal fat in broiler chickens. While at the 8% level there was a decrease in live weight in broilers. Meanwhile, according to (Nova *et al*., 2021), the provision of cassava leaf flour as a feed ingredient in the formulation of KUB chicken rations needs to be processed first to reduce cyanide acid (HCN) levels [6,7].

The advantage of this fermented feed is that it can last up to 3-4 months with good storage. The disadvantage of fermented feed is that farmers must chop the type of feed in small sizes so that the fermentation process can take place properly, so that farmers who do not have a chopping machine will spend more energy and time. Another drawback is that fermented feed storage must be anaerobic and protected from sunlight [8].

Chicken carcass composition is influenced by many factors including b r e e d , sex, age and cage density. Carcass production is closely related to body weight. In addition to body weight factors, carcass weight is also influenced by genetic factors, age, ration quality, management and animal health. According to Abdullah et al. (2010), carcass percentage is an important factor to assess livestock production, because production is closely related to live weight, where the more the live weight increases, the carcass production increases. In addition, chickens with high body weight will produce a high carcass percentage [9].

2. Methods

2.1 Place and Time of Research

The research was conducted in the Biological Cage of the Faculty of Animal Husbandry, HKBP Nommensen University in Simalingkar A Village, Pancur Batu District, Deli Serdang Regency. This study was conducted for 75 days. At the age of 1-7 days, commercial feed was given without treatment for feed adjustment, at the age of 8-75 days, commercial rations were given and EM4 fermented cassava leaf meal was added. Carcass quality data were collected for slaughter weight, carcass weight and carcass percentage at the age of 75 days.

2.2 Research Materials and Tools

The materials used in the study were 1-day-old KUB chickens as many as 100 heads and for sampling as many as 40 heads from the 75-day-old population. The materials used were commercial rations, cassava leaf flour, EM4, drinking water, medicines and vitamins. The cage used in the study was a stage system cage The cage was divided into 20 experimental plots. Each plot was filled with 5 chickens equipped with 20 feeders, 20 drinking places, 10 kg Nankar brand digital scales with an accuracy of 10 g and 20 incandescent lamps of 25 watt capacity as artificial heaters.

2.3 Study Design

This study was conducted using a completely randomized design (CRD) with 4 treatments of EM4 fermented cassava leaf meal in commercial rations. Each treatment was repeated 5 times and each replicate consisted of 5 chickens aged 75 days as experimental units and from each experimental unit 2 chickens were taken as samples.

The feeding levels of fermented cassava leaf meal are as follows:

P0 = 100% commercial ration + 0% fermented cassava leaf meal
P1 = 98% commercial ration + 2% fermented cassava leaf meal
P2 = 96% commercial ration + 4% fermented cassava leaf meal
P3 = 94% commercial ration + 6% fermented cassava leaf meal

2.4 Research Parameters

1. Slaughter Weight

Slaughter weight was obtained by weighing KUB chickens just before slaughter after being fed for 8 hours and expressed in g/head.

2. Carcass Weight

Carcass weight is calculated from the separation of feathers, blood, head to the base of the neck and legs to the knee, all entrails are removed.

3. Carcass Percentage

Carcass percentage was calculated by dividing the carcass weight by the slaughter weight of KUB chickens and then multiplying by 100%.

3. Results and Discussion

3.1 Slaughter Weight

The slaughter weight of KUB chickens is the result of weighing the weight of the chicken before cutting after being fed for 8 hours. The following is the average slaughter weight of KUB chickens given cassava leaf flour in commercial feed can be seen in Table 1.

Table 1. Slaughter Weight of 75-Day-old KUB Chickens (g/head)

Treatments	Repetition					Total	Average
	U1	U2	U3	U4	U5		
P0	1196.00	1253.50	1171.50	1077.50	1167.50	5866.00	1173.20^{tn}
P1	1082.00	1135.00	1284.00	1274.00	1210.50	5985.50	1197.10^{tn}
P2	1210.50	1108.50	1139.50	1092.00	1122.00	5672.50	1134.50^{tn}
P3	998.50	1217.50	1116.50	1043.50	1085.00	5461.00	1092.20^{tn}
Total						22985.00	
Average							1149.25

Description: ^{tn} : Superscripts in the same column indicate not significantly different (P>0.05).

Based on Table 1, it can be seen that the average slaughter weight of 75-day-old KUB chickens is 1149.25 g with a range of 998.50-1284.00 g. The best treatment was P1 (2%) with an average slaughter weight of 1197.10 g, and the lowest average slaughter weight was P3 (6%) with an average slaughter weight of 1092.20 g. According to the results above, the slaughter weight of KUB chickens is higher than the results of research by Nova *et al.* (2021) which states that the use of cassava leaf flour in commercial rations on the performance of KUB chicken production obtained an average slaughter weight of 750.747 g [11].

The results of the above study are higher than the results of Damanik's research (2023) which reported the slaughter weight of 8-week-old joper chickens around 1130.43 g [12]. The results of this study are higher than the results of research by Munira *et al.* (2016), that the slaughter weight of native chickens up to 10 weeks of age ranged from 873.8 g/head [13].

The results of the analysis of variance showed that the use of cassava leaf flour in the commercial ration of KUB chickens gave no significantly different effect (P>0.05) on the slaughter weight of 75-day-old KUB chickens. Livestock growth is influenced by gender, ration quality and environment. The better the quality of the ration given to the chicken, the higher the slaughter weight. High final body weight during maintenance will affect the slaughter weight obtained [14].

Final weight is influenced by body weight gain and age of livestock, while body weight gain is influenced by nutrient intake and digestion in the body. The better the digestion and absorption of nutrients, the more it will affect the slaughter weight. Cutting weight is influenced by feed consumption, the higher the feed intake, the more optimal growth will be and produce high cutting weight [15].

3.2 Carcass Weight

Carcass weight is the weight of the chicken body after undergoing head separation to the neck trunk limit, knee limit legs (feet), internal organs and blood and feathers. The average carcass weight of 75-day-old KUB chickens from the results of the study can be seen in Table 2.

Table 2. Carcass weight of 75-day-old KUB chickens (g/head).

Treatments	Repetions					Total	Average
	U1	U2	U3	U4	U5		
P0	768.50	790.00	702.00	680.50	729.50	3670.50	734.10^{tn}
P1	689.50	694.00	790.00	812.50	727.00	3713.00	742.60^{tn}
P2	757.50	671.00	704.50	663.50	674.00	3470.50	694.10^{tn}
P3	606.00	747.50	681.50	627.50	665.00	3327.50	665.50^{tn}
Total						14181.50	
Average							709.08

Description: ^{tn} : Superscripts in the same column indicate not significantly different (P>0.05).

From Table 2, it can be seen that the average carcass weight during the study was 709.08 g with a range of 606.00 - 790.00 g. The highest carcass weight was found in P1 (2%) with an average carcass weight of 742.60 g and the lowest carcass weight was found in P3 (6%) with an average carcass weight of 665.50 g. At P0 (0%) the average carcass weight was 734.10 g while at P2 (4%) the average carcass weight was 694.10 g. [11] mentioned that the use of cassava leaf flour in commercial rations on the performance of KUB chicken production obtained an average carcass weight of 400.69 g. The results of the above research are lower than the results of Damanik's research (2023) reporting the carcass weight of 8-week-old joper chickens around 724.40 g [12].

The results of the analysis of variance showed that the use of cassava leaf flour in the commercial ration of KUB chickens had no significant effect (P>0.05) on the carcass weight of 75-day-old KUB chickens. This is in accordance with the opinion of Erwan (2003) who reported that carcass weight will increase with increasing age and live weight [16]. This study indicated that provision fermented cassava leaf flour in commercial fed did not effect carcass weight thus in rearing KUB chicken could lowering cost. KUB fed is relatively expensive as according to [1] KUB fed is somehow like laying hens.

3.3 Carcass Percentage

Carcass percentage is the ratio between carcass weight and slaughter weight multiplied by 100% The average carcass percentage of 75-day-old KUB chickens from the results of the study can be seen in Table 3.

Table 3. Carcass Percentage of 75-Day-old KUB Chickens (gram/head).

Treatments	Repetions					Total	Average
	U1	U2	U3	U4	U5		
P0	64.26	63.02	59.92	63.16	62.48	312.84	62.57^{tn}
P1	63.72	61.15	61.53	63.78	60.06	310.24	62.05^{tn}
P2	62.58	60.53	61.83	60.76	60.07	305.77	61.15^{tn}
P3	60.69	61.40	61.04	60.13	61.29	304.55	60.91^{tn}
Total						1233.40	
Average							61.67

Description: ^{tn} : Superscripts in the same column indicate not significantly different (P>0.05).

According to the study data on Table 3, average carcass percentage was lower than the results of Atha'illah's research (2023) showing the percentage of KUB chickens during the study had an average of 62.75% for 10 weeks [17]. The results of the above study are higher than the results of research by Munira *et al.* (2016) that the percentage of native chicken carcasses up to 10 weeks of age ranged from 56.0% [13].

The results of the analysis of variance showed that the addition of cassava leaf flour in the commercial ration of KUB chickens aged 75 days was not significantly different (P>0.05) to the percentage of carcasses. Carcass percentage is also related to sex, age and live weight. Carcass percentage will increase with increasing age and live weight. Affandi *et al.* (2021) state that carcass percentage as a ratio of carcass weight to live weight does not always show a low live weight and will result in a lower carcass percentage as well [18].

4. Conclusion

The provision of fermented cassava leaf flour in commercial rations with different levels caused the same effect on carcass quality (slaughter weight, carcass weight and carcass percentage) of 75-day-old KUB chickens. 6% of fermented cassava flour meal could be added in commercial rations as feed for KUB chickens.

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