Vol. 2 No. 4 Edisi Oktober 2025 E. ISSN. 3032-2472
Multidisciplinary Indonesian Center Journal (MICJO)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/micjo
Email: admin@jurnalcenter.com

PERFORMANCES OF BROILER CHICKEN FED RATIONS CONTAINNING CINNAMON BARK POWDER (*Cinnamomum burmannii*).

PERFORMNS AYAM BROILER YANG DIBERI RANSUM MENGANDUNG BUBUK KULIT KAYU MANIS (*Cinnamomum burmannii*).

Evacuree S. Tangkere [1*], Anastasya A. Lawani [2], Jein R. Leke [3], Florencia N. Sompie [4]
[1] Lecturer of Animal Sciences Faculty, Sam Ratulangi University, Email: evacuree.s@gmail.com
[2] Alumny of Animal Sciences Faculty, Sam Ratulangi University, Email: anastasyaamelialawani@gmail.com
[3] Lecturer of Animal Sciences Faculty, Sam Ratulangi University, Email: rinileke@yahoo.com
[4] Lecturer of Animal Sciences Faculty, Sam Ratulangi University, Email: nerysompie@unsrat.ac.id
*email Koresponden: evacuree.s@gmail.com

DOI: https://doi.org/10.62567/micjo.v2i4.1138

Article info:

Submitted: 21/07/25 Accepted: 12/10/25 Published: 30/10/25

Abstract

This research was conducted in order to determine or to re-examine the performances of broiler chickens fed ration containing cinnamon bark powder (*Cinnamomum burmannii*). Eighty of CP 707 broiler chickens aged of 2 weeks were used and kept until 6 weeks old. Completely Randomized Design with 5 treatments and 4 replications each treatment was used in this study; the treatments used were, T0= 100% basal ration without cinnamon bark powder (CBP), T1= 99.5% basal ration + 0.5% CBP, T2= 99% basal ration + 1% CBP, T3= 98.5% basal ration + 1.5 % CBP, and T4= 98% basal ration + 2% CBP. The measurements taken were feed consumption, weight gain, feed conversion, and final body weight. The results of analysis of variance (ANOVA) and Duncan test showed that, giving cinnamon bark powder up to 2% in the ration had an effect on CP 707 broiler chickens aged 2-6 weeks; had a very significantly different effect ($P<0.01$) on body weight gained and so, on final body weight; and significantly different ($P <0.05$) on feed conversion, but not on feed consumption. In this study, the higher the level of CBP in the ration, the weight gained and final body weight decreased but feed conversion increased. Based on the results of the analysis and discussion, it can be concluded that giving cinnamon bark powder as a natural feed additive up to 2% in the feed did not improve the performance of CP 707 broiler chickens, because of weight gained and final body weight of the chickens decreased, while, feed conversion increased, which means that, economically it was not getting better.

Keywords: performances, broiler chicken, cinnamon bark powder.

Multidisciplinary Indonesian Center Journal (MICJO)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/micjo
Email: admin@jurnalcenter.com

Abstrak

Penelitian ini dilakukan untuk mengetahui atau menguji kembali pengaruh pemberian bubuk kulit kayu manis (*Cinnamomum burmannii*) dalam ransum terhadap performans ayam broiler. Penelitian ini menggunakan 80 ekor ayam broiler CP 707 umur 2-6 minggu. Rancagan Acak Lengkap (RAL) dengan 5 perlakuan dan 4 ulangan digunakan pada penelitian ini; perlakuan yaitu, P0= 100% ransum basal tanpa bubuk kulit kayu manis (BKM), P1= ransum basal 99,5% + 0,5% BKM, P2= ransum basal 99% + 1% TKM, P3= ransum basal 98,5% + 1,5% BKM, dan P4 = ransum basal 98% + 2% BKM. Variabel yang diamati adalah konsumsi pakan, pertambahan bobot badan, konversi pakan dan bobot badan akhir. Hasil uji keragaman (ANOVA) dan uji Duncan didapati bahwa pemberian bubuk kulit kayu manis sampai taraf 2% dalam ransum memberikan pengaruh terhadap ayam broiler CP 707 umur 2–6 minggu; memberikan pengaruh berbeda sangat nyata ($P<0,01$) terhadap pertambahan bobot badan dan bobot badan akhir, serta berbeda nyata ($P<0,05$) terhadap konversi pakan, tetapi tidak pada konsumsi pakan. Pada penelitian kali ini, semakin tinggi taraf bubuk kulit kayu manis dalam ransum, pertambahan bobot badan dan bobot badan akhir menurun tetapi konversi pakan meningkat. Berdasarkan hasil analisis dan pembahasan dapat disimpulkan, bahwa pemberian bubuk kulit kayu manis sebagai *feed additive* alami sampai taraf 2% dalam pakan tidak membuat performans ayam broiler CP 707 semakin baik, karena pertambahan bobot badan dan bobot badan akhir ayam menurun, bahkan konversi pakan meningkat, yang berarti secara ekonomis tidak menjadi semakin baik.
Kata Kunci: performans, ayam broiler, tepung kulit kayu manis.

1. INTRODUCTION

The human need for animal protein sources is very high, which causes the livestock sector in Indonesia, especially broiler chickens, to play an important role as a source of animal protein due to their rapid growth and affordable prices (Nuryati, 2019). Broiler chicken production in North Sulawesi in 2018 reached 13,150.23 tons and by 2022, broiler chicken production reached 13,941.80 tons. This indicates an increase in broiler chicken production of 791.57 tons from 2018 (Central Bureau of Statistics, 2023).

Generally, livestock industry players want their animals to remain healthy until the end of their production or harvesting period. One measure to maintain animal health is the use of feed additives such as synthetic antibiotics, both in feed and drinking water; however, unfortunately, the use of antibiotics can have adverse effects on the livestock themselves as well as affect humans (Masrianto et al., 2019; Bura et al., 2024). In addition, synthetic antibiotics are not designed to avoid resistance (Lansdowne, 2020). To address the chemical residues found in livestock, including broiler chickens, the government of the Republic of Indonesia has established maximum residue limits for antibiotics as stated in SNI 01-6366-2000, ranging from 0.00012 - 4mg/kg (BSNI, 2000) and subsequently issued Law No. 41 of 2014 concerning Animal Husbandry and Animal Health; which prohibits the use of antibiotics as non-nutritive feed additives.

One of the solutions to this problem is the use of natural feed additives in broiler chicken feed (Bando, et. al., 2020; USDA-NASS, 2024). The addition of natural feed additives in livestock feed aims to stimulate growth, prevent diseases, and enhance livestock productivity. The choice to use herbal plant-based natural feed additives instead of conventional feed additives is made because they are relatively cheaper and easier to obtain. Natural feed additives that have been widely produced and used for livestock include curcuma, turmeric, betel leaves, cinnamon, and ginger (Arifin and Pramono, 2014;

Multidisciplinary Indonesian Center Journal (MICJO)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/micjo
Email: admin@jurnalcenter.com

Eltazi, 2014; Nono et. al., 2017; Bin Shan et. al., 2007). One of the plants found in North Sulawesi is the cinnamon species *Cinnamomum burmannii*, and its use for health and the interests of the livestock industry has been widely researched, including for poultry (Sompie et. al., 2024; Sompie et. al., 2023; Sipahutar et. al., 2022; Irawan et. al., 2022; Nurhasmiati and Purwanri, 2021; Chowlu et al., 2018). The use of cinnamon bark powder up to 6% in the feed reduces feed consumption and weight gain in broiler chickens (Yuhendra et al., 2021).

Based on the above description, research on the utilization of cinnamon bark powder as a natural feed additive was being conducted or re-tested, to determine the performance of CP 707 broiler chickens that were given feed containing cinnamon powder (*Cinnamomum burmannii*).

2. RESEARCH METHOD

This study was used 80 Lohman White CP 707 broiler chickens aged 2 weeks with an average weight of P0= 492.50+9.52, P1= 492.50+7.36, P2= 489.50+8.91, P3= 493.75+4.33, P4= 497.45+11.69; a commercial starter feed for broiler chickens of 511 alpha totaling 350 kg (PT. Charoen Pokphand); and cinnamon powder of 3.5 kg. The cinnamon bark powder was made from the bark of cinnamon trees sourced from Pontak Village, Ranoyapo District, South Minahasa Regency (Sompie et. al., 2023). The composition of the nutritional content of the experimental feed can be seen in Table 1.

Table 1. Nutritional Content of the Treatment Ration

NUTRIENTS / ENERGY	**T0***	**T1**	**T2**	**T3**	**T4**
		0,5%	**1%**	**1,5%**	**2%**
Crude Protein (%)	20,00	19,92	19,83	19,74	19,66
Crude fat (%)	5,00	4,97	4,95	4,93	4,92
Crude fibre (%)	5,00	5,17	5,34	5,51	5,69
Calcium (%)	0,80	0,80	0,80	0,81	0,81
Phosphor (%)	0,50	0,49	0,49	0,49	0,49
Metabolic Energy (kcal/kg)	3200	3200,85	3201,71	3202,57	3203,42

Note:*) Results of the Charoen Pokhpand analysis

The battery cages sized 39 x 38.7 x 30 cm were used in this study. The equipment used includes a feeding container made of plastic square measuring 17.5 x 12 x 7.5 cm, a plastic drinking container with a capacity of 300 ml, a digital scale to measure the feed weight daily and the weekly weight gain of the chickens, a plastic bucket, and stationery to record research data on-site.

Completely Randomized Design with 5 treatments and 4 replications each treatment was used in this study; the treatments used were, T0= without cinnamon bark powder (CBP), T1= 99.5% basal ration + 0.5% CBP, T2= 99% basal ration + 1% CBP, T3= 98.5% basal ration + 1.5 % CBP, and T4= 98% basal ration + 2% CBP. The measurements taken were firstly, Feed Consumption (g/day/head), which was obtained from the feed given minus the remaining feed per head per day, then the average value per day per head was calculated; Secondly, Weight Gain (g/day/head), which was obtained from the weight of the ducks at the end of the week minus the weight of the ducks from the previous week per head, then the average value per day per head was calculated; Thirdly, Feed Conversion Ratio, which was obtained from dividing the feed consumption per day per head by the weight gain per day

Multidisciplinary Indonesian Center Journal (MICJO)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/micjo
Email: admin@jurnalcenter.com

per head; lastly, Final Body Weight (g/head), which was obtained by weighing each broiler chicken at the end of the experiment and then calculating the average value per head.

The research data was tabulated using Excel and then analyzed using analysis of variance (ANOVA) to see the effect of treatments, followed by Duncan's test to determine the differences among treatments (Steel and Torrie, 1994) using SPSS version 23.

Formula: $Yij = \mu + \alpha i + \varepsilon ij$

Note:

Yij = variable to be analyzed for treatment i, replication j

μ = population mean

αi = effect of treatment i

εij = experimental error for treatment i, replication j

i = treatment (1, 2, 3, 4, 5)

j = replication (1, 2, 3, 4)

3. RESULTS AND DISCUSSION

The average feed consumption (g/day/head), weight gain (g/day/head), feed conversion, and final body weight (g/head) of CP 707 broiler chickens can be seen in Table 2.

Table 2. Average feed consumption, weight gain, feed conversion, and final body weight of CP 707 Broiler Chickens aged 2 – 6 weeks

Variables	Treatments (T)				
	T0 (0%CBF)	T1 (0,5%CBF)	T2 (1% CBF)	T3 (1,5% CBF)	T4 (2% CBF)
Feed consumption (g/day/head)	118,44 ±6,40	120,08 ±3,91	117,66 ±2,47	120,56 ±1,68	115,97 ±5,33
Body weight gained (g/day/head)	67,84 ±0,81^{a}	64,20 ±1,29^{b}	62,53 ±0,30^{bc}	63,06 ±1,03^{bc}	62,16 ±1,53^{c}
Feed conversion	1,68 ±0,08^{b}	1,80 ±0,05^{ab}	1,81 ±0,04^{a}	1,84 ±0,04^{a}	1,76 ±0,12^{ab}
Final body weight (g/head)	2.462,10 ±21,24^{a}	2.359,95 ±42,48^{b}	2.310,43 ±7,23^{bc}	2.329,35 ±26,77^{bc}	2.307,85 ±44,09^{bc}

Note: Different superscripts on the same line indicate significant differences ($P < 0.05$) and very significant differences ($P < 0.01$).

CBF = Cinnamon bark powder

Feed Consumption

The average feed consumption of CP 707 broiler chickens aged 2-6 weeks in this study were ranged from 115.97 - 120.56 g/day/head (Table 2). The ANOVA test results showed that the treatment did not have a significant effect ($P>0.05$) on the feed consumption of broiler chickens among the

Multidisciplinary Indonesian Center Journal (MICJO)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/micjo
Email: admin@jurnalcenter.com

treatments. The feed consumption of broiler chickens among treatments was relatively similar or almost the same, even though there was an addition of cinnamon powder with varying levels in the feed.

The average feed consumption value of broiler chickens across treatments in this study, which did not show significant differences, may be due to the composition of the main active substances and compounds such as cinnamaldehyde and essential oils, as well as tannins in cinnamon powder that were given up to 2%, which have yet to impact the taste buds of broiler chickens, where taste buds allow chickens to identify the taste of feed. Thus, it can be said that the administration of cinnamon powder up to 2% in the diet has not affected palatability, even though the cinnamon powder used in this study was still fresh and had a very strong aroma because it was just ground; additionally, the olfactory sense in chickens was not very developed (Mason and Clark, 2000). Yuhendra, et al. (2021) stated that there was a significant decrease in the consumption of CP 707 broiler feed given a diet containing 6% cinnamon bark powder; it was suspected that the decrease occurred due to the active substance cinnamaldehyde in the cinnamon bark powder reducing palatability. Irawan et al. (2022) stated that there was a significant decrease in the consumption of broiler duck feed when given a ration containing cinnamon powder up to 5%, caused by the presence of tannins and saponins which convey a bitter and astringent taste; this was in line with the report by Santoso and Sartini (2001). Sipahutar et al. (2022) stated that there was a decrease in the consumption of broiler chicken ration when given drinking water containing 10g - 70g of cinnamon bark powder per liter; it was suspected that the taste buds of the poultry identify the bitter and astringent flavors in the feed they consumed. Herlina et al. (2015) stated that taste, texture, and smell greatly influence the feed consumption of broiler chickens.

The feed consumption standard for CP 707 broiler chickens aged 2–6 weeks is 515-4.625 g/week/head (PT Charoen Pokphand, 2014) or 73.57-660.71 g/day/head (data processed). The average feed consumption of CP 707 broiler chickens in this study is still lower by 26.22 - 30.83 g/day/head, compared to the feed consumption standard for broiler chickens issued by PT. Charoen Pokphand. This indicates that the feed consumption of CP 707 broiler chickens in this study did not meet the standard. The low feed intake of the broiler chickens in this study may also be due to the fact that the broiler livestock were outside their comfort zone, as seen during the study when the experimental livestock were panting, indicating that the research barn's temperature was above the comfort zone for broilers.

Weight Gain

The average weight gain of CP 707 broiler chickens aged 2–6 weeks in this study ranged from 62.16–67.84 g/day/head (Table 2). The results of the ANOVA test showed that the treatment had an effect that was very significant ($P<0.01$) regarding weight gain of broiler chickens among treatments. Based on the multiple range test (Duncan test), the weight gain of the broiler chicken group fed a diet without cinnamon powder (T0) was significantly different ($P<0.05$) from the weight gain of the broiler chicken group fed diets containing 0.5% (T1), 1% (T2), and 1.5% (T3) cinnamon powder, and even the weight gain of the broiler chicken group fed a diet without cinnamon powder (T0) was very significantly different ($P<0.01$) from the weight gain of the broiler chicken group fed a diet containing 2% (T4) cinnamon powder. The weight gain of the broiler chicken group fed a diet containing 0.5% (T1) cinnamon powder was significantly different ($P<0.05$) from the weight gain of the broiler chicken group fed a diet containing 2% (T4) cinnamon powder. Based on data analysis, it can be seen that the higher the level of cinnamon powder in the diet, the greater the weight gain of the broiler chickens.

The increase in body weight of broiler chickens across treatments in this study showed significant differences, decreasing as the level of cinnamon powder increased. This was suspected to be

Multidisciplinary Indonesian Center Journal (MICJO)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/micjo
Email: admin@jurnalcenter.com

due to the presence of anti-nutritional substances in the form of tannins and active compounds such as cinnamaldehyde and essential oils that have irritating properties. Thus, the higher the level of cinnamon powder in the feed, the higher the levels of the anti-nutritional tannins and active substances, including cinnamaldehyde and essential oils contained within it, which resulted in a slowdown of body weight gain in these broiler chickens. Cinnamon contains more than 10% tannins (Emilda, 2018), cinnamaldehyde ranges from 60-80%, and essential oils range from 1-4% (Praputri and Sundari, 2008). Tannins not only give astringent taste in the mouths of livestock but can also bind proteins and form insoluble complex compounds that may reduce protein digestibility. If they bind with enzymes produced by the digestive system, then the enzyme activity will also decrease. Protein metabolism cannot fully occur, as tannins can also bind iron and vitamin B (Suarni and Singgih, 2002). Furthermore, a sufficiently high level of tannins can cause lesions in the digestive tract or damage the permeability of membranes in the digestive tract (Jayanegara et al., 2019) and if the digestive tract is injured due to tannins, another worst-case scenario is that cinnamaldehyde and essential oils found in cinnamon can exacerbate the condition of the digestive tract because both can be irritating (Rahmawati and Anggraeni, 2021). Protein metabolism and absorption of other nutrients cannot occur optimally in the body, resulting in weight gain and stunted or hindered growth.

Yuhendra et al. (2021) stated that there was a significant decrease in the weight gain of broiler chickens given feed containing cinnamon bark powder up to 6%; it was suspected that the decrease occurred due to the active compound cinnamaldehyde and essential oils in cinnamon bark powder reducing palatability, resulting in a decreased intake of feed and nutrients, which in turn reduced the energy needed for growth and body development, ultimately causing a slowing of growth rate or a decrease in weight gain. Furthermore, Irawan et al. (2022) stated that the weight gain of meat ducks significantly decreased along with the increase in cinnamon powder levels up to 5% in the feed. Sipahutar et al. (2022) stated that there was a decrease in weight gain of broiler chickens given drinking water containing cinnamon powder at 10-70 g per liter; the decrease was suspected to be caused by the crude fiber content was quite high in cinnamon bark powder, which caused the digestive tract to fill up quickly, preventing livestock from consuming more feed. As a result, nutrient intake decreased, and weight gain declined. The crude fiber content of cinnamon bark powder (*Cinnamomum burmannii*) was 39.47% (Sompie et al., 2023).

The standard weight gain of CP 707 broiler chickens aged 2–6 weeks is 45-84 g/day/bird (PT Charoen Pokphand, 2014). The average weight gain of CP 707 broiler chickens in this study was still lower by 8.91-14.60 g/day/bird compared to the standard weight gain of broiler chickens. This indicated that the weight gain of CP 707 broiler chickens in this study did not meet the standard. This could be occurred because the weight gain did not correlate with the increase in feed consumption. Feed in the chicken's body was needed not only for basic life functions but also for growth, so the higher the feed intake, the more the weight of the chickens would increase (Wijayanti et. al., 2011).

Feed Conversion

The average feed conversion ratio of CP 707 broiler chickens aged 2–6 weeks in this study were ranged from 1.68 to 1.84 (Table 2). The ANOVA test results showed that the treatments had no significant effect (P>0.05) on feed conversion among the broiler chicken treatments. However, looking at the analysis figures indicated that the feed conversion among treatments in this study was nearly significant or different, thus post-hoc testing should be conducted. Based on the multiple range test (Duncan test), it was found that the feed conversion of the broiler chicken group given feed without

Multidisciplinary Indonesian Center Journal (MICJO)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/micjo
Email: admin@jurnalcenter.com

cinnamon powder (T0) was significantly different (P<0.05) from the feed conversion of the broiler group given feed containing 1% (T2) and 1.5% (T3) cinnamon bark powder. Furthermore, there was no difference in feed conversion among the groups of broiler chickens given feeds containing 0.5% (T1), 1% (T2), 1.5% (T3), and 2% (T4) cinnamon bark powder. Based on data analysis, it can be seen that the higher the level cinnamon bark powder in the feed tended to increase feed conversion. The lowest feed conversion was found in the group of broiler chickens given feed without cinnamon powder (T0).

The feed conversion of broiler chickens among treatments in this study was significantly different, increasing with the increasing level of cinnamon powder in the rations, because the feed consumption value does not correlate with the body weight gain of the livestock. The feed conversion value was highly dependent on the average feed consumed by the livestock divided by the average body weight gain of the livestock. If the feed consumption value is proportional to the body weight gain value, then the conversion rate becomes relatively the same. Furthermore, a decreasing feed conversion rate indicates that the livestock are becoming more efficient at converting feed or rations into meat (Bakrie et. al., 2011; Sipahutar et. al., 2022).

The feed conversion standard for CP 707 broiler chickens aged 2–6 weeks is 1.06-1.76 (PT Charoen Pokphand, 2014). The average feed conversion for CP 707 broiler chickens in this study is still higher by 0.17–0.33 compared to the feed conversion standard issued by PT Charoen Pokphand. A feed conversion value is considered good if it is < 2; the smaller the conversion number, the more efficient feed is converted into meat, which means that less feed is required to produce 1 kg of meat (Kartasudjana and Suprijatna, 2006). Although the feed conversion in this study is still higher than the standard set by PT Charoen Pokphand, the feed conversion value in this study is still < 2, indicating that it is still categorized as good or still economical.

Final Body Weight

The average final body weight of CP 707 broiler chickens aged 2–6 weeks in this study ranged from 2307.95 to 2462.10 g per bird (Table 2). The ANOVA test results show that the treatments had a very significant effect (P<0.01) on the final body weight of the broiler chickens across treatments. Based on the multiple distance test (Duncan test), it was found that the final body weight of the group of broiler chickens fed with feed without cinnamon powder (P0) differed significantly (P<0.05) from the final body weight of the broiler group fed with feed containing 0.5% (T1), 1% (T2), and 1.5% (T3) cinnamon powder, with the final body weight of the group of broiler chickens fed without cinnamon powder (T0) differing very significantly (P<0.01) from the final body weight of the broiler group fed with feed containing 2% (T4) cinnamon powder. Furthermore, the final body weight of the group of broiler chickens fed with feed containing 0.5% (T1) differed significantly (P<0.05) from the group of broiler chickens that given feed contains 2% (T4) cinnamon powder. Based on the data analysis, it can be seen that the higher the level of cinnamon powder in the feed, the final body weight of CP 707 broiler chickens decreases. The highest final body weight was found in the group of broiler chickens that were given feed without cinnamon powder (T0).

The final body weight of broiler chickens among treatments in this study showed a significant decrease as the level of cinnamon powder increased, which is suspected to be due to the tannins and active substances such as cinnamaldehyde and essential oils in cinnamon powder affecting the digestive system's function, particularly the metabolism process in broiler chickens, ultimately influencing the growth and development of the livestock and consequently affecting the final body weight of broiler chickens. The final body weight of livestock is closely correlated with the body weight gain (refer back

Multidisciplinary Indonesian Center Journal (MICJO)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/micjo
Email: admin@jurnalcenter.com

to the explanation on body weight gain). If the body weight gain decreases, the final weight will also decrease. To achieve optimal and good final body weight, the quantity and quality of the feed consumed must be adequate to produce weight gain corresponding to the physiological stage of the livestock. Sipahutar, et. al., (2022) reported a decrease in weight gain in broiler chicken that given drinking water containing 10-70 g of cinnamon bark powder per liter; this was suspected to occur due to the fiber content of the cinnamon bark which had filling properties causing the digestive tract to fill up quickly, thus reducing feed and nutrient intake, and the energy needed for growth and body development also decreased, ultimately leading to a slower growth rate or a decrease in weight gain.

The final body weight standard (harvest weight) of CP 707 broiler chickens at 6 weeks (42 days) was 2,634 g/head (PT Charoen Pokphand, 2014). If we looked at the average final body weight of CP 707 broiler chickens in this study, compared to the final body weight standard for broiler chickens (at 6 weeks) issued by PT. Charoen Pokphand, the average final body weight of broiler chickens in this study was still significantly lower by 171.90–326.15 g/head than the standard. This indicated that the final body weight value of CP 707 broiler chickens in this study had not yet reached the desired standard.

The success of a livestock business, especially broiler chickens, can be measured by the average final body weight of the livestock. If a high body weight was achieved by the animals in a relatively short time, then the harvesting age was quicker. If the harvesting age was quicker, the use of feed and other production costs decreased. Furthermore, the final body weight determined the selling price of the livestock, thus affecting the income of the farmers (Pernanda et. al., 2021). The decrease in the final body weight of broiler chickens when fed with feed containing cinnamon bark powder can be considered uneconomical.

4. CONCLUSION

Based on the results of the analysis and discussion, it can be concluded that giving cinnamon bark powder as a natural feed additive up to 2% in the feed did not improve the performance of CP 707 broiler chickens, because of body weight gained and final body weight of the chickens decreased, while, feed conversion increased, which means that, economically it was not getting better.

5. REFERENCES

Arifin, M., dan V. J. Pramono. 2014. Pengaruh pemberian sinbiotik sebagai alternatif pengganti *antibiotic growth promoter* terhadap pertumbuhan dan ukuran vili usus ayam broiler. Jurnal Sain Veteriner, 32 (2): 205-217.

Badan Pusat Statistik Indonesia.2023. *Statistik Indonesia tahun 2023*. Jakarta. Pusat Badan Pusat Statistik, Hal: 332.

Badan Standarisasi Nasional Indonesia. 2000. Batas maksimum kontaminasi mikroba dan batas maksimum residu dalam bahan makanan asal hewan. SNI No. 01-6366-2000.

Bakrie, B., E. Manshur dan Sukadana, I. M. (2011). Pemberian berbagai level tepung cangkang udang ke dalam ransum anak puyuh dalam masa pertumbuhan (umur 1-6 minggu). J. Kesehatan Hewan Kementrian Pertanian.

Bando, N., B. Akhsan, dan A. Sari. 2020. Analisis pendapatan budidaya ayam broiler dengan menggunakan herbal kunyit. Jurnal Agrokompleks, 20 (1): 39-44.

Bin Shan, Yi-Zhong Cai, John D.B and Harold Corke, 2007, Antibacterial Properties and Major Bioactive Components of Cinnamon Stick (Cinnamomum burmannii) : Activity against Foodborne Pathogenic Bacteria, J. Agric Food Chem., Vol 55, 5484-5490.

Multidisciplinary Indonesian Center Journal (MICJO)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/micjo
Email: admin@jurnalcenter.com

Bura, M. A. Y. D., M. H. Effendi, dan Y. Puspitasari. 2024. Profil of antibiotic residue and antibiotic resistance in broiler chicken meat in Indonesia: pubic health importance. Jurnal Kajian Veteriner, 12 (1): 61-76.

Chowlu, H., V. K. Vidyarthi dan R. Zuyie. 2018. Use of cinnamon in diet of broiler chicken - a review. Livestock Research International, 6 (2): 42-47.

Eltazi, S. M. A. 2014. Effect using of cinnamon powder as natural feed additive on performance and carcass quality of broiler chicks. Int J Innovative Agricultural and Biology Research, 2 (3): 1-8.

Emilda. 2018. Efek senyawa bioaktif kayu manis cinnaomum burmannii nees ex.bl terhadap diabetes melitus. Jurnal Fitofarmaka Indonesia, 5 (1): 246-252.

Herlina, B., R. Novita dan T. Karyono. 2015. Pengaruh jenis dan waktu pemberian ransum terhadap performans pertumbuhan produksi ayam broiler. Jurnal Sain Peternakan Indonesia, 10 (2) 107-113.

Irawan, N., Munir, Rasbawati, I. D. Novieta, Fitriani, dan N. Asikin. 2022. Konsumsi pakan dan pertambahan bobot badan ternak itik pedaging (anas domesticus) dengan penambahan tepung kayu manis (cinnamomum burmannii) dalam ransum. Jurnal Gallus Gallus, 1 (1): 22-31.

Jayanegara A., M. Ridia, E.B. Laconi dan Nahrowi. 2019. Komponen Antinutrisi Pada Pakan. IPB Press. Bogor.

Kartasudjana, R dan E. Suprijatna. 2006. Manajemen Ternak Unggas. Penebar Swadaya. Jakarta

Lansdowne, L. E. 2020. Developing Synthetic Antibiotics Against Drug-Resistant Pathogens. Technology Networks Drug Discovery. https://www.technologynetworks.com/drug-discovery/blog/developing-synthetic-antibiotics-against-drug-resistant-pathogens-337505, (diakses 18 November 2024).

Mason, J. R., dan L. Clark. 2000. The chemical senses in birds. pgs 39-56. In: G. Whittow, editor. Sturkie's Avian Physiology, 5th Edition. Academic Press: San Diego, CA. 704 pp.

Masrianto ., I. I. Arief, dan E. Taufik. 2019. Analisis residu antibiotik serta kualitas daging dan hati ayam broiler di Kabupaten Pidie Jaya Provinsi Aceh. Jurnal Ilmu Produksi dan Teknologi Hasil Peternakan, 7 (3): 102-110.

Nono, F., S. L. Yulianti, dan A. T. N. Krisnaningsih. 2017. Pengaruh penggunaan ramuan herbal sebagai *feed additive* terhadap *in come over feed* cost ayam broiler. Jurnal Sains Peternakan, 5 (2): 100-105.

Nurhasmiati dan S. Purwanri. 2021. The Functions of *Cinnamomum burmannii* as an Antioxidant Feed Additive for Broiler Chickens: A Review. The 3rd International Conferenceof Animal Scienceb and Technology IOP Conf. Series: Earth and Environmental Science 788 (2021) 012082 IOP Publishing doi: 10.1088/1755-1315/788/1/012082.

Nuryati, T. 2019. Analisis performans ayam broiler pada kandang tertutup dan kandang terbuka performance analysis of broiler in closed house and opened house. Jurnal Peternakan Nusantara, 5 (2): 77-86.

Pernanda, R., P. Anwar, dan Jiyanto. 2021. Pengaruh pemberian ekstra jahe emprit (*Zingiber officinale*) dalam air minum terhadap bobot hidup, persentase karkas ,lemak abdominal broiler. Jurnal Green Swarnadwipa, 10 (2): 282-299.

Praputri, E dan E. Sundari. 2008. Pengambilan minyak atsiri berdasarkan ketinggian pengulitan dan dari bagian tanaman kayu manis yang terbuang. Jurnal Teknos-2k, 8 (1): 55-58.

PT. Charoen Pokphand Jaya Farm. 2014. Manual Manajemen Broiler CP 707.

Multidisciplinary Indonesian Center Journal (MICJO)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/micjo
Email: admin@jurnalcenter.com

Rahmawati, Y dan S. P. Anggreini. 2021. "Hati-Hati, Ini 5 Dampak Buruk Keseringan Pakai Minyak Atsiri". Suara.Com, https://www.suara.com/health/2021/08/27/080000/hati-hati-ini-5-dampak-buruk-keseringan-pakai-minyak-atsiri?page=all, (diakses 14 November 2024).

Santoso, U., and Sartini. (2001). Reduction of fat accumulation in broiler chickens by Sauropus androgynus (Katuk) leaf meal supplementation. Asian- Australian Journal of Animal Science 14: 346-350.

Sipahutar, L. W., F. Ridhana, D. R. Y. Harahap, M. Ardina, dan J. Sukrin. 2022. Performa broiler pada penggunaan infused water kulit kayu manis (*Cinnamomum burmannii*) dalam air minum. Jurnal Ilmu Ternak dan Veteriner, 4 (2): 17-20.

Sompie, F. N., J. R. Leke, E. Wantasen, J. Laihad, H. Kiroh, N, Kumajas, dan R. Siahaan. 2024. Performance of laying chickens with feed additive cinnamon Flour (*Cinnamomum burmannii* (Nees & T.Nees) Blume). Jurnal Bios Logos, 14 (1): 137-142.

Sompie, F. N., J. R. Leke, J. Laihad, F. Nangoy, dan J. Mandey. 2023. Tepung kayu manis (*Cinnamomum burmanii*) sebagai feed additive Dalam pakan ayam petelur. Prosiding Seminar Nasional Teknologi dan Agribisnis Peternakan X.

Suarni dan Singgih S. 2002. Karakteristik Sifat Fisik dan Komposisi Kimia Beberapa Varietas/Galur Biji Sorgum. J. Stigma. 10 (2): 127-130.

USDA-NASS (2024). "United States Department of Agriculture - National Agricultural Statistics Service", https://plants.usda.gov/plant-profile/CIBU2, (diakses 10 Januari 2025)

Wijayanti, R. P., W. Busono, dan R. Indrati. 2011. Effect of house temperature on performance of broiler in starter period. Faculty Animal Husbandry University of Brawijaya.

Yuhendra, Muslim, dan Darmiwati. 2021. Efek pemberian tepung kulit kayu manis (*cinnamomum burmanii*) feed additive ransum terhadap performans ayam broiler. Journal of Animal Center, 3 (1): 24-32.