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Full Length Research

Effect of feeding durian fruit peel in kacang goats on production performance and physiological parameters

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ABSTRACT: The durian fruit (*Durio zibethinus* Murr.) peels can be used as animal feed. This study aimed to determine the effect of feeding durian fruit peel on body weight, feed conversion ratio and physiological parameters and reproduction performance of female kacang goats. The research method uses the 3 x 3 factorial randomized block design (RBD). The main components were dose D1 = ASP dose of 100 g/liter of water; D2 = ASP dose of 200 g/liter of water, and D3 = ASP dose of 300 g/liter of water, and the next variable is the soaking time, namely: P1 = Soaking durian rind for 24 hours; P2 = Soaking durian rind for 48 hours; and P3 = Soaking durian rind for 72 hours and each repeated four times as a group. The analysis of variance showed that giving durian fruit peels soaked in rice husk ash filtrate solution at different doses did not give a significant difference ($p>0.05$) in body weight gain, use of dry matter and the effectiveness of using proportions, breath waves and heartbeat waves of female kacang goats, but had a significant effect ($p<0.05$) on the edible carcass weight and very significant ($p<0.01$) on the non-edible carcass level of female kacang goat giving durian fruit peels by immersing rice husk ash filtrate solution with different soaking time variations had a significant effect ($p<0.05$) on body weight gain and productivity using the proportion of female kacang goats, did not have a large effect ($p>0.05$) on physiological parameters. Durian skin waste has the potential to be used as animal feed, has nutritional content, and can increase the body weight of kacang goats, but requires further processing such as soaking in a solution of rice husk ash filtrate.

Keywords: Kacang goats, durian fruit peel, feed conversion ratio, physiological parameter.

INTRODUCTION

The exploration of animal feed originating from agricultural land is very important to overcome the limited availability of feed sources (Naser *et al*., 2023). Furthermore, according to Abdullah et al. (2023), livestock productivity is inseparable from feed factors sourced from agricultural land. The focus is on feed that has low crude fibre content (Shah and Wanapat, 2021; Zhang *et al*., 2021). Global focus contained drying matter as well as food substances such as proteins, starches, fats, minerals as well as nutrients. Then an increase in animal efficiency can be achieved for the contribution of the best essence (Kasabova *et al*., 2020; Iskandar, 2012). However, the factor often focused on accessibility driven at a hefty price. Durian skin was the result of durian fruit waste that was not used by local people because they did not understand the various properties of durian skin. However, this waste could be used as the preferred feed for pets, because durian skin contains nutrients that could still be used for pets. Durian skin contains high cellulose (50-60%), lignin (5%) and starch (5%) (Rahmawati *et al.*, 2023). The durian fruit's 20-25% is the tissue, 5-15% is the seed, and then peels make up to 60-70% of fruit weight (Mazumdar *et al.*, 2019). Before it could be used properly for animal feed, it was first necessary to know the nutritional content of durian fruit peels.

Increasing animal protein production in developing countries depends on opportunities to increase supplies of animal feed ingredients, both in the form of forage and

concentrate. The lack of land specifically for feed has encouraged businesses to utilize available (Friday and Jubara, 2024), especially, agricultural waste as an alternative feed source that can potentially be developed, one of which is the use of durian fruit peel waste. Durian peel is one of the agricultural wastes that can be used as an alternative feed ingredient, but until now there is still very limited information regarding its use as an alternative feed for ruminants.

This research was carried out on durian skin waste as a feed source soaked in a husk ash filtrate solution which was stored at room temperature for 24 hours, 48 hours and 72 hours. This was included to determine the effective time in breaking down the crude fiber content which has a high lignin content, cellulose and starch in durian skin which is useful in the production performance and physiological parameters of kacang goats (Thakur *et al*., 2023; Panzella and Napolitano, 2017).

Rice husk ash was a waste of rice milling, it is commonly known that it had a soft structure and is very dusty, greyish white with a cloudy solution and a yellowish filtrate (Heydari *et al.*, 2023; Liou and Yang, 2011). In a dry state, rice husk ash was very light, so even low concentrations require large amounts of ash. Rice husk ash solution proves the mineral potency of potassium for rice plants which can be used as an alkaline source (Jittin *et al.*, 2020). This study aimed to determine the performance of female kacang goats fed durian fruit peel soaked in a solution of rice husk ash filtrate.

MATERIALS AND METHODS

Study site and experimental design

This research was carried out in the cage owned by CV Prima BREED, Tondo village, Mantikulore district, Palu city under Central Sulawesi Province from January to December 2022. It is located at an altitude ranging from 120 m above sea level, latitude 0’49’12.64” and 0’50’32.8”N, longitude of119’52’46.58” and 119’56’1.31”E, temperature 27.7°C, rainfall 1.200 mm and humidity 76.7%.

The 36 female kacang goats were randomly selected for this study. The age of the goat was one year old with body weight ranging from 7.32 to 17.48 kg. The use of kacang goats was carried out with permission from the Central Sulawesi Provincial Animal Husbandry Service in collaboration with Tadulako University which has lasted for the last 5 years.

This study used a 3 x 3 factorial Randomized Block Design (RBD). The main variables were dose D1 = ASP dose of 100 g/liter of water; D2 = ASP dose of 200 g/liter of water, and D3 = ASP dose of 300 g/liter of water, and the next component was the soaking time, namely: P1 = Soaking durian rind for 24 hours; P2 = Soaking durian rind for 48 hours; P3 = Soaking durian skin for 72 hours and each repeated four times simultaneously (Hernaman *et al*., 2021; Lubis *et al.*, 2020).

The stage enclosure used thatched roofs, plank floors, and plank walls measuring 5 x 12 m. The cages were isolated into 36 plots with a size of 1.0 x 1.0 meters, each occupied by a female explorer goat. Each plot was equipped with a feed box made of sheets as well as a bowl for drinking. Three days before the cage was used, it was first cleaned and sprayed with Rodalon with a dilution degree of 15cc per 10 litres so that the cage was free from microorganisms.

Feed was given during the review, divided into concentrate and *Panicum sarmentosum* (Dias *et al.*, 2022). The concentrate used is divided into a combination of ingredients such as 13% ground soybeans, 55% wheat rice, and 32% ground corn soaked in durian skin as a replacement treatment for 20% basal concentrate. Concentrate is given at 07.30 in the morning as much as 1.5% dry matter of body weight, while *Panicum sarmentosum* Roxb was given after administration of concentrate and medication (not mandatory). Feed nutrients are given in Table 1.

The system for making hydrolyzed durian skin used for this research was the method of Kunarto and Sani (2018), with stages: (1) rice husk was dried, then burned to take the ashes, and then cooled; (2) rice husk ash was measured by treatment, P1 (100 g rice husk ash (ASP)); P2 (200 g rice husk ash (ASP)); P3 (300 g of rice husk ash (ASP)) was put into a bucket and mixed with 1 litre of water to obtain a concentrated filtrate which did not completely settle in % weight/volume (% w/v). Then, the solution is stirred until all the ash is decomposed and mixed evenly with water, then left for 24 hours until the water becomes clear; (3) after being clear, the water from the rice husk ash solution, called rice husk ash filtrate (FASP), is filtered using a black cloth; (4) durian fruit peels obtained from plantations or durian fruit traders are cleaned, then chopped and dried in the sun; (5) the substrate (dried durian skin that has been split) is put in a plastic barrel while being squeezed to reduce the air voids as well as the volume in the barrel. Then, the husk ash filtrate solution is pour into a plastic barrel that already contains durian rind until it soaks the durian rind; then, the barrel is tightly closed using a lid and clamped; (6) stored at room temperature for proper treatment, P1 (24 hours), P2 (48 hours), and P3 (72 hours); (7) after the spray system is closed, the plastic bin is opened, then the soaked durian rind (KBDR) is dried in the sun for about 5-6 days and then ground into flour. The processed KBDR is suitable for use as a concentrate binder.

Data collection

The goats' body weight was weighed at the beginning of the study and at the end of the study. The goat's body

Table 1. Nutritional content of feed ingredients used during the study (Pinotti *et al.*, 2019; Pinotti *et al*., 2021).

Feed Ingredients	Nutrient content				
	Dry material	Crude protein	Coarse fiber	Crude Fat	TDN
Ground Soybeans	91.97	31.35	9.73	11.65	61.00
Milled Corn	86.82	9.54	9.92	8.30	80.87
Rice Bran	89.92	10.67	18.39	4.62	61.21
D1L1	92.13	10.37	13.64	0.73	72.96
D2L1	92.48	11.46	13.02	1.21	73.53
D3L1	91.91	11.42	18.87	1.45	67.77
D1L2	90.04	11.70	12.13	0.61	77.37
D2L2	91.92	11.44	12.98	0.67	74.45
D3L2	91.58	11.62	20.15	0.94	65.07
D1L3	89.97	11.62	14.21	0.89	66.93
D2L3	92.12	11.78	12.13	0.85	74.76
D3L3	91.62	12.46	13.12	1.12	72.40
*Panicum sharmentosum**	26.29	11.51	30.20	1.90	59.54

*Results of the analysis of the Animal Feed Nutrition Laboratory, Faculty of Animal Husbandry and Fisheries, Tadulako University, 2022.

temperature is measured every 3 days at a low temperature, namely in the morning between 03.00 and 04.00, at the highest temperature, namely in the afternoon between 12.00 and 13.00. The time for measuring the pulse frequency (pulsus) is at the same time as measuring body temperature as well as measuring the respiratory frequency which is carried out every 3 days in the morning and in the afternoon for 1 minute.

Data analysis

The data was initially entered in Microsoft Excel version 16 and then exported to version is IBM SPSS 29 statistics. The normality of the data was checked using kolmogorov-smirnov test. Then, the F test was carried out using IBM SPSS 29.

RESULTS AND DISCUSSION

Production performance

The results of the production performance of female kacang goats exposed to durian skin in a solution of rice husk ash filtrate are presented in Table 2. Examination of changes (F test) showed no significant difference ($p>0.05$) in the organization of durian peels, which were processed by wetting a solution of rice husk ash filtrate with various portions and times of watering in weight gain, dry matter utilization and productivity. The proportion used of female Kacang goats, as well as the organization of durian strips which were absorbed in response to rice husk ash filtrate with various doses did not make a big difference ($p>0.05$) on body weight gain, dry matter utilization and performance objectives of the proportion of female Kacang goats, but the introduction Durian pieces treated by absorbing rice husk debris filtrate solution with various sprinkling times made a big difference ($p<0.05$) on weight gain and the effectiveness of using the proportion of female Kacang goats.

The results of the Least Significant Difference Test (LSD) explained that the body weight gain of goats fed processed durian rind by immersion in a solution of rice husk ash filtrate with 24-hours immersion time was basically ($p<0.05$) lower than that of goats given the rind processed durian by immersion in rice husk ash filtrate solution for 48 hours and 72 hours of soaking time. so did goats treated with processed durian rind through immersion in rice husk ash filtrate solution for 48 hours significantly ($p<0.05$) lower compared to goats fed processed durian rind by immersion in a solution of rice husk ash filtrate for 72 hours of immersion. This shows that durian skin feed which is processed through the process of soaking in a solution of rice husk ash filtrate for 24 hours, 48 hours and 72 hours, contains nutrients and has the potential to be used as a source of fiber which can be used by goats and good energy for weight gain.

The higher body weight gain of goats fed with the longer processed durian fruit skin through immersion in rice husk ash filtrate solution was due to the growing contribution of feed nutrients (Nandiyanto *et al*., 2023). Durian fruit skin soaked in a solution of rice husk ash filtrate longer takes the breakdown of complex compounds (especially lignin) into simple compounds that are more abundant and easier to digest so that it has an impact on body weight gain.

The main food substance for kacang goats for the development of new cells, increasing cell size as a cause

Table 2. Normal body weight gain, use of proportions and productivity of portion used in Goats with durian skin treatment by wetting a solution of rice husk ash filtrate.

Parameter	Dose (g/litre)	Immersion Time (hours)			Average
		24	48	72	
Body Weight Gain (g/head/day)	100	32.32	33.17	35.36	33.62
	200	31.79	34.11	36.90	34.27
	300	33.89	35.54	35.77	35.07
	Average	32.67[a]	34.27[b]	36.01[c]	
Consumption of dry matter ration (g/head/day)	100	433.32	423.26	406.52	421.03
	200	432.55	433.91	451.42	439.30
	300	433.35	471.72	435.14	446.74
	Average	433.07	442.97	431.02	
Efficiency of Use of Ration Dry Materials	100	0.077	0.081	0.088	0.082
	200	0.074	0.079	0.084	0.079
	300	0.081	0.076	0.082	0.080
	Average	0.077[a]	0.079a[b]	0.085[b]	

Description: Different letters towards the line indicate significant differences ($p<0.05$).

of weight gain, is protein; while all proteins cannot be processed directly by goats, they must be separated first by microorganisms through a maturation cycle. A low consumption portion would result in low weight gain.

Utilization of dry matter feed that affects durian fruit skin that was processed by immersion model in a solution of rice husk ash filtrate with various doses and different soaking times was due to the idea that the mass of raw material consumed by kacang goats is very likely to occur. It could be seen that the use of normal feed dry matter seen from body weight was 2.38%; moreover, the ingredients in the digestive system were in the rumen reticulo for a long time, between 70-90 hours, while the consumption power of feed dry matter is consumed by livestock at basically occurs in the rumen (McCarthy *et al*., 2020). Utilization of dry matter according to body weight in female goats peanuts treated with durian rind that was processed by soaking in a solution of rice husk ash filtrate with varying portions and soaking time did not have a major effect. This was supported by the results of previous studies; the use of high-quality specific feed was able to obtain 3.5% of body weight, whereas the use of low-quality feed was limited to 2% dry matter considering body weight (Kong *et al.*, 2015). How much dry matter was consumed by animals in a day was very important because the expertise of animals to eat dry matter was a limiting factor in whether animals were able to overcome the nutritional problems they needed.

The results of the Least Significant Difference Test (LSD) explained that the effectiveness involved the proportion of goats that were given durian rind, which was processed by soaking in a solution of rice husk ash filtrate for 24 hours, not fundamentally different ($p>0.05$) from 48 hours of immersion. Basically, ($p<0.05$) was lower than 72 hours of immersion time, and 48 hours of immersion time was significantly ($p<0.05$) lower than 72 hours of immersion time. Productivity utilization of various proportions was caused by differences in the feed consumed. Some scientists proposed that the ability of the feed to remain in the air with various variables, with the classification of high and edible feed usage to make the goat's peanut increase rumination, more salivary flow, more microbial yields, and dry swelling. Material absorption, N balance is more prominent, and body weight increases. Higher so that the ability to utilize feed is better (Akert *et al*., 2020).

Physiological parameters

The results of the physiological status of female kacang goats exposed to durian skin by immersing in the rice husk ash filtrate solution are shown in Table 3. Different examinations (F test) showed no cooperation ($p>0.05$) in the organization of durian peels that were handled by immersion in a solution of rice husk ash filtrate with various portions and immersion time on physiological status (level of internal heat, breath waves, and heart rate waves) of female goats peanut, as well as administration of durian slices resulting from absorption of rice husk ash filtrate in various portions did not have a large ratio ($p>0.05$). To the physiological status (level of internal heat, respiratory waves, and heartbeat waves) of female Kacang goats, and administration of processed durian fruit skin by immersion

Table 3. The average levels of body temperature, breath waves, and heartbeat waves of Goat Kacang obtained from durian fruit peel by soaking in a solution of rice husk ash filtrate.

Parameter	Dose (g/litre)	Immersion Time (hours)			Average
		24	48	72	
Rectal temperature (°C)	100	38.29	38.67	38.81	38.59
	200	38.66	38.63	38.48	38.59
	300	38.61	38.67	38.74	38.68
	Average	38.52	38.66	38.68	
Respiration frequency (times/minute)	100	36.97	36.91	36.99	36.95
	200	34.93	36.57	32.32	34.61
	300	33.58	31.65	33.22	32.81
	Average	35.16	35.04	34.17	
Pulse frequency (times/minute)	100	72.72	74.18	73.39	73.43
	200	73.90	72.23	70.98	72.37
	300	71.86	68.70	71.69	70.75
	Average	72.83	71.70	72.02	

in a solution of rice husk ash filtrate at different times had no significant effect ($p>0.05$) on physiological status (level of internal heat, breath waves, and heartbeat waves) on female Kacang goats.

The final results of this study explained that the heat level in goats was higher than the results of Harmoko and Padang (2019), especially 38.23-38.48ºC, but the heat level in goats was still within the typical range according to Liu *et al.* (2022) that the goat's internal heat level usually ranges from 38.5-40.5ºC and the goat's rectal temperature under normal circumstances is 38.5-40ºC (14,15). The body temperature of goats treated with processed durian peels by immersion in a solution of rice husk ash filtrate with different doses and soaking time showed different results, but there was a tendency to increase with increasing doses of husk ash and soaking time (Houdebine *et al*., 2019). This was related to the activity of metabolism, where high-intensity production results in faster metabolic activity compared to goats with low-intensity production activities. Abbas *et al*. (2020) state that the feed consumed by animals can affect the increase in the rate of formation of intensity in the body, also called the calorigenic impact of feed and functions to balance homeostatic conditions.

The breath waves did not differ between treatments were caused using generally the same feed, so the results did not differ in the breath waves of kacang goats. This was revealed by Dos Santos *et al.* (2021) who state that if the classification of feed use affects the speed of respiratory frequency in ruminants can cause an increase in body metabolic cycles to create more body heat. The insignificant difference between the treatments showed that the administration of durian peels treated by soaking a solution of rice husk ash filtrate with various portions and different soaking times did not affect the respiratory frequency of the experimental animals. The interaction of feed maturation can affect the breath rate of pets that consume it. In addition, the breath wave depends on body weight, age, activity, fatigue and whether the rumen is full (Lacetera, 2019).

The heart rate waves did not differ between treatments because the large amount of feed used was not far between treatments so it had an impact on the heart rate waves of livestock. This was disclosed by Kurniawati *et al.* (2018) and Hamdan *et al.* (2018) that the heart rate wave is closely related to the pet's metabolic rate, where the factors that affect the recurrence of animal pulses include sex, muscle action, ambient temperature, and classification of feed use.

The results of the study explained that the heartbeat waves ranged from 68.70-73.90 beats/minute. This indicated that each creature that was treated had a heat transfer process, which was expected to maintain normal internal heat levels. Increasing the pulse frequency means directing blood circulation pressure and helping the circulation of heat from the internal organs to the body's surface (Khanduri and Sharma, 2023). In this study, you could say that the heartbeat waves are very similar; this is influenced by various factors, including animal species, sex, age, season, level of internal heat, and ambient temperature so the results of calculating beat recurrence are also unique. Normal heart rate waves in goats range from 70-80 beats/minute (Hamdan *et al.*, 2018).

Carcass and non-carcass edible

The results of slaughter weight, carcass weight and

Table 4. The average levels of body temperature, breath waves, and heartbeat waves of Goat Kacang obtained from durian fruit peel by soaking in a solution of rice husk ash filtrate.

Parameter	Dose (g/litre)	Immersion Time (hours)			Average
		24	48	72	
Slaughter Weight (kg/head)	100	12.46	13.91	12.53	12.96
	200	12.92	13.50	14.34	13.59
	300	13.13	13.80	13.15	13.36
	Average	12.83a	13.74b	13.34b	
Carcass Weight (kg/head)	100	5.23	6.13	5.62	5.66a
	200	5.78	6.09	6.35	6.07b
	300	5.92	6.34	6.16	6.14b
	Average	5.64a	6.19b	6.04b	
Carcass Percentage (%)	100	41.99	44.00	44.91	43.63a
	200	44.59	45.07	44.74	44.80b
	300	44.98	46.05	46.86	45.97c
	Average	43.85a	45.04b	45.50b	
Non-Edible Carcass Weight (kg/head)	100	1.67	1.77bc	1.58d	1.67a
	200	1.64d	1.83ab	1.88a	1.78b
	300	1.64d	1.80abc	1.71bc	1.71a
	Average	1.65a	1.80b	1.72a	
Percentage of Non-Edible Carcasses (%)	100	13.50a	12.74b	12.62b	12.95
	200	12.67b	13.44a	13.13a	13.08
	300	12.41b	13.00ab	12.94ab	12.78
	Average	12.86	13.06	12.90	

Description: Different letters towards the line indicate significant differences ($p<0.05$).

carcass and non-carcass content of edible female goat peanuts that received durian skin by immersion in a solution of rice husk ash filtrate were shown in Table 4. Examination of changes (F test) showed no significant different ($p>0.05$) after the administration of processed durian rind by immersion in a solution of rice husk ash filtrate at various doses and different soaking times on slaughter weight, carcass weight and carcass percentage of female goats peanut, but it had a critical ($p<0.05$) impact on edible carcass weight and a very large ($p<0.01$) impact on the non-edible carcass level of female goats peanut. Administration of durian rind soaked in rice husk ash filtrate solution with different doses did not have a significant effect ($p>0.05$) on cut weight and percentage of non-carcass edible but gave a very large difference ($p<0.01$) on weight carcass percentage and non-carcass edible weight of female kacang goats. The administration of durian peels, which were treated by soaking in a solution of rice husk ash filtrate with various wetting times, did not make a significant difference ($p>0.05$) at the non-carcass edible level, making a large difference ($p<0.05$) to cut weight, making a very large difference ($p<0.01$) on carcass weight, carcass rate and non-carcass edible dose of female goats peanut. This is in line with the opinion of Sadeli *et al.* (2024) that durian skin waste has the potential to be used as animal feed, has nutritional content but requires further processing such as soaking in a solution of rice husk ash filtrate.

The results of the Least Significant Difference Test (LSDT) showed that the carcass weight of goats treated with durian skin by immersing rice husk ash filtrate solution in a portion of 100 g/l pure water ($p<0.05$) was lower than the dose of 200 g/l and 300 g/l water, whereas the weight of goat carcass treated with processed durian skin by immersion in a solution of rice husk ash filtrate at a dose of 200 g/l water was not significant different ($p>0.05$) when compared to a portion of 300 g/l water. Also treated with durian skin by soaking in a solution of rice husk ash filtrate with a soaking time of 24 hours was basically ($p<0.05$) lower than goats that were given durian skin through soaking in a solution of rice husk ash filtrate with soaking for 48 hours and 72 hours, whereas goats fed durian skin by immersing rice husk ash filtrate solution and soaking for 48 hours were not significantly different ($p>0.05$) from

goats given durian skins by soaked in rice husk ash filtrate solution for 72 hours. This shows that soaking the rice husk ash filtrate solution in a dose of 300 g/l of water is better and has the effect of increasing goat carcass weight. According to Bakshi *et al.* (2016), the full potential of these unconventional feed resources can be realized by concerted commercial efforts. These resources are yet untapped, and their efficient use will enlarge the feed resource base for kacang goats farming.

The results of the Least Significant Difference Test (LSD) proved that the carcass content of goats treated with durian skins by immersing in rice husk ash filtrate with a portion of 100 g/l real water ($p<0.05$) was lower than the portion of 200 g/l and very large ($p<0.01$) compared to a 300 g/l portion of water. Goat carcasses given durian skin by soaking in rice husk solution with a portion of 200 g/l water had a significant difference ($p>0.05$) compared to goat carcasses given durian skin with a portion of 300 g/l water. Soaking the rice husk ash filtrate solution for 24 hours was basically ($p<0.05$) lower than for goats given durian skin. Soaking the rice husk ash filtrate solution with a soaking time of 48 hours was very significant ($p<0.01$) compared to 72 hours.

Different carcass contents and levels were possible because the nature of the feed given by each treatment has different levels, while those that do not differ are still within the limits of the endurance needs of pets in developing. According to Fadliana *et al*. (2021), goat farming in Indonesia requires a protein proportion of 12-14% and DE = 2.8 Mcal.

The amount and nature of good food cannot change animals whose hereditary height is small, but the arrangement of food in small quantities cannot provide ideal carcass development according to the hereditary characteristics of each animal, for example, growth speed and body height (Islamov *et al*., 2021). Feed quality or nutritional value could affect how much food an animal eats. The nature of the feed consumed by pets can impact carcass levels. Kumar *et al*. (2021) explained that protein and energy are vital components in completing the development cycle, so a high proportion of protein and energy can provide high body weight gain.

The results of the Least Significant Difference Test (LW) showed that non-carcass edible of goats treated with durian skin by immersing rice husk ash filtrate solution at a dose of 200 g/l water with 72 hours of soaking time (D2L3), basically not unique ($p >0.05$) compared to 200 g/l portion for 48 hours soaking time (D2L2), 300 g/l portion of water for 48 hours soaking time (D2L3), and 100 g/l water for 48 hours soaking time (D1L2), but unique critical ($p<0.05$) at 300 g/l water serving for 72 hours (D3L3), and very large ($p<0.01$) at 100 g/l water for 24 hours (D1L1), 200 g/l water for 24 hours (D2L1), 100 g/l water for 72 hours (D1L3) and 300 g/l water for 24 hours (D3L1). The D2L2 treatment was not unique ($p>0.05$) compared to the D2L3, D1L2 and D3L3 treatments but was essentially unique ($p<0.05$) with the D1L1 treatment, which was very large ($p<0.01$) with the D2L1, D1L3, and D3L1. The D2L3 treatment was not significantly different ($p>0.05$) compared to D1L2, D3L3, and D1L1 treatments, but significantly different ($p<0.05$) with the D2L1 treatment and highly significant ($p<0.01$) with D1L3 and D3L1 treatments. The D1L2 treatment was not significantly different ($p>0.05$) compared to D3L3, D1L1, and D2L1 treatments, but significantly different ($p<0.05$) with D1L3 and D3L1 treatments. At the same time, other treatments showed no significant differences.

The results of the Least Significant Difference Test (LSD) showed that the percentage of non-carcass edible goats treated with D1L1 was not significantly different ($P>0.05$) compared to the treatments D2L2, D2L3, D3L2, and D3L3, but significantly different ($p<0.05$) with the D1L2, and D2L1 treatments, and very significant ($p<0.01$) with the D1L3, and D3L1 treatments. The D2L2 treatment was not significantly different ($p>0.05$) compared to the D2L3, D3L2, and D3L3 treatments, but significantly different ($p<0.05$) with the D1L2, D2L1, and D1L3 treatments, and very significant ($p<0.01$) with D3L1 treatment. The D2L3 treatment was not significantly different ($p>0.05$) compared to the D3L2, D3L3, D1L2, D2L1, D1L3 treatment, but significantly different ($p<0.05$) with the D3L1 treatment. While different treatments did not show extraordinary contrasts.

Based on the research results from this study, it could be seen that the cut weight of each treatment ranged from 12.46-13.91 kg, so the variation in non-carcass edible weight and the percentage of non-carcass edible also varied. This is agreed with the study of Marino *et al*. (2020) and Hetharia (2021) The results of slaughtering livestock can be separated into two parts, namely carcass and non-carcass. Carcass is a product of livestock slaughter which has high economic value, because from this carcass meat is obtained which is a high-quality food ingredient and is expensive.

Due to different factors, there was a relationship between husk ash filtration and soaking time, and it affects the body size of pets during development and repair. According to Marino *et al.* (2020), age, body weight, country, orientation, feed, and other natural elements can affect the extent of body parts. The level of non-carcass body parts was determined by looking at the weight of the inedible body parts divided by the weight of the meat multiplied by 100 per cent. These results indicated that the treatment affects the level of non-carcass edible body parts. This is due to the development of various non-body parts. According to Hilmawan *et al*. (2021), the growth and development of animal body tissue can be interpreted as an increase in body mass per unit time. The speed of growth and distribution of body components such as bones, muscles and fat take place gradually with bone tissue growing first, followed by muscle tissue and fat tissue.

Septian *et al*. (2015) stated that the increase in feed did not affect the weight of the internal organs except the liver and kidneys. The overall development of various non-carcass parts was equivalent to the general development rate of the pet body (Martins *et al.*, 2010). Rayhan *et al.* (2021) explained that the weight of the rumen, reticulum and omasum increases rapidly towards the beginning of post-pregnancy life, but the digestive system level decreases during development. It was also stated that the small digestive system grows faster than the digestive organs and stomach, basically the organs of processing and digestion; body weight shifts greatly depending on the physiological status and the food given (Widiyono *et al*., 2020).

Conclusions

In this study, it could be well described the administration of durian peels processed by soaking a solution of rice husk ash filtrate with various doses and different soaking times did not affect body weight gain, dry matter consumption and efficiency of ration use, carcass content, internal heat level, waves of breath and heartbeat waves of female goats peanut. Giving durian rind soaked in a solution of rice husk ash filtrate with different portions had no concrete impact ($p>0.05$) on body weight gain, consumption of dry matter and efficiency of ration use, level of internal heat, breath waves and heart rate waves of female goats peanut, but had a significant ($p<0.05$) effect on the weight of the edible carcass component and very significant ($p<0.01$) on the percentage of non-edible carcass of female goats peanut. Administration of processed durian peels by immersion in a solution of rice husk ash filtrate at different times had a significant ($p<0.05$) effect on weight gain and the ability to use female goats peanut rations, no significant impact ($p>0.05$) on physiological parameters of female goats peanut, significantly ($p<0.05$) on slaughter weight and very significant ($p<0.01$) impact on carcass weight, carcass content and non-carcass edible content of female peanut goat.

CONFLICT OF INTEREST

In writing this article, there is no conflict between the author and the other parties.

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