

# Commercial Cuts of Carcass of Thin Tailed Lambs and Sheep Fed Complete Feed

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# Commercial Cuts of Carcass of Thin Tailed Lambs and Sheep Fed Complete Feed

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## Abstract.

This reasearch was conducted to examine commercial cuts of thin tailed lambs and sheep fed complete feed. This study used 6 male thin tailed sheep aged  $\pm 11$  months with average body weight of  $23,01 \pm 1,91$  kg (CV 8,31%) and 6 male thin tailed lambs aged  $\pm 4$  months with average body weight of  $15,41 \pm 2,11$  kg (CV 13,72%). They were fed a complete feed as much as 3.5% from body weight. Fed contained 12% crude protein (CP) and 55% total digestible nutrients (TDN) and was given ad libitum. The animals were raised for 12 weeks and slaughtered being carcass. Commercial cuts were obtained from a half right body part of each sheep carcass and devided into eight commercial cuts e.i. neck, shoulder, fore sh<sup>4</sup>ok, breast, flank, rack, loin and leg. The collected data was analyzed using t- test in 5% level. The results showed t<sup>11</sup> slaughter weight, carcass weight and half carcass weight were significantly different ( $P < 0.05$ ) while the percentage of carcass weight and half carcass was not significantly different ( $P > 0.05$ ). All of the weight commercial cuts of thin tailed lambs and sheep were significantly different ( $P < 0.05$ ) but flank ( $P > 0.05$ ). The percentage of neck and leg were significantly different ( $P < 0.05$ ), while the other commercial cuts were not significantly different ( $P < 0.05$ ). Based on the result, it can be concluded that commercial cuts of sheep is better than lambs.

## 1. Introduction

Thin Tailed Sheep is a small ruminant that usually raised by local people. There are two kinds of feed for sheep that used to use which are grass and concentrate. Generally, sheep fed only grass could not achieve the requirements of production, therefore the concentrate being a feed addition with high nutrition. The concentrates utilization is used to improve the nutrient value and increase the energy and protein of feed [1]. In addition, the concentrates utilization also improves the dry matter feed digestibility, body weight gain, and feed efficiency. Growth can be manipulated with nutrients treatment by providing better nutrition [2] and good nutrition levels affects the body weight of sheep [3]. Different levels of nutrition will produce a carcass different composition [4]. Therefore, the concentrates contained complete nutrients and high protein is required.

Nowadays, the demand of lean meat is increasing. Lean meat can be obtained from lambs. The lambs has slow fat growth levels because feed nutrition given is still carrying out for bone growth,

meat and internal organs requires. Bones is the skeleton body that grows and develops early also followed by the meat and fat growth [2]. The increased body weight and high carcass production depend on age of the animals [5]. According to the mature sheep, the bone growth rate were slowed then produced fat [6]. The variety composition of meat tendon depends on age as well [4]. Good slaughtered process is in lambs because the fat growth has optimum than sheep [7].

Commercial cuts based on the consumer demand and to fulfill carcass selection of meat as desired [2]. The carcass commercial cuts of sheep divided into: shoulder, rib, loin, shank, breast, flank, leg and neck [8]. Every The carcass commercial cuts of sheep have different proportions based on each carcass part. The purpose of this research is to examine commercial cuts of thin tailed lambs and sheep carcasses.

## 2. Materials and Methods

The materials used in this research were 6 thin tailed lambs aged  $\pm 4$  months with average body weight of  $15.41 \pm 2.11$  kg (CV 13,72%) and 6 thin tailed sheep aged  $\pm 11$  months with average body weight of  $23.01 \pm 1.91$  kg (CV 8,31%). They were raised intensively and fed complete feed that contained 12% CP and 55% TDN. The complete feed composed of 50% elephant grass and 50% concentrate that consisted of 50% elephant grass, 8% soybean meal, 9% rice bran, 2% mineral mix, 8% dried cassava, 18% wheat bran and 5% molasses. This research used randomized group design according to the age of the animals. The parameters observed in this study were dry matter intake, dry matter digestibility, feed conversion and body weight gain.

The research used independent sample comparison design method between sheep and lambs in commercial cuts. The sheep had 12 weeks periods treatment and fasted for 12 hours before slaughtering process. Afterwards, sheep's body were separated into carcass and non-carcass. Carcasses were weighed and split into 2 parts (right and left carcass) and stored in low room temperature for 10 hours. Each right carcasses were divided into eight parts according to the carcass commercial cuts that consisted of neck, shoulder, rack, loin, foreshank, breast, flank, leg [8]. The eight parts of carcass commercial cuts were weighed and analyzed using T test significant in 5% level.

## 3. Results and Discussion

The average weight and percentage of sheep dan lambs carcasses commercial cuts are shown in Table 2. The results showed that all commercial cuts weight of thin tailed sheep and lambs carcass were significantly different ( $P < 0.05$ ) but flank ( $P > 0.05$ ). The percentage of commercial cuts of thin tailed sheep and lambs carcass on the neck and leg was significantly different ( $P < 0.05$ ), while the others were not significantly different ( $P > 0.05$ ).

The shoulder weight of sheep and lambs was significantly different ( $P < 0.05$ ). In the other hand, the shoulder weight of sheep and lambs was not significantly different ( $P > 0.05$ ). Shoulder is a mature part that has a large growth rate at the first [9]. The shoulder is a proponent of motion function. Shoulder percentage increased by the increasing of carcass weight [10].

The neck weight and percentage were significantly different ( $P < 0.05$ ). It indicated that neck weight in mature sheep was larger than lambs because bone growth in mature was optimal. The first growth rate section on lambs occurred slowly and became rapidly then. It became slowly and ended up reached mature [2]. According to [3] growth curve showed that sheep body weight was affected by age. Sheep growth was started from head and spreads to the body until foot tip to the upper body [4].

The shoulder weight of sheep and lambs was significantly different ( $P < 0.05$ ). In the other hand, the shoulder weight of sheep and lambs was not significantly different ( $P > 0.05$ ). Shoulder is a mature part that has a large growth rate at the first [9]. The shoulder is a proponent of motion function. Shoulder percentage increased by the increasing of carcass weight [10].

**Table 1.** Body Weight, Weight and Percentage of Carcass, Slaughter Carcasses and Commercial Cuts of Thin Tail Sheep and Lambs

Variables	Weight (g)		Percentage (%)	
	Sheep	Lambs	Sheep	Lambs
Body weight	22.585,67 <sup>a</sup>	16.736,67 <sup>b</sup>	-	-
Weight carcass	8.934,00 <sup>a</sup>	6.110,97 <sup>b</sup>	39,51 <sup>a</sup>	36,41 <sup>a</sup>
Slaughter weight of carcass	4.472,75 <sup>a</sup>	3.060,81 <sup>b</sup>	50,07 <sup>a</sup>	50,09 <sup>a</sup>
Commercial cuts :				
Neck	330,18 <sup>a</sup>	196,62 <sup>b</sup>	7,32 <sup>a</sup>	6,41 <sup>b</sup>
Shoulder	1.185,12 <sup>a</sup>	761,05 <sup>b</sup>	26,48 <sup>a</sup>	24,70 <sup>a</sup>
Foreshank	245,67 <sup>a</sup>	191,45 <sup>b</sup>	5,54 <sup>a</sup>	6,31 <sup>a</sup>
Breast	356,83 <sup>a</sup>	236,37 <sup>b</sup>	7,97 <sup>a</sup>	7,69 <sup>a</sup>
Flank	69,82 <sup>a</sup>	45,90 <sup>a</sup>	1,57 <sup>a</sup>	1,47 <sup>a</sup>
Rack	374,03 <sup>a</sup>	231,16 <sup>b</sup>	8,29 <sup>a</sup>	7,55 <sup>a</sup>
Loin	486,84 <sup>a</sup>	309,94 <sup>b</sup>	10,78 <sup>a</sup>	10,08 <sup>a</sup>
Leg	1.424,26 <sup>a</sup>	1.088,32 <sup>b</sup>	32,05 <sup>a</sup>	35,78 <sup>b</sup>

Different letter in the same row are significantly different (P<0,05)

The foreshank weight of sheep and lambs was significantly different (P<0.05) but foreshank (P>0.05). Foreshank functions are used to walk and move the body. Therefore, it becomes the earlier developed part [11]. The lambs legs tend to have a greater proportion than other body parts [12]. Sari et al. [13] found that foreshank bone percentage is high proportion.

The breast weight of sheep and lambs was significantly different (P<0.05) but the percentage of breast (P>0.05). Breast functions are used to protect the lungs, heart and other important organs [9], therefore, the breast was included in the mature body part [14].

The rack weight of sheep and lambs was significantly different (P<0.05) but the rack percentage (P>0.05). Rack is one of carcass part that has a slow growth. The growth of the new rack part begins when other parts are declining growth [14]. The increasing fat and meat deposition will lead to the rack section when the body weight increase [15].

The flank weight and percentage of sheep and lambs were not significantly different (P<0.05). The flank average weight and percentage were 57.86 g and 1.52% respectively. Flank or groin is the smallest commercial cut because it has no bone. Flank function is used to hold stomach contents such as digestive tract and others internal organ [15]. The digestive tract weight and size contents are related to the flank growth. Although the weight is increased, the flank weight is relative same. Therefore, the flank percentage is low when the weight increase [16].

The loin weight of sheep and lambs was significantly different (P<0.05) but the loin (P>0.05). Loin has a slow growth. Meat and fat accumulation occur in the loin portion [15]. Loin percentage increase according to the increase carcass weight [10].

The legs weight and percentage of sheep and lambs were significantly different (P<0.05). Leg grows early for walking and moving. According to [11], leg has a great bone growth rate. The leg percentage decrease while the carcass weight increase [10].

#### 4. Conclusion

Based on the results, sheep carcass commercial cuts was larger than of lambs, but flank. Sheep neck percentage was larger than of lambs, while the legs percentage in lambs was greater than of sheep.

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