

## The Utilization Kepok Fermented Banana Peels In Feed Against The Percentage Of Local Male Sheep Fat.

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**Abstract.** This research aims to know the percentage of fat in local male sheep was given fermented kepok banana peelwaste using EM<sub>4</sub>. The research was using 20 rams local male sheep with an average of 12,30 ± 1,77kg/head. The design used was completely randomized desing (CRD) with 5 treatmens and 4 replications. With various treatmens consisting of T0 (40% kepok banana peel without fermentation in ration); T1 (20% kepok banana peel fermentation in ration); T2 (40% kepok banana peel fermentation in ration); T3 (60% kepok banana peel fermentation in ration). The results showed that the treatment had no significant effect (P>0,05) to the percentage of subcutaneous fat and percentage of heart fat, significant different effect (P<0,05) to the percentage of pelvic fat and show very different effect (P<0,01) to the percentage of kidney fat. The use of fermented kepok banana peels in local sheep feedpositive effect on increasing the percentage of kidney fat, pelvis, subcutaneous fat and heart, the use of fermented kepok banana peels by 60% in feed increases the percentage of kidney and pelvic fat.

**Keyword:** Banana peels fermentation, percentage of fat, local male sheep

Received [12 November 2019] | Revised [26 November 2019] | Accepted [31 Desember 2019]

### 1 Introduction

Forage is the main source of feed for sheep that determines the success of the farm. As it is known that forage productivity is seasonal where during the rainy season the abundance of forage availability, but in the dry season the availability of forage is very little or no, so that sheep farming can decrease its productivity.

To overcome this problem, it is necessary to find alternative feed alternatives to forage forage in the dry season. In this case, banana peel waste is an option that can be used as an alternative feed. Banana peel waste can be found in the food industry that uses Kepok banana as raw material.

Sheep is a small ruminant livestock which in maintenance is not so difficult, this is because the sheep are relatively small and quickly mature so that they are automatically quite profitable because they can produce wool and meat [1].

Banana peel waste is organic waste that has nutritional content that can still be utilized. The main content that can be utilized is carbohydrate, carbohydrate content in banana peels is quite high at 18.5% [2].

Banana peels contain 59.00% carbohydrates, 0.90% crude protein, 1.70% crude fat, 31.70% crude fiber, and some mineral contents in it such as 78.10% potassium, 19.20% calcium, iron 24.30% and manganese 24.30% [3].

Fat is one of the groups included in the lipid group, which is an organic compound that is found in nature and is not soluble in water, but is soluble in non-polar organic solvents. Fat is a triglyceride compound from glycerol. In its formation, triglycerides are the result of the condensation process of one glycerol molecule and three fatty acid molecules (generally the three different fatty acids), which form one triglyceride molecule and one water molecule [4].

Fat is a network that is dynamic, many gather in the abdominal and kidney cavity walls. Laying fat first around the internal organs, kidneys and digestive organs then fat is stored in connective tissue around the muscles under the skin and between muscles [5].

Fat on the body of cattle is divided into subcutaneous (under the skin), under the stomach, in the muscles (intramuscular), more abdominal fat in rams and the more age the higher the amount [6]. Stated that higher carcass weight caused the percentage of meat or palm also to increase [7].

## 2 Materials and Methods

The research was using 20 rams local male sheep with an average of  $12,30 \pm 1,77$ kg/head. The design used was completely randomized desing (CRD) with 5 treatmens and 4 replications. Feed ingredients such as forage, banana peel, soybean meal, rice bran, cassava, palm kernel cake, molasses, minerals, EM4, medicines - worming, drinking water, and rodalone as disinfectants The tools used are 20 individual cages with 1 x 1 m2 size, 20 buckets as a place to feed and 20 drinking containers, a scale with a capacity of 150 kg with a sensitivity of 50 g, a scale with a capacity of 2 kg with a sensitivity of 10 g to weigh feed.

Table 1. Composition of Research Feed Ingredients

Feed of Ingrediens	Treatment (%)			
	T0	T1	T2	T3
Kepok Banana Peels Without Fermentation	40,00	0	0	0
Kepok Banana Peels Fermentation	0	20,00	40,00	60,00
Rice Bran	12,00	35,00	20,00	7,00
Palm Carnel Cake	10,00	12,00	11,00	8,00
Soy Bean Meal	18,00	12,00	10,00	8,00
Onggok	14,00	15,00	13,00	11,00

Molases	5,00	5,00	5,00	5,00
Premix	1,00	1,00	1,00	1,00
Total	100	100	100	100
Dry Ingredients (%)	59,03	73,19	59,23	45,20
Crude Protein (%)	15,62	15,83	15,77	15,63
Crude Fiber (%)	11,08	9,33	9,82	10,14
Crude Fat (%)	4,87	5,37	5,36	5,47
TDN	60,99	64,38	63,07	61,67

### 2.1. Research methods

The study was conducted experimentally using a completely randomized design (CRD) 4 treatments 5 replications. The treatments given are as follows: P0: 40% kepok banana peel without fermentation in ration, P1: 20% of kepok banana skin ferment in ration, P2: 40% Kepok banana peel in the ration, P3: 60% kepok banana skin ferment in ration.

Parameters of Research were percentage of subcutaneous fat obtained from the comparison of subcutaneous fat weight with carcass weight multiplied by 100%, percentage of kidney fat obtained from the comparison of kidney fat weight with carcass weight times 100%, percentage of pelvic fat obtained from the comparison of the weight of pelvic fat with carcass weight multiplied by 100%, percentage of heart fat obtained from the comparison of heart fat weight with carcass weight times 100%

## 3 Results and Discussion

### 3.1 Percentage of Subcutaneous Fat

Table 2. Average percentage of local male subcutaneous fat during the study (%)

Treatment	Repetition		Total	Average
	1	2		
T0	1,16	0,99	2,15	1,07 <sup>A</sup> ±0,12
T1	1,26	1,19	2,45	1,22 <sup>A</sup> ±0,15
T2	1,08	1,24	2,32	1,16 <sup>A</sup> ±0,11
T3	1,14	1,34	2,48	1,24 <sup>A</sup> ±0,14
Total	4,64	4,76		

Note: The same superscript in the same row and column shows no significant difference ( $P > 0.05$ ).

According to [8] subcutaneous fat is fat deposited under the skin. From the results of the study it was found that the highest average percentage of subcutaneous fat was found in P1 treatment (20% of fermented kepok banana peels in rations) which was 1.22% and the lowest in P2 treatment (40% of fermented kepok banana peels in ration) was equal to 1, 16%. This is consistent with the statement of [9] which states that the amount of fat in the body is the most diverse and highly dependent on the amount of feed consumed. [10] research results revealed that the percentage of subcutaneous fat is influenced by the amount of feed consumed. In addition, variations in body fat are caused by differences in body growth and development that depends on the nation, age, sex and background of feed. [11] stated that carcasses of rams lead to subcutaneous fat with increasing body weight.

The average percentage of sheep kidney fat given fermented kepok banana peels during the study ranged from 0.38 to 0.81% higher compared to the percentage of sheep kidney fat given kepok banana skin without fermentation that is equal to 0.49%.

### 3.2 Percentage of Kidney Fat

Table 3. Average percentage of local male kidney fat during the study (%)

Treatment	Repetition		Total	Average
	1	2		
T0	0,50	0,48	0,98	0,49 <sup>C</sup> ±0,01
T1	0,41	0,36	0,77	0,38 <sup>C</sup> ±0,04
T2	0,51	0,66	1,17	0,58 <sup>B</sup> ±0,11
T3	0,78	0,85	1,63	0,81 <sup>A</sup> ±0,05
Total	2,20	2,35		

Note: Different superscripts in the same row and column show very significant differences (P < 0.01).

A very significant increase in the percentage of kidney fat is due to high feed consumption in the provision of fermented kepok banana peels. It is known that fermentation can increase fat in the substrate. The higher the proportion of kepok banana peels given, the higher the fat contained in the feed. This is in accordance with the opinion of [12] which states that microbes change carbohydrates in the media / substrate into fat which is then accumulated as cell fat.

### 3.3 Percentage of Pelvic Fat

Table 4. Average percentage of local male pelvic fat during the study (%)

Treatment	Repetition		Total	Average
	1	2		
T0	1,19	1,16	2,35	1,17 <sup>C</sup> ±0,02
T1	1,58	1,45	3,03	1,51 <sup>C</sup> ±0,09
T2	1,72	2,10	3,82	1,91 <sup>B</sup> ±0,27
T3	1,90	2,16	4,06	2,03 <sup>A</sup> ±0,18
Total	6,39	6,87		

Note: Different superscripts in the same row and column show significant differences (P < 0.05).

The highest percentage of pelvic fat was found in P3 treatment (60% of kepok banana skin fermentation in rations) which was 2.03% and the lowest in P0 treatment (40% of kepok banana skin without fermentation in ration) was 1.51%.

It is suspected that fat weight is influenced by the amount of food consumed, the energy content of the ration, and nutrition in the ration. This is consistent with the statement of [13] who concluded that kidney and pelvic fat is influenced by ration energy levels. [14] reports that omental fat, kidney fat, and pelvic fat are influenced by ration energy levels.

### 3.4 Percentage of Heart Fat

Table 5. Average percentage of local male heart fat during the study (%)

Treatment	Repetition		Total	Average
	1	2		
T0	0.50	0.4	0.90	0,45 <sup>A</sup> ±0,07
T1	0.48	0.4	0.88	0,44 <sup>A</sup> ±0,06
T2	0.37	0.54	0.91	0,45 <sup>A</sup> ±0,12
T3	0.46	0.53	0.99	0,49 <sup>A</sup> ±0,05
Total	1.81	1.87		

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Note: The same superscript in the same row and column shows no significant difference ( $P > 0.05$ ).

The study found that the highest average percentage of heart fat was found in the P3 treatment (60% of the skin of Kepok banana fermented in rations), which was 0.49% and the lowest in the treatment of P1 (20% of the skin of Kepok banana fermented on ration), that was 0.44% .

There was a difference in the percentage of heart fat in sheep fed fermented kepok banana peels and unfermented fermented kepok banana peels. According to [15] states that sheep that get more food have more heart fat.

#### 4. Conclusion

The use of fermented kepok banana peels in local sheep feed has a positive effect on increasing the percentage of kidney fat, pelvis, subcutaneous fat and heart. The use of fermented kepok banana peels by 60% in feed increases the percentage of kidney and pelvic fat.

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