



Appearance of the Digestive Tract and Internal Organs of Goats Fed Palm Oil Cake

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Abstract. This study aims to determine the appearance of the digestive tract and internal organs of goats that are fed decanter of oil palm cake. In this method, at the end of data collection, goats are slaughtered in the Islamic way and followed by collecting samples which include the digestive tract such as the euphagus, rumen, reticulum, omasum and abumsum, intestines, colon rectum, blood, liver, limp, heart, lungs. And kidneys. Each sample was examined for appearance, especially color and fat. Four goats were fed palm flour (PODM) and field grass as control feed. After 12 days of experiment including seven days of adaptation period and data collection period, the goats were slaughtered and then each organ including the rumen, liver, spleen, lungs, heart and kidneys were separated for observation. The results showed that the color of the digestive tract and all internal organs of goats fed PODM was darker than the control feed fed with field grass. Dark rumen and reticulum colors were close to black for goats fed PODM but very light, close to cream for control feeds fed goats, field grass. The color of the internal fat organs such as the lungs, liver, spleen, heart and kidneys looks slightly different. In fact, the color of the fat around this organ was close to dark beige in goats fed PODM, while goats fed field grass as a control feed had a soft cream color close to white. Dark rumen and reticulum colors were close to black for goats fed PODM but very light, close to cream for control feeds fed goats, field grass. The color of the internal fat organs such as the lungs, liver, spleen, heart and kidneys looks slightly different. In fact, the color of the fat around this organ was close to dark beige in goats fed PODM, while goats fed field grass as a control feed had a soft cream color close to white. Dark rumen and reticulum colors were close to black for goats fed PODM but very light, close to cream for control feeds fed goats, field grass. The color of the internal fat organs such as the lungs, liver, spleen, heart and kidneys looks slightly different. In fact, the color of the fat around this organ was close to dark beige in goats fed PODM, while goats fed field grass as a control feed had a soft cream color close to white.

Keywords: Appearance · Palm · Bottle · Food · Digestion · Internal Organs

1 Introduction

Oil palm decanter flour (PODM) is a by-product of the oil palm plant which has been used as feed in rations. Several studies have been conducted on the effect of PODM in rations on palatability (1), growth, nutrient metabolism and meat quality (2), rumen environment (3) etc. However, there is no information regarding the effect of PODM in rations on the digestive tract and internal organs of animals. It is one of the important aspects in influencing the consumption, absorption, digestibility, metabolism, production and reproduction of animals. Several researchers reported on the effect of feed on the development of the digestive tract (4, 5, 6, 7) and internal organs (8). Therefore, it is interesting to study the performance of the digestive tract and internal organs of goats that are given PODM in their rations.

2 Method

This type of research uses qualitative methods. Four kacang goats aged 1–2 years with a weight of 11–17 kg collected from local breeders in Ture village were placed in a pen that had been sanitized by spraying alcohol first. Goats are given B vitamins and deworming for health purposes. Goats were fed with four PODM levels in the ration for one week of adaptation period followed by 5 days of data collection. The ration treatment was P 0 100% Grass Field (FG) as control, P 1 37.5% PODM and 62.5% FG, P 2 62.5% PODM and 37.5% FG and P 3 100% PODM. At the end of data collection, goats were slaughtered in the Islamic way and continued with sample collection which included the digestive tract such as the euphagus, rumen, reticulum, omasum and abumsum, intestine, rectum colon, blood, liver, limp, heart, lungs and kidneys. Each sample was examined for appearance, especially color and fat.

3 Results and Discussion

3.1 Surface of the Digestive Tract

The surface of the rumen, reticulum and omasum of the experimental goats had completely different colors for each treatment (Fig. 1). The surface color of the three organs is olive black for goats fed PODM but light yellowish cream for goats fed field grass. The color may be from PODM color. This color can come from the decomposition of organic matter and a decrease in the amount of oxygen [9]. It can also affect internal organs and other fat as it passes through the stomach which plays an important role in nutrient absorption. According to [10] stated that the ration treatment will affect the color of the fat. There is no information regarding the positive or negative effects of PODM in rations on the surface of the digestive tract, absorption of nutrients, fat organs, etc. It is thought that PODM may affect the surface of the digestive tract,

- a. The rumen surface of the goats was fed PODM
- b. Surface reticulum of goats was fed with PODM
- c. The surface of the goat omasum was fed PODM
- d. Rumen surface of goats treated with FG
- e. Surface reticulum of goats was fed with FG
- f. The surface of the goat omasum was fed FG

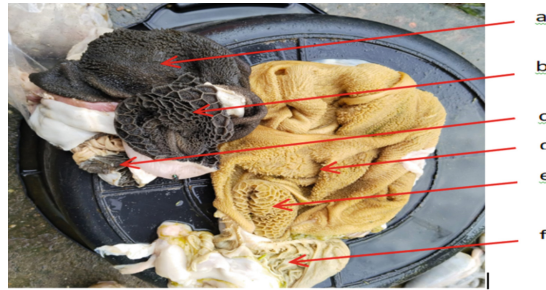


Fig. 1. Color of the digestive tract of goats given OPDM and FG

3.2 Internal Organ

The internal organs investigated in this experiment included the liver, spleen, heart and lungs (Fig. 2). The effect of PODM in the ration is quite clear on internal organ fat. The color of this organ fat came from goats that were fed PODM and FG as a control. Compared to the effect of PODM on the rumen surface, the reticulum and omasum appear not much different. Feeding goats with PODM gives a dark color to the fat that covers the surface of the internal organs. While feeding goats with FG control gives a bright color from the fat that covers these organs. The color of the fat in the internal organs is probably due to the carotenoid content of PODM where [11] reported that palm oil contains high concentrations of carotenoids. According to [10] it is stated that the color of fat is influenced by diet.


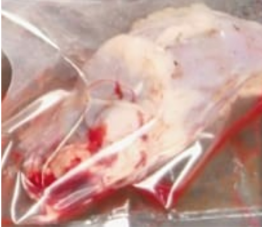






Goats are fed with PODM	Goats are fed with FG control
Heart	
	
Spleen	
	
Heart	
	
Lungs	
	

Fig. 2. Fatty internal organs of goats fed PODM and FG

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