

# Eat Behavior Muara Goat (*Capra aegagrushircus*) in the village of Batubinumbun, Muara, North Tapanuli Regency

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**Abstract.** Goat eating behavior can support nutrition of goat feed. This information is important for farmers in an attempt for Muara condition the environment and design the appropriate management needs goats. This research was conducted in July and August 2016. Livestock were used as many as 30 individuals. Eating behavioral observations performed on four groups, namely: group I (adult males and adult females with a ratio of 1: 9), Group II (adult males and adult females with a ratio of 1: 4), Group III (young male 6 tails and females young or virgin 4 individuals) and group IV (tiller consists of 2 males and females tails 3 tails). Research method was One Zero with a 15 minute interval performed on at 08.00-12.00. The results showed higher feeding activity compared to activity of rumination, the group with the highest feeding activity in the goat group samplings, rumination activity while highest in the group of adult goat.

Keywords : goat, behavior, eat

## 1. Introduction

The need for animal protein for Indonesians increases every year, in line with population growth. One of the efforts to meet the protein needs is to improve the cultivation of livestock. Commodities that still have potential to be developed in Indonesia are goats. Various efforts have been made to increase goat production, among others by crossing between local species with superior species.

Goats are the first animals to be domesticated by humans. It is estimated that at first the hunters brought back the goats from the prey. The goats are kept in the village as pets, then used for milk, meat and skin [1].

Goat population growth tends to increase every year. In 2012 the number is 17,433,000, while in 2013 the number has increased to 17,905,860. More than half of goats in Indonesia are spread over Java Island, while on the island of Sumatra, about half the goat population in Java. The population of goats on the island of Sumatra and Java is about 82.7% of the total population of goats. The rest, less than 20% spread over several islands, ranging from the most numerous, namely Sulawesi, Bali, Nusa Tenggara, Maluku, Kalimantan, and Papua. Central Java is the province with the largest livestock population, while Bangka Belitung is the province with the lowest population [2].

Goat estuaries are found in the district of Muara, North Tapanuli regency in North Sumatra province. Appearance of this goat looks dashing, her body is compact and the color distribution of fur varies between the color of reddish brown fur, white and there is also colored black fur. The weight of goat estuary is bigger compared to goat bean and allegedly prolific goat. Needs of goat meat in North

Sumatra every year is increasing while the number of goat breeders are still fairly insufficient. This is also due to lack of understanding of breeders in goat breeding management which includes handling of diseases, feed, poor farmers' attention and others so many farmers are reluctant to keep goats. Knowledge of poor breeders in the behavior of goat biology also often cause goats can not produce as expected.

An understanding of the behavior of goat goats can provide information about what the goats need in their lives. Meat eating behavior of estuary can support the fulfillment of goat nutrition from the feed. This information is important for farmers in the effort to condition the environment and design management that suits the needs of the estuary goat.

## 2. Materials and Research Methods

### 2.1. Place and time of research

This research was conducted in Batubun Village, MuaraSubdistrict, North Tapanuli Regency and this research was conducted from July to August 2016.

### 2.2. Materials and Research Tools

The ingredients used are goat estuary (*Capra aegagrushircus*) as many as 30 tail consisting of adult male 2 tail, adult female 13 tail, young males 6 tail, young female (virgin) 4 tail and tiller 5 tail (male 2 tail and female 3 tail). Feed provided forage. Drinking water is provided when the goats are in the cage.

The grazing area consists of 4 grazing areas. Other support equipment consists of a stopwatch to measure the duration of eating behavior, the camera is used to document images of feeding activity and boerka goat ruminations (*Capra aegagrushircus*), binoculars as a tool for observing livestock, the list of equations and stationery as a means of data recording during the study.

### 2.3. Research methods

The method used is descriptive method. Livestock used as many as 30 tail consisting of adult male 2 tail, adult female 13 tail, young males 6 tail, young female (virgin) 4 tail and tiller 5 tail (male 2 tail and female 3 tail) [3].

Observation of eating behavior was done on 4 groups, namely: group I (adult male and adult female with ratio 1: 9), group II (adult and adult female adults with ratio 1: 4), group III (6 young males and female young or 4-tailed virgin) and group IV (tiller consists of male 2 tail and 3 female tail).

Goats of the estuary are grazed on 4 pastures. group I occupies the pasture A and C, group II occupies the pasture B and D, group III occupies the pasture A and C and group IV occupies the pasture B and D. The shepherding period in every pasture for 6 days with observation time at 08.00-12.00.

Weeks	Populations	Location of Data Retrieval	wide	type of grazing
1	I	Grazing area A	3 ha	Flat
2	I	Grazing area C	2 ha	Steep
3	II	Grazing area B	2 ha	Steep
4	II	Grazing area D	3 ha	Flat
5	III	Grazing area A	3 ha	Flat
6	III	Grazing area C	2 ha	Steep
7	IV	Grazing area B	2 ha	Steep
8	IV	Grazing area D	3 ha	Flat

The recording of eating behavior is done by One Zero method with 15 minute interval. Each parameter is given a value of one when it is done and zero when not done, within 15 minutes. The results of behavioral recording, calculated based on the proportion of frequencies occurring over a certain interval by dividing the number of observed behaviors in overall behavior by the formula:

$$\text{Behavior} = \frac{X}{Y} \times 100 \%$$

Information:

X = frequency of a certain behavior in four hours per individual.

Y = the overall frequency of behavior observed in four hours per individual.

The data obtained will be presented and analyzed descriptively, percentages and graphs to describe the behavior of eating.

#### *2.4. Parameters Observed*

##### *2.4.1. Dining Activity*

The activity of eating consists of: kissing activity that is the beginning of the activity of kissing forage until the goats start doing other activities. The activity of grabbing food is the beginning of pergutan forage to be lifted for chewing, chewing activity is the activity of activities that start from the grunt forage that has been collected in the mouth to swallowing activity, and the activity of swallowing food that starts from swallowing the results of chewing to other activities.

##### *2.4.2. Rumination Activity*

The activity of rumination consists of: the activity of bolus expenditure that is activity that started from bolus to mouth until goats do activity of chewing bolus, activity of chewing bolus that is activity starting with chewing bolus that have been removed from rumen to mouth until activity of swallow some bolus, and swallowing activity bolus is an activity that starts from a bolus that is swallowed immediately after being removed from the rumen to the mouth or swallowing through the process of mastication until the activity of removing the bolus again.

#### *2.5. Implementation of Research*

##### *2.5.1. Preparation of Pastureland*

The grazing area used consists of 4 types, namely the pasture A, B, C, and D. The pasture A has a flat type with an area of about 3 ha, the B pasture has a steep type with a 30 degree slope and with an area of 2 ha, shepherding C has a steep type with a 30 degree slope and with an area of 2 ha, and a D grazing field has a flat type with an area of 3 ha.

##### *2.5.2. Giving a Goat Number*

Goats used in this study were 30, with the division of groups, namely: group I (adult male and female adult with a ratio of 1: 9), group II (adult male and female adult with a ratio of 1: 4), group III (male young 6 tails and young female or virgin 4 tails) and group IV (tiller consists of male 2 tail and 3 female tail). Numbers were assigned to each animal during observation in 1 group, depending on the number of animals in each group. Giving a goat number using bright coloredpillox on each part of the goat's stomach.

##### *2.5.3. Goats Observations*

Goats observations are done individually according to goat numbers. Observation at the time the goats just entered into the pasture (at 08.00 and the next observation in the interval of 15 minutes to 12.00).

#### 2.5.4. Data retrieval

Data collection is done daily at 08.00-12.00 for 48 days. Data are recorded in the observation table. If done is given a value of 1, and if not done given a value of 0.

### 3. Results and Discussion

Observations were on eating and rumination activities. The activity of eating consists of kissing, grunting, chewing, and swallowing. The rumination activity consists of removing bolus, chewing bolus, and swallowing bolus.

Table 2. Recapitulation of research results

Parameter	Group I		Group II		Group III		Group IV	
	Pd A	Pd C	Pd B	Pd D	Pd A	Pd C	Pd B	Pd D
Activities								
Eating	70,09	60,75	65,99	69,02	70,97	70,53	78,52	71,73
Smelling	8,97	9,69	15,03	16,01	10,81	10,20	31,57	30,47
Grabbing	17,33	17,29	16,82	16,99	20,44	21,22	15,65	16,00
Chewing	16,93	16,98	17,07	18,02	19,86	18,90	15,65	15,04
Swallowing	16,87	16,79	17,07	18,00	19,86	20,21	15,65	10,22
Activities								
Rumination	29,9	39,25	33,08	30,98	28,99	29,47	21,44	28,27
Take out								
Bolus	9,68	13,78	10,80	10,45	9,91	10,01	7,30	9,45
Chewing								
Bolus	10,59	14,10	12,04	13,44	9,81	9,28	7,43	11,32
Swallowing								
Bolus	9,63	11,37	11,14	7,09	9,27	10,18	6,71	7,50

Description: Pd: Pastureland

In Table 2, the highest feeding activity was found in group IV of grazing field B (2 ha) that was 78.52% and the lowest feeding activity was found in group I of C pasture (2 ha) that was 60.75%.

From the results of research activity of group IV activity in each of the grazing area found that kissing activity has higher frequency than other aktivitas. This is because the rumen in the estuary goat livestock has not been too able to digest forage feed or solid feed so that the activity of goat breeding goat breed more kiss activity. This is consistent with the statement of Devendra and Burns [4], which states that goats begin to taste solid feed, such as leaves, shrubs, grasses or drywall when they are about two to three weeks old and this is encouraged in view of its effect on rumen development delayed when animals are not fed solid.

In Table 2, the highest ruminant activity was found in group I of C pasture field (2 ha), which was 39.25% and the lowest ruminant activity was found in group IV of grazing field B (3 ha) that was 21.44%. The frequency of rumination was higher in grazing C (39.25%). This is because the lack of eating activities that make cattle faster to do rumination activity.

In the recapitulation of the highest activity in every pasture is the activity of eating, followed by rumination activity. As Sumoprastowo [5] points out, goats eat only in the morning and in some afternoons. Afternoon is used to chew the breed.

#### **4. Conclusion**

The eating behavior of estuary goat (*Capra aegagrus hircus*) in Batubunbun Village MuaraSubdistrict North Tapanuli Regency has the highest activity in eating activity, followed by rumination activity. The highest feeding activity is in group IV (goat mouth of seedling) with percentage 78,52% where the most dominant activity is kiss (31,57%), and highest rumination activity is in group I (adult estuary goat) with percentage 39.25% the most dominant activity was chewing bolus (14,10%) where the most dominant activity was chewing bolus (14,10%). It is recommended to have more specific follow-up studies, such as eating behavior of goat for 24 hours.

#### **References**

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