

# Perception of cattle farmers toward silage as animal feed

*by* V S Lestari

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## Perception of cattle farmers toward silage as animal feed

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**Abstract.** Silage is a high-yield fermented feed given to ruminants. The aim of this research was to identify perception of cattle farmers toward silage as animal feed. The research took place in Soppeng Regency, South Sulawesi. Data were collected through observation and interview by using questionnaires. Likert scale was used to answer the questions which consisted of score 3 refer to agree, score 2 refer to less agree and score 1 refer to disagree. Data were analysed descriptively by using mean and percentage. The results of this research showed that perception of cattle farmers toward silage as animal feed was categorized as agree.

### 1. Introduction

The successful of livestock business need three components namely breeding, feeding and management. The requirements of cattle for forages amounted 25 kg per day. It is difficult to find forage during dry season. One of technologies to provide forage during dry season was silage. The use of silage for animal feed has been carried out in countries. Beef cattle breeders in Soppeng district, South Sulawesi Province manage their livestock as a side business, small scale, traditional methods of maintenance, hence productivity is low. Obstacle in increasing the scale of beef cattle business is a limited land and lack of capital, lack of knowledge of good farming methods and lack of labor in agriculture. Agricultural land use has been decreased by 14.73% since 2015. This is due to the increase in population by 1.05% resulting in increased residential needs. As a result, the area of agricultural land as a source of forage (grass) decreased. The lack of capital can be caused by famers have limited access to credit facilities in rural areas, and it is difficult to fulfil the requirement of credit. Moreover, livestock households decreased by 14.39% [1]. According to Sumaryanto et. al. the number of rural workers employed and seeking work in cities has been increased over the past ten years [2]. Most of them are non-agricultural sector-oriented to work/ business, both in the formal and non-formal sectors. The trend towards increasing interest in young rural workers working in urban areas in the non-farm sector is not only happened in rural areas, but also occurs urban areas, in Java and outside Java. In addition, farmers have not been optimally utilized their resources. Lack of the number of extension agents also becoming problem while many farmers need to have guidance from extension workers in order to transfer knowledge, information and technology [3].

According to Trisnadewi et. al., forage preservation technology can be done with various methods such as hay, silage, and ammoniation [4]. Preservation by making straw is by drying forage, both naturally (using sunlight) and using a dryer. Silage is derived from forage for food or agriculture which is preserved in a fresh state through the fermentation process in silos. While the process can bind the complex bonds of lignocellulose and lignohemisellulosa hence it is more easily digested by rumen microbes and can increase nitrogen for rumen microbial growth. Through preservation technology, it saves longer energy and nutrients from forage will be used.

Silage is a process preserves farage and stored it in a silo, a tightly closed and airtight place, in anaerobic conditions. In an anaerobic climate it will accelerate the growth of anaerobic bacteria for



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the formation of lactic acid [5]. By making silage, the forage produced has increased the overhaul of its complex components into simpler components. It is easily digested by rumen microbes and increases digestibility and saves consumption [6]. Silage-making provides an opportunity to preserve surplus forage during the wet season for later use by cattle during the dry season when forage is scarce [7]. Based on these facts, we conducted research with the aim to determine the perception of beef cattle breeders on silage as animal feeds.

## 2. Materials and Methods

The research was conducted in Soppeng Regency, South Sulawesi in 2019. Sample was consisted of cattle farmers which were have been chosen purposively by 25 farmers. Data were collected through observation and in-depth interview by using questionnaires. To know the perception of farmers toward silage as animal feed, five variables which consisted of profitability advantage, compatibility, complexity, trainability and observability were used. Likert scale was used to answer 5 questions. The answer was given score from 1 until 3. Score 1 refer to disagree, score 2 refer to less agree and score 3 refer to agree. The data were analyzed descriptively by using mean and percentage [8].

Perception of cattle farmers toward silage as animal nutrition can be approached by class range as follows:

$$\begin{aligned} \text{Highest value} &= \text{highest score} \times \text{number of respondents} \times \text{number of questions} \\ &= 3 \times 25 \times 5 \\ &= 375 \end{aligned}$$

$$\begin{aligned} \text{Lowest value} &= \text{lowest score} \times \text{number of respondents} \times \text{number of questions} \\ &= 1 \times 25 \times 5 \\ &= 125 \end{aligned}$$

Class interval can be calculated by:

$$\begin{aligned} \text{Class interval} &= \frac{\text{Highest value} - \text{Lowest value}}{\text{Number of class}} \\ &= \frac{375 - 125}{3} \\ &= 83,33 \sim 83 \end{aligned}$$

There were three categories for the class range:

$$\begin{aligned} \text{Agree} &= 291 - 375 \\ \text{Less agree} &= 208 - 291 \\ \text{Disagree} &= 125 - 208 \end{aligned}$$

## 3. Results and Discussion

### 3.1. Characteristics of respondents

**Table 1.** Characteristics of Respondents

Characteristics	Min	Max	Mean	Percentage
Age (years)	30	59	38.73	
Education Level				
• Elementary school				72.73
• Junior High School				9.09
• Senior High School				18.18
Number of family (person)	1	6	3.20	
Number of herd size (animal)	1	20	6.40	
Cattle farmers experience	1	40	12.67	

Table 1 showed that the average age of respondents was 38.73 years with the minimum age was 30 years and the maximum was 59 years. It was clear that respondents were in productive age. Based on education level, majority of respondents finished from elementary school. This indicated that their education were low. On average number of family was 3.20 person. This mean that respondents came from a small size family member. Number of herd size was 6.40 animal. This mean that the

ownership of cattle was small size. Cattle farmer experience on average was 12.67 years, meaning that their farming experience was good because it was over 10 years.

### 3.2. Perception of cattle farmers toward silage as animal feed

**Table 2.** Perception of cattle farmers toward silage as animal feed

Variables	Score	Frequency	Weight	Percentage
Relative advantage	3	25.00	75.00	100.00
	2	0.00	0.00	0.00
	1	0.00	0.00	0.00
			<b>75.00</b>	
Compatibility	3	14.00	42.00	65.63
	2	11.00	22.00	34.37
	1	0.00	0.00	0.00
			<b>64.00</b>	
Complexity	3	9.00	27.00	62.79
	2	0.00	0.00	0.00
	1	16.00	16.00	37.21
			<b>43.00</b>	
Trainability	3	9.00	27.00	50.94
	2	14.00	24.00	45.28
	1	2.00	2.00	3.78
			<b>53.00</b>	
Observability	3	13.00	39.00	65.00
	2	9.00	18.00	30.00
	1	3.00	3.00	5.00
			<b>60.00</b>	
Total			<b>295.00</b>	

Perception can be defined as factors linked to the observer, object, or the context in which it occurs, while attitude consists of a predisposition to respond favorably or unfavorably towards object or behavior [9]. Based on Table 2, total weight was 295 in the range between 291 and 375. Meaning that perception of respondents toward silage as animal feed was categorized as "agree". Most of the respondents told that silage innovation can provide advantages in term of costs, time usage, and use of power in the supply of animal feed and silage innovation in accordance with the needs of farmers. Moreover, most of respondents agreed that silage innovation is easy to apply because there is no complexity in making silage in the preparation of tools, preparation of raw materials, and in the process of making silage. Silage innovation can be tried on a limited scale as well as silage innovation can be applied at every size of farming [10].

### 4. Conclusion

Based on the results of the research, it can be concluded that perception of cattle farmers toward silage as animal feed can be categorized as "agree".

### Acknowledgments

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