

Efficiency the Utilization of Folow up Palm Plants foor Increasing Production Beef Cattle in District Pasaman Barat

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Abstract. The main problem in the development of cattle business people in palm plantation, one exception availability of forage animal feed whether in quantity n quality. Other side the existence of palm leaves the midrib has been waste of a disturbing and not been utilized by farmers. To the touch technological innovations feed in te form of silage then palm leaves the midrib has been animal feed worthy of in eating of cattle. The purpose of this research is identify the effects the provisio of feed based silage palm leaves midrib increased body weight on cattle beef and analyzing efficiency the cost of animal feed. Research in farmer group Tanjung Keramat in district Kinali, Pasaman Barat in february until april 2017. Respondent are set down in purposive sampling. This research used 18 tail local bulls created the average 2 until 2, 5 years. Treatment provides was P1 control grass field is 10% from body weght (25 Kg) + bran is 10% from body weght (2,5 Kg) , P2 granting of silage then palm leaves (10 kg) + bran (1,5 Kg) + gliserida (2 Kg). In an analysis using t table *independent sample t-test* $\alpha=5\%$. Result of research shows P1 increase body weight cattle 0,68 kg/tail/day and P2 0,81 kg/ tail/ day . Provision of feed based silage then palm leaves significant compared feed control t test $(-6,9) > t$ tabel (2,4). With efficiency cost feed during 90 days P1 (Rp. 967.500,-/ tail) and P2 (Rp. 675.500,-/tail). So, with provision palm leaves besides increasing body weight cattle, can also reducing the grass that drain time dan energy can reduce the cost daily cattle feed.

Keyword : beef cattle, feed, palm leaves

1 Introduction

Farm is one of the superior sectors in terms of increasing income an area, as always high demand for livestock products as meat, milk, eggs and others. Their This to the livestock sector is an opportunity to further develop animal husbandry to livestock area. But in reality farm business is dominated by holder livestock, where is the farmers have many limitations like in terms of, ownership forage limited information, the limited human resources, and limited capital. In farm the most important thing to keep the sustainability of farm business, one of them is the availability of fodder and forage fodder both in quality.

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This is because the land transfer function from forage land pasture fattening to be the agriculture, industry and settlement.

[17-18] says one of the solution to always keep going to the needs of the availability of feed them with the use of specific location an agriculture waste. In general to waste food crops many known and used the feed as straw corn and hay rice. But to farmemrs who are based on the site of the oil palm having obtacles in fulfilling the availability of forage fodder, because forage in land borders of the oil palm very limited. Therefore the need for utilization of waste the oil palm like the midrib palm leaves that as long as it is disturbing in land palm [2,8,9,11,12]. To the touch technological innovations fodder such as silage or fermentation midrib palm leaves can be processed to silage midrib palm leaves whose nutrition having the similar with forage fodder so able to replace forage as fodder. According to [3,14,15], there needs to be a touch of technological innovations in agricultural waste to increase the value of nutrientswith the addition of an enzyme, growing mushrooms, and bacteria and anaerobic fermentation.

Based on the existing potential west Sumatera get garden enough the oil palm widely reaching 129.93720 ha. In district pasaman there are of the oil palm is 66.337 ha. Potentially highly prospective oil palm plantations bearing in mind the 70 % from remainig agrocultrual (midrib, leaves and stems) can be used as a source of forage [1]. Ny tree palm produce 22 midrib/ year with weights 7 kg. If every hectares of land planted 130 tree so obtained 20.020 fresh midrib/ years. Mindrib contains 26,1 % dry substances or 5.270 kg/ ha that is easily digested by a cow.

The utilization on waste the oil palm an efficiency move produced feed that are able to increase productivity cattle. Capacity a garden the oil palm in west sumatera to give contribution to development of beef catle industry have promising prospect in West Sumatera. The purpose of this research is identify the effects the provisio of feen based silage palm leaves midrib increased body weight on cattle beef and anilize efficiency the cost of animal feed at Tanjung Keramat Groups in Sub- district Kinali district West Pasaman.

2 Methodology

Research implemented at Tanjung Keramat groups in sub district Kinali district West Pasaman on the February – March 2017. Responden appointed purposive sampling. Collection of data using recording at regular interval to see growth of weight cattle. Collection data was done with technique with assistance teams for technological innovations feed midrib based silage palm leaves. Cattle kept during research do with cage system. This research uses 18 tail the bull with avarage age of 2 - 2,5 years. Treatment that given is P1 control pattern 10 % grass field from weight (25 kg) + bran 1 % from weight (2,5 kg), P2 give silage palm leaves (10 Kg) + bran (1,5 Kg) + glyceride (2 kg).

2.1 Methods of Analysis

Tabulation and analysis implemented by descriptive set qualitative and quantitative. Data of collection is growth of weight beef cattle and data of cost efficiency fodder needs during research. For data impact give silage palm leaves to weight beef cattle used *independent sample t-test* ($\alpha=5\%$). Before implemented testing ,the first known varians from two data. Testing varians data is : $F = (S_1)^2 / (S_2)$

F = F value

S₁= Large varians value

S₂= Small varians value

Data has *equal variance* if $F\text{-value} < F\text{-Table}$ and instead *unequal variance* if $F\text{-value} > F\text{-Table}$. T-test for *equal variance* used *formula Polled Varians*:

$$T\text{-test for unequal vari. } t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{(n_1 - 1)S_1^2 + (n_2 - 1)S_2^2}{n_1 + n_2 - 2} \left(\frac{1}{n_1} + \frac{1}{n_2}\right)}}$$

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}}}$$

X = Average Value
 S₁ = Large varians value
 S₂ = Small varians value

For data cost efficiency fooder based silage palm leaves analyzys used data tabulation and percentage.

3 Results And Discussion

3.1 Growth of Body Weight of Beef Cattle

The feed assistance that has been given to livestock in the Saiyo Sakato group is in the form of control feed (P1) and palm leaf midrib silage based feed (P2). Utilization of palm oil waste such as palm leaf midrib is a feed that has the potential to increase livestock body weight, which can be seen in the graph below.

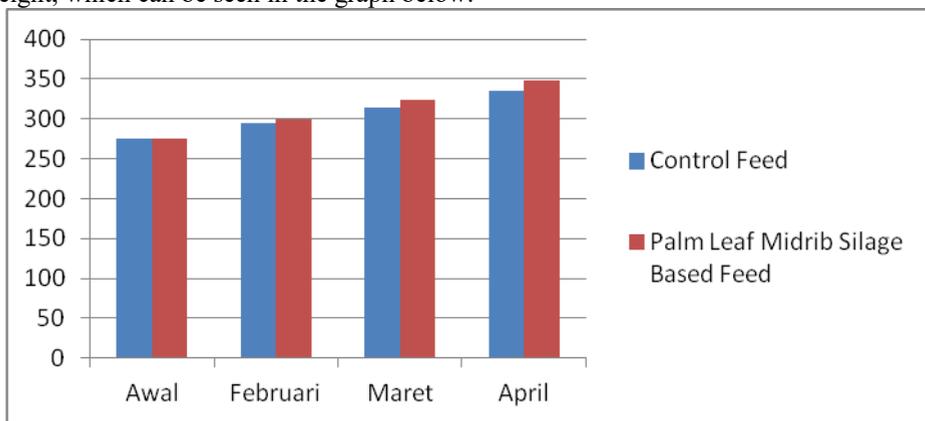


Fig. 1. Average Weight Gain Of Beef Cattle

The chart above shows (p1) raising heavy bodies cattle production 0,68 kg / tail / day and p2 0,81 kg / tail / Day. [7] mentioned that by-product palm oil can be used as animal feed ruminants among others the midrib, palm leaves bunches of empty, palm oil mud bungkil oil palm and palm kernel. Midrib palm leaves obtained from trimming can forage mensubstitusi cattle. Shortage cattle farmers to midrib leaves for palm than have grass midrib palm easy because leaves in extract palm especially in gardens during harvest time. Midrib one bunches of palm that is pared his skin can reaches the weight of 2,2 kg. Farmers more saves time and so is, with the coarse palm protein midrib (9,22 %) higher than grass (8,2%) [4,16] midrib palm is a source of forage for cattle for forage mensubstitusi feed. [6] stated that the number of feed consumption a decisive factor the most important in determining the amount of food substances obtained by cattle. To see whether control

pattern feed (P1) and palm-based feed (P2) have a significant effect or not, we can see the data below.

t-Test: Paired Two Sample for Means

	<i>p1</i>	<i>p2</i>
Mean	0,688571429	0,81
Variance	0,007414286	0,009566667
Observations	7	7
Pearson Correlation	-0,186020849	
Hypothesized Mean Difference	0	
Df	6	
t Stat	-6,929023282	
P(T<=t) one-tail	0,000223767	
t Critical one-tail	1,943180274	
P(T<=t) two-tail	0,000447535	
t Critical two-tail	2,446911846	

Source: Processed data, 2020

From the analysis, it can be seen that there is a t stat with a value of -6.9. The value of t Stat is the value of t count. The t table value is shown by the Critical Two-tail t with a value of 2.44. So t count (-6,9) > t table (2,4). This means that oil palm waste-based feeding is significantly different compared to farmer pattern feed. So feed based waste palm capable of promote the country the weight increased productivity increase cattle, and long term for support beef development in West Sumatera.

Research results [13], shows that leaves silage midrib palm as fodder containing nutritional value high and the palm midrib leaves as the substitution forage feed beef can be given all the way up to 60 % , and will improve the weight cattle production compared to be forage and more efficient in the use of feed. According to [5], palm fronds and leaves can be used as cattle feed instead of grass as a source of forage, because they have high crude fiber with high lignin levels, 17.4% and 27.6%.

3.2 Cost Efficiency Foder Beef Cattle

In this research used foder control pattern (P1) andfoder based silage palm leaves (P2), that has foder cost different. Foder issued during the research (90 days) can be seen in table below :

Table 1. The Provision Of Feed At Treatment 1 (1 tail/days).

Ingredients	Amount (kg)	Price/kg	Cost (Rp)
Grass Field	25	300	7.500
Bran	2,5	1.300	3.250
Total cost	-	-	10.750

Source : Primary Data, 2017

Table 2. The Provision Of Feed At Treatment 2 (1 tail/days).

Ingredients	Amount (kg)	Price /kg	Cost (Rp)
Palm leaves	10	500	5000
bran	1,5	1.300	1.950
glyceride	2	300	600
Total cost	-	-	7.550

Source : Primary Data, 2017

Table 3. Cost Efficiency Fooder Based Silage Palm Leaves (1 tail/90 days).

Treatment	Selling Price (Rp/tail)	Purchase Price (Rp/ekor)	Fooder Cost ¹⁾ (Rp)	Benefit/Tail ²⁾	
				(Rp)	(%) ³⁾
I	6.500.000	8.250.000	967.500	782.500	100
II	6.500.000	8.750.000	675.500	1.574.500	174,7

Source: Processed Primary Data, 2020.

Description : ¹⁾Cost Fooder during 90 days; ²⁾Bennefit= differencesell- purchase be reduced cost fooder; ³⁾Treatment 1 by contrast.

With efficiency fooder cost during 90 days achieve 43% to reduce fooder cost is P1 Rp. 967.500,-/tail and P2 Rp. 675.500,-/tail. And profitability P1 (100%) as control and fooder based silage palm leaves P2 (174,7 %), as benefit promising. So, with give palm leaves and to increase weight beef cattle, can also reduced used grass that drain time and energy and can reduce fooder beef cattle.

4 Conclusion

Result of research shows P1 increase body weight cattle 0,68 kg/tail/day and P2 0,81 kg/ tail/ day.Provision of feed based silage then palm leaves significant compared feed control t test (-6,9) > t tabel (2,4). With efficiency cost feed during 90 days P1 (Rp. 967.500,-/ tail) and P2 (Rp. 675.500,-/tail). So, with provision palm leaves besides increasing body weight cattle, can also reducing the grass that drain time dan energy can reduce the cost daily cattle feed.

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