

STUDY OF EFFECT OF FEED IMPROVEMENT OF LACTATION BALI COWS ON THE PERFORMANCE PRE-WEANING CALF GROWTH

Kajian Perbaikan Pakan Pada Induk Sapi Bali Menyusui, Pengaruhnya Terhadap Pertumbuhan Pedet Pra Sapih

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ABSTRACT

Feed requirements for livestock are two types of basic necessities of life and the need for production . Understanding the basic necessities of life in a simple and easily measured is the need to maintain body weight live . That is, if a cow does not go up and not down and not produktion milk . If cows are given substantially more than the necessities of life then the excess will be converted into the form of production such as milk , meat , labor and growth of the embryo or fetus during pregnancy .The studied was conducted at the farm Experiment Gowa, The Assessment Institute of Agriculture Technology South Sulawesi. The purpose of the study to determine the effect of feed improvement lactating Bali cows on pre- weaning calf growth. The material used is a 9 tailed Bali cows that had just given birth they were divided into 3 treatments feed improvement, namely : (A) Forage ad libitum as the control , (B) Forage + rice bran +tofu and (C) Forage + rice bran + coconut oilcake. Additional feed given morning and evening as much as 2 kg/head/day. The results showed daily weight gain on cows on treatment A , B and C , respectively (0,005) kg/head/day ; 0.186 kg/head/day and 0.236 kg/head/day. While the daily body weight gain in calf groth each A (0.015 kg/head/day), B (0.127 kg/head/day) and C 0.101 kg/head/day. Farm analysis showed benefit cost B and C greater than that of A, respectively Rp. 493 320 kg/head/day, Rp. 328 680 kg/head/day and Rp . 239 400 kg/head / day. From the analyses, the conclusion can be drawn, as fllows that the treatment improved feed on lactation Bali cows by providing additional food tofu and coconut oilcake to increase cows and pre-weaning calf growth live weight so can improve calf growth. and prevent the death of the calf.

Key Words : Feed, Cows, Performance, Calf Growth

ABSTRAK

Kebutuhan pakan bagi ternak ada dua jenis yaitu kebutuhan hidup pokok dan kebutuhan untuk produksi. Pengertian kebutuhan hidup pokok secara sederhana dan mudah diukur adalah kebutuhan untuk mempertahankan bobot badan hidup. Artinya, apabila seekor sapi tersebut tidak naik dan juga tidak turun serta tidak mengasilkan susu Jika sapi diberi lebih dari kebutuhan hidup pokoknya maka kelebihan itu akan dirubah menjadi bentuk produksi misalnya susu, daging, tenaga kerja dan pertumbuhan embrio atau fetus dalam masa kebuntingan. Kajian telah dilaksanakan di Kebun Percobaan (KP) Gowa, Balai Pengkajian Teknologi Pertanian (BPTP) Sulawesi Selatan, dengan tujuan mengetahui pengaruh perbaikan pada induk sapi Bali menyusui terhadap perkembangan pedet pra sapih. Materi yang digunakan adalah 9 ekor induk sapi Bali yang yang baru melahirkan yang dibagi menjadi 3 perlakuan perbaikan pakan yaitu (A) Hijauan secara *ad libitum* sebagai kontrol, (B) Hijauan + dedak + Ampas tahu dan (C) Hijauan + dedak + bungkil kelapa. Pakan tambahan yang diberikan pagi dan sore hari sebanyak 2 kg/ekor/hari. Hasil yang diperoleh menunjukkan pertambahan bobot badan harian pada induk menyusui pada perlakuan A, B dan C masing-masing (0,005) kg/ekor/hari; 0186 kg/ekor/hari dan 0,236 kg/ekor/hari. Sedangkan pertambahan bobot badan harian pada pedet masing-masing A (0,015 kg/ekor.gari); B (0,127 kg/ekor/hari) dan dan C 0,101 kg/ekor/hari. Analisa usahatani menunjukkan perlakuan B dan C memberi keuntungan yang lebih besar dibanding perlakuan A yaitu masing-masing Rp. 493.320., Rp. 328.680 kg/ekor/hari dan Rp. 239.400 kg/ekor/hari. Kesimpulan yang dapat ditarik perlakuan perbaikan pakan pada induk sapi Bali menyusui dengan memberikan pakan tambahan ampas tahu dan bungkil kelapa mampu meningkatkan bobot hidup induk maupun pedet sehingga dapat meningkatkan pertumbuhan dan mencegah kematian pedet.

Kata Kunci : Pakan, Induk, Pertumbuhan, Pedet

INTRODUCTION

One of the critical success raising beef cattle breeding on the farm feeding the people is the right pattern. One important thing is the improvement in feeding patterns in early lactation so as to obtain adequate food nutrition in hopes of improving maintenance efficiency has a direct impact on farmers' income. System maintenance on the people who intensively farm cages cause the amount of feed consumed depends on the available feed in the cage . Feeding does not fit the needs of livestock but according to the ability of farmers is one of the causes of low productivity.

Cows are maintained and developed with the hope of producing calf. The success of livestock raising is not only able to increase the production of live weight but also depends on the production of child birth period is short and well-developed calf so good calf growth will have a high selling price. Dunn (1980) said that the parents are experiencing a shortage of cattle feed / malnutrition can affect productivity and cause a decline in child-rearing skills, improve neonatal mortality, stillbirth / weak , post -partum estrus longer. Changes in the condition of the parent body will affect biological processes. Parent who breastfeed will attempt to meet the physiological needs of life and the formation of milk for the calf , so it will affect the condition of the parent body . Nutrient deficiency would result in a decrease in the weight of the lactating mother , an average of 0.36 kg / head / day and not be able to increase the weight of the calf (Ranjhan , 1980).

At cows who had been childless in a phase of lactation and plays an important role in the development of the calf, because his calf is

dependent upon the mothering abilities particularly high milk production. Similarly, life weights of cow describes the condition of the body and is very influential to the overall biological function of cattle. Nutrient needs during lactation ration doubled due to nutrient requirements for milk production and fulfillment of basic needs of life. Fluctuations in live weight changes during lactation stem affect the development of the calf so that will affect the subsequent growth . As we know the life , health and nutritional needs of calves is dependent upon the availability of the parent milk production and stimulate the development of rumen digestion. Conditions good parent will support the development of up to 60 days as a calf peak milk production and will affect the growth rate better after weaning. To improve the condition of cows and increase milk production , cow needs to be given extra food. Additional food in the form of industrial wastes such as tofu and coconut oilcake that has a high nutritional value. Research purposes to determine the effect of improvements in lactating Bali cow to pre-weaning calf growth.

MATERIALS AND METHODS

The assessment activities was conducted at the Farm Experiment (KP) Gowa, The Assessment Institute of Agriculture Technology South Sulawesi. The material used is a 9 tailed Balinese cow that had just given birth were divided into 3 treatment improved the feed: Treatment A = Forage ad libitum as control; Treatment B = Forage + rice bran + tofu and treatment C = Forage + rice bran + coconut oilcake.

Table 1. composition of feed improvement on lactation Bali cows

No	Materials	Percentage (%)
1	Rice Bran	65
2	Tofu/Coconut oilcake	34
3	Salt	0,5
4	Picuten	0,5
Amount		100

Supplementary food is given in the morning and evening as much as 2 kg / head / day. Grass and water given ad libitum. Weighing cows and pre-weaning calf growth per month for 4 months of maintenance. Data were analyzed by using a randomized block design (RBD). Parameters are collected live weight and daily body weight gain cow and calf.

RESULTS AND DISCUSSION

Feed and Body Weight Cow

Weight of feed and Parent Life To get a good livestock productivity, then the feed factor needs to be addressed specifically in quality and

quantity. Improvement of feed in lactating mother is aimed to help the growth of beef calves. In early lactation parent requires sufficient nutrients to maintain milk production and body condition lambing. Barman and Currie (1980) stated that the cow in early lactation is generally recast adipose tissue for energy needs in order to produce milk that comes from the feed that goes into the body. Provision of tofu and soybean meal as a feed supplement in addition to forage and bran are expected to meet the nutritional needs of the parent, because both the feed material has a crude protein is high enough content.

Table 2. Nutrient composition of feed improvement on Lactation Bali Cows

Contents	Dry matter	Crude Protein	Crude Fiber	Crude Fat
Rice Bran	89,6	8,2	8,9	9,1
Tofu	26,2	23,7	23,6	10,1
Coconut oilcake	87,9	21,2	13,1	17,3
Elephant grass	16,4	9,6	1,9	32,4
Rice straw	4,2	32,5	32,5	1,5

Table 2 shows that the crude protein content of tofu and coconut cake is quite high, respectively 23.7 and 21.2. Animal protein for the body to

function, among others, for the growth and maintenance and as an energy source.

Table 3. Live weight and ADG cows for 4 months

Parameter	Treatment		
	A	B	C
Initial weight (kg)	185.3	189.7	176.3
Final weight (kg)	184.7	212.0	204.7
Daily body weight (kg/head/day)	(0.005) ^{ns}	0.186 ^{ns}	0.236 ^{ns}

Analysis of variance shows that the improved feed treatment had no significant effect ($P > 0.05$) in the feed improvement on cows, but the results showed treatment C where additional mains fed coconut oilcake gives rise live weight of 0.236 kg / head / day, whereas treatment B is supplementary fed tofu gives rise live weight of 0.186 kg / head / day. Treatment A in which stem only given forage

showed a decrease in body weight, this is because the nutritional adequacy of the food was not sufficient to produce milk, while Treatment B and C is able to provide basic living needs and milk production. It is appropriate that proposed by Short, *et al*, (1996) that supplementation strategies to improve parent will influence feed cattle live weight and condition of the dry period.

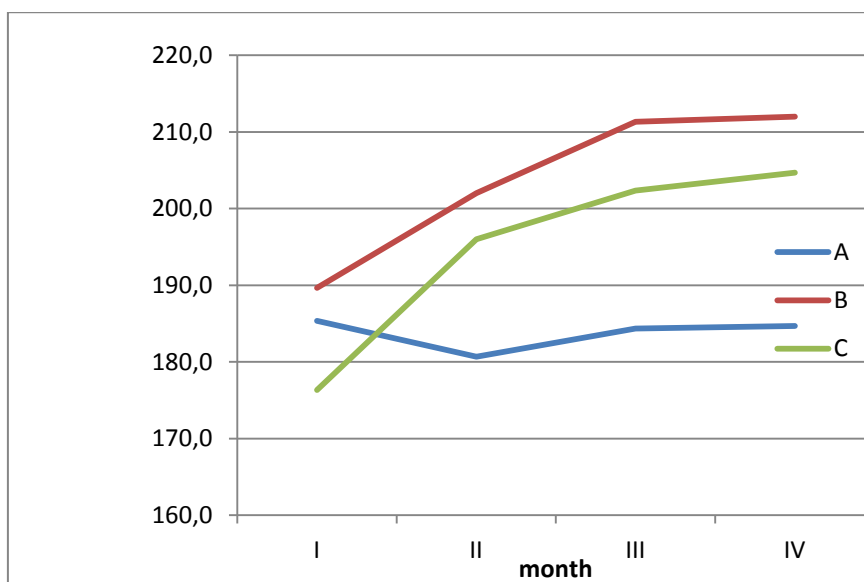


Figure 1. Graph of average body weight (kg/head) of lactating Bali cows

Table 4. Feed intake of lactation cow

Parameter	Treatment		
	A	B	C
Consumption			
- Forage	18.3	19.8	19.0
- Rice bran + tofu / coconut oilcake	-	2	2
	18.3	21.8	21.05
Total			

The amount of dry matter intake, treatment B and C is quite high consumption of dry material than that of A, so that the body weight gain both treatments are also better than that of A. As noted by Wardhana, *et al*, (1995) feed intake is sufficient to support growth well.

Calf Performance

Maintenance treatment of calves from birth to weaning is very important in the effort to provide better as a substitute for a parent and as a fattened beef cattle. Application of management of maintenance needs to be done as early as possible or from a newborn calf, given the death of 25-30% of the calves were born to experience death in the first 4 months period (Siregar, 1992).

Table 5. Live weight and ADG calf

	Treatment		
	A	B	C
Initial weight (kg)	51.5	26.33	63.16
Final weight (kg)	53.3	40.66	75.33
Daily body weight (kg/head/day)	0.015	0.127	0.101

Based on Table 5 it indicates that the calf body weight gain showed that treatment B mains fed extra tofu provide daily body weight gain compared to the highest treatment A and C are respectively 0.127 kg/head/day ; 0.101 kg/head/day and 0.015 kg/head/day . This means that waste out as feed supplement can improve calf growth and prevent deaths in calves. This is as reported by Amaha , *et.al.*, (1996) that the use of tofu in Japan for animal food, especially dairy cows and pigs can reach 70 % . Knipscheer. *et al* . (1983) also reported that the use of tofu in the goat pretty good for growth and will benefit the business. Tofu has long been used as food concentrates and produce good growth for ruminants although it is only combined with field grass alone. Based on the nutrient composition of tofu laboratory analysis consisting of 8.69 dry matter, 18.67 % crude protein, 24.43 % crude fiber , crude fat 9.43 % , ash 3.42 % and 41.97 % BETN . Looking at the composition, tofu has a high

protein content, but the food material containing a low dry matter or contains a lot of water (Hernaman , *et.al.* , 2006). Giving coconut oilcake as a food supplement to increase weight gain by cattle coconut meal contains protein as high as 22 % , but granting coconut meal in livestock rations have limiting factors is contained aflatoksin high enough. In cattle rations up to 32 % growth is quite good. Even concentrate comprising 50 % coconut meal can produce bovine growth PO fairly well (459 g/ head / day) .

Analysis of Farming

Result of analysis of farm showed that the group of cows given supplement food have higher benefits than to the control group (treatment A). Calf price calculation is based on daily body weight gain during the 120 day maintenance period, assuming a price per kg live weight of Rp. 35,000.

Table 6. Analysis of farming

Parameter	Treatment		
	A	B	C
Input (Rp/kg/day)			
- Forage	380	304	296
- Rice bran	0	1280	1300
- Tofu	0	600	0
- Coconut oilcake	0	0	1050
- Vitamin/mineral	150	150	150
Amount	530	2334	2796
Output			
- Sale Daily body weight gain	525	4445	3535
- Compos	2000	2000	2000
Amount	2525	6445	5535
Benefit	1995	4111	2739
Benefit 120 days	239.400	493.320	328.680

CONCLUSION

From the analyses, the conclusion can be drawn, as follows that the treatment improved feed on lactation Bali cows by providing additional food tofu and coconut oilcake to increase cows and pre-weaning calf growth live weight so can improve calf growth and prevent deaths.

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