

Improving Bali Cattle Productivity Through the Application of Combination Feeding "Healthy Herbs and Probiotics" in Feed for Cattle Farmers At DLT-UNJA Pudak Village, Kumpeh Ulu Subdistrict Muaro Jambi Regency

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ARTICLE INFO

Article history:

Received 20 October 2022

Revised 5 November 2023

Accepted 25 November 2023

Available online

<https://talenta.usu.ac.id/jst/index>

E-ISSN: 2621-4830

P-ISSN: 2621-2560

How to cite:

S A A Tani, Farizal, F Hoesni
"Improving Bali Cattle Productivity Through the Application of Combination Feeding "Healthy Herbs and Probiotics" in Feed for Cattle Farmers At DLT-UNJA Pudak Village, Kumpeh Ulu Subdistrict Muaro Jambi Regency," Journal Saintech Transfer, vol. V6, no. 2. pp. 77-80 2023.

ABSTRACT

Currently, the level of knowledge among cattle farmers in raising cattle is still low, as evidenced by the conventional nature of the farming system, resulting in low productivity. The optimal utilization of appropriate technology to improve the productivity of cattle has not been achieved. The community service activities conducted involve technology transfer to enhance innovation and creativity among farmers through the application of herbal medicine and probiotics in the provided feed. The technology is implemented using the "Learning By Doing" method to ensure that innovation can be directly conveyed and easily understood by the farmers. The application of herbal medicine and probiotics in cattle feed is carried out directly for approximately 1.5 months, with cattle being weighed every 15 days. The results of this activity indicate that the implementation of appropriate technology through the use of herbal medicine and probiotics in cattle feed among a group of cattle farmers in DLT-UNJA, Pudak Village, Kumpeh Ulu District, Muaro Jambi Regency, has increased the productivity of Bali cattle with a body weight gain of 0.59 kg/head/day.

Keyword: conventional, herbal medicine, innovation, probiotics, productivity.

ABSTRAK

Saat ini tingkat pengetahuan peternak dalam memelihara sapi masih rendah, yang dapat dilihat dari sistem pemeliharaan yang masih bersifat konvensional, sehingga produktivitasnya juga rendah. Pemanfaatan teknologi tepat guna dalam meningkatkan produktivitas sapi yang dipelihara belum dilakukan secara optimal. Kegiatan pengabdian pada masyarakat yang dilakukan adalah alih teknologi untuk meningkatkan inovasi dan kreativitas peternak melalui aplikasi jamu sehat dan probiotik dalam pakan yang diberikan. Implementasi teknologi diberikan dengan metode "Learning By Doing" agar inovasi dapat diberikan secara langsung dan mudah dipahami oleh peternak. Aplikasi jamu dan probiotik dalam pakan sapi dilakukan \pm 1.5 bulan secara langsung dan setiap 15 hari sapi ditimbang. Hasil kegiatan ini menunjukkan bahwa aplikasi teknologi tepat guna melalui pemberian jamu sehat dan probiotik dalam pakan sapi pada kelompok peternak sapi di DLT-UNJA Desa Pudak Kecamatan Kumpeh Ulu Kabupaten Muaro Jambi meningkatkan produktivitas sapi Bali dengan penambahan bobot badan 0,59 kg/ekor/hari.

Keyword: inovasi, jamu, konvensional, produktivitas, probiotik



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<http://doi.org/10.32734/jst.v6i2.15343>

1. Introduction

The problem often encountered by cattle farmers is the decrease in body weight after a long journey and the knowledge of farmers who only rely on grass as the main feed ingredient, not increasing body weight gain or achieving body weight obtained for a long time. Economically, keeping cattle for a long time is not beneficial for farmers. On the other hand, improvised cattle rearing is very vulnerable to disease outbreaks such as foot and mouth diseases and lumpy and skin diseases (LSD), which are currently still a pandemic. Many farmers have experienced cattle deaths due to these diseases. Treatment to anticipate this condition will require considerable costs. In general, it can be stated that cattle health management is only done casually. This

condition makes cattle health very risky and high risk. To overcome this, it is necessary to transfer technology by providing herbal medicine whose constituent ingredients are around the location and the cost is quite cheap. With creativity, this material can be processed into healthy herbs. Likewise, probiotics can be made by yourself without having to buy probiotics that are quite expensive.

Based on the findings from conducted research, incorporating herbal medicine, spices, and probiotics into cattle feed has resulted in a significant increase in weight gain. For Kupang's Bali cattle, an average of 0.6 kg/head/day was observed [1], while in other Bali cattle, the increase was 0.8 kg/head/day [2]. These outcomes underscore the importance of disseminating knowledge to farmers on how to effectively integrate healthy herbs and probiotics into cattle feed, promoting a shift from the conventional practice of relying solely on grass. This knowledge transfer aims to empower farmers to embrace technology, ultimately enhancing maintenance efficiency and achieving optimal production outcomes.

Through this activity, technology transfer will be provided in the form of demonstration by the team of community service from Universitas Jambi, providing information about the importance of the healthy herbal medicine to increase the productivity of Balinese cattle. Technology transfer was applied through the "learning by doing" methods.

This community service initiative involved collaboration with a team of five students who actively participated in field-based course recognition activities, accumulating a total of 20 credits.

This community service was aimed to overcome the problems of cattle breeders by increasing creativity and innovation of the farmers in the integrated laboratory village (DLT) of Pudak Village, Kumpeh Ulu District, Muaro Jambi.

2. Methods

Activities were carried out by providing a training of manufacture of healthy herbal medicine from various herbs and probiotics with location-specific ingredients by mixing techniques with cattle feed (forage and concentrates) independently. The partner of this activity was cattle farmers in the integrated laboratory village (DLT) of Pudak Village, Kumpeh Ulu District, Muaro Jambi.

The formula of healthy herbs and probiotics was made from local ingredients according to previous research [2][5]. The ingredients included turmeric (*Curcuma longa* Linn), ginger (*Curcuma xanthoriza*), garlic (*Allium sativum* L), kencur (*Kaempferia galangal* L), temu ireng (*Curcuma aeruginosa* Roxb), molasses and Probiotic_SA. The composition of the feed given was 70% grass 30% concentrate. The method employed in this community service initiative is Participatory Rural Appraisal (PRA). The use of this method is intended to encourage active community participation in program implementation. The community service program is conducted to apply scientific knowledge and technology in meeting local needs by leveraging the potential of existing natural resources. The implementation of activities also follows the "learning by doing" approach with the aim of stimulating the creativity of cattle farmers to innovate and enhance their knowledge in modifying certain technologies. The procedure for making healthy herbal medicine [2] implemented in Bali cattle farmers is presented in Figure 1.

Furthermore, the composition of concentrate used as ration for Bali cattle observation is presented in Table 1.

Table 1. Bali Cattle Ration Formula Based on Protein (g) and TDN (g) Requirements according to Body Weight kg/head/day

Feed Ingredients Composition	Composition
Field Grass	30 kg
Concentrate	2 kg
Tofu dregs	1 kg
Kitchen salt	50 g
Premix	50 g
Probiotics	50 g



Figure 1. Procedure for making healthy herbal medicine for Balinese cattle [2].

The healthy herbal medicine innovation that will be implemented in Balinese cows is carried out on observation cows by learning by doing so that the innovations given will be directly understood by the farmers. The implementation of this healthy herbal medicine innovation will be given to 3 observation cows with body weights of 201 kg to 208 kg by giving 300 ml of healthy herbs in the concentrate, with the amount of concentrate given as much as 2 kg and given with a frequency of three times a day (morning, afternoon, and evening) based on the results of Ergian's research [2]. At the end of the activity, we evaluated the impact of adding healthy herbs to the ration on cattle weight gain.

3. Results and Discussion

The implementation of herbal medicine innovation is given to farmers, and is done by learning by doing, and healthy herbal medicine is applied to 3 observation cows. The goal is that the innovation given can be understood by farmers, that giving healthy herbal medicine to Balinese cows affects the performance of Bali cattle. This can be seen from the increase in body weight gain of Bali Cattle during the application of innovation. The pattern of body weight gain is presented in Figure 2.

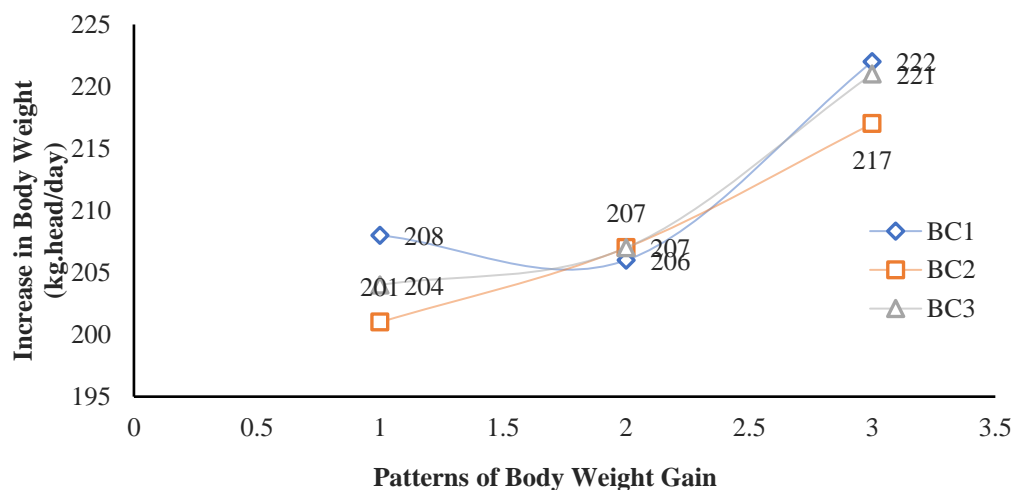


Figure 2. Body weight of bali cattle treated with healthy herbs and probiotics in ration.

Based on Figure 1, it can be seen that the provision of herbal medicine combined with probiotics in the ration with the amount of herbal medicine applied is 300 ml, it can be seen that the body weight gain of cows given herbal medicine increases. This result is similar to the results obtained by [2][4]. With this result, it can be shown to cattle farmers that the use of spices as herbal medicine ingredients can significant increase the

body weight of cattle obtained. Average Daily Gain (ADG) is an indicator to know the growth rate of livestock and the efficiency of using the feed given [6]. Factors that affect growth in cattle are the type of cattle, sex, age, feed quality, feed processing techniques, and feeding management [7].

4. Conclusions

Healthy herbs and probiotics in cattle rations can improve cattle performance because it can increase body weight gain of beef cattle and cattle become healthier. Daily weight gain of Balinese cattle fed jamu combined with concentrate was 0.59 kg/head/day. Implementation of herbal medicine innovation in concentrate with learning by doing method for cattle farmers increases farmers' motivation to utilize herbal medicine as a source of feed additive.

5. Acknowledgements

Thank you to the Rector and LPPM Jambi University for providing funds through the DIP A - PNB P University of Jambi (LPPM) Integrated Laboratory Village Service scheme number: 023.17.2.677565/2023, November 30, 2022 and Letter of Agreement for the Implementation of Community Service No.2303/UN.21.11/PM 01.01/SPK/2023, July 13, 2023.

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