

Community Service in the Tunas Jati Group on the Processing of Cow Fertilizer

Ni Ketut Ety Suwitari^{1*}, Ni Made Yudiastari², Luh Suariani³

Universitas Warmadewa

Corresponding Author: Ni Ketut Ety Suwitari suwitary62@yahoo.com

ARTICLE INFO

Keywords: Cow Manure, Fermentation, Training, Tunas Jati Group, Getasan

Received : 24, February

Revised : 26, March

Accepted: 28, April

©2025 Suwitari, Yudiastari, Suariani:

This is an open-access article distributed under the terms of the

[Creative Commons Atribusi 4.0 Internasional](https://creativecommons.org/licenses/by/4.0/).



ABSTRACT

The settlement of Getasan is situated in the Petang District. Balinese cattle are raised by the Tunas Jati Farmers Group, a livestock organization whose primary source of income is farming. Farmers also raise Balinese cattle to increase their income. Cattle farming produces waste that has not been utilized optimally so that it has an impact on the environment. Therefore, it is necessary to conduct counseling and training on the utilization of cow dung waste. Community service activities have run smoothly. Partners have been able to make cow manure with Biomi technology. Because cow manure has been converted into organic fertilizer, this action can minimize environmental pollution by 95%. Additionally, the manufacturing of organic cow dung fertilizer has resulted in a 25% increase in partner income.

INTRODUCTION

The settlement of Getasan is situated in the Petang District. Getasan Village occupies 310.04 hectares. 27.50 Ha of settlements, 111.46 Ha of rice fields, 104.63 Ha of plantations and fields, 0.66 Ha of cemeteries, 64.7 Ha of yards, 0.19 Ha of offices, and 0.90 Ha of public infrastructure are all used in the Getasan Village area. Getasan Village has a sex ratio of 99 in 2016 with 1,045 males and 1,055 women living there. The population grew by 16.62% since the BPS census in 2010. Getasan Village is bounded to the north by Pangsari Village, to the east by Sungai Ayung, to the south by Carangsari Village, and to the west by Perean Kangin Village. A livestock organization called Tunas Jati Farmers Group rears Balinese cattle. Farming is the group members' primary source of income. The Tunas Jati farmer group, like the majority of livestock producers, only uses grass that grows wild on vacant ground, rice field embankments, and agricultural waste as animal feed. Since the quality of this green fodder is poor and its availability is highly seasonal, it will inevitably have an impact on the cattle's growth.

Cattle farming produces a lot of cow dung waste that has not been optimally utilized. So far, cow dung has only been collected without proper processing, causing environmental problems such as unpleasant odors and damaging the aesthetics of the environment. Waste from cow dung has the potential to disturb and harm the environment if it is not handled or repurposed. According to, NH₃ produced by animal excrement can induce a number of lung-related illnesses when mixed with dust over an extended period of time. At high quantities, it can also weaken livestock's resistance. Given the growing demand for organic fertilizers, cow dung has the potential to be used as an organic fertilizer. It will decrease the usage of inorganic fertilizers and speed up the process of soil improvement because one cow produces 8–10 kg of dung per day, or 2.6–3.6 tons annually, which is equal to 1.5–2 tons of organic fertilizer. In addition to being natural and environmentally safe, organic fertilizer made from cow dung offers numerous advantages for plants. The advantages of using organic cow dung fertilizer include its high levels of nitrogen (N), phosphorus (P), and potassium (K); manure provides a complete source of these nutrients. This substance is excellent and essential for the growth of plants. Plants will grow well if they have enough of the elements nitrogen (N), phosphorus (P), and potassium (K). The requirement to handle livestock feces properly stems from this possible circumstance. Instead of being a financial burden on businesses, the animal waste generated is now a valuable by-product that, if feasible, is equal to the value of the primary product (meat). According, using nutrient-enriched agricultural waste and using livestock waste as organic fertilizer can boost livestock productivity, breeders, and the environment. This is one way to implement environmentally friendly livestock farming technology.

IMPLEMENTATION AND METHODS

The following techniques will be used to carry out the community service projects, which will be done in phases: 1. Surveying, interviewing, and discussing potential partner locations to learn about their circumstances and issues 2. Selecting partner locations and submitting offers 3. Using a face-to-face approach and offering direct counseling to help partners comprehend and become proficient in the Biomi technology process of turning cow manure into organic fertilizer 4. Direct practice under the guidance of subject-matter experts, allowing partners to immediately use the techniques taught.

RESULTS AND DISCUSSION

Community service activities were carried out on May 1, 2024. Partners received counseling on the types of fertilizers produced, as well as business management. Additionally, partners practiced turning cow dung into organic fertilizers. Partner knowledge of using Biomi technology to turn animal waste, such as cow dung, into valuable and practical organic fertilizers has increased from 40% to 80% as a result of this work. Partners were able to increase their knowledge from 40% to 75% about the application of organic fertilizers from cow dung waste for plants. Additionally, because cow manure was converted into organic fertilizer, there was a 95% decrease in environmental contamination. The manufacture of organic cow fertilizer resulted in a 25% increase in partner income.

In addition to being natural and environmentally safe, organic fertilizer made from cow dung offers numerous advantages for plants. The advantages of using organic cow dung fertilizer include its high levels of nitrogen (N), phosphorus (P), and potassium (K); manure provides a complete source of these nutrients. This substance is excellent and essential for the growth of plants. Plants will grow well if they have enough of the elements nitrogen (N), phosphorus (P), and potassium (K).



Figure 1. Organic Fertilizer Making Training Activities

The innovative product produced in this activity is organic fertilizer made from cow dung fermented with Biomi technology.



Figure 2. Cow Manure Organic Fertilizer

Technology used in making organic fertilizerk cow shed is fermentation with Biomi. Fermentation of cow manure aims to eliminate odors, lower temperatures, kill bad bacteria and pathogens, and improve the quality and availability of nutrients. This process involves the decomposition of organic matter by anaerobic microorganisms (without oxygen) which produce organic acids, gas, and heat. The process of making cow manure can be done effectively and efficiently with the application of Biomi technology so that it produces high-quality fertilizer and can increase soil fertility.

The benefits of this activity are as follows.

1. Reducing Environmental Pollution
Untreated cow dung can cause environmental pollution and livestock health problems. Processing cow dung into organic fertilizer can reduce these negative impacts and maintain the cleanliness of the surrounding environment.
2. Increasing Soil Fertility
Organic fertilizer made from cow dung contains high levels of nitrogen, phosphorus, and potassium. It can enhance the soil's biological, chemical, and physical characteristics, boosting agricultural productivity and soil fertility.

3. Save Costs

By processing cow dung into organic fertilizer, farmers can save on the cost of buying chemical fertilizers. Organic fertilizers can also increase the profit margins of farmers and ranchers because they do not need to spend money to buy chemical fertilizers.

4. Increasing Community Income

The program of processing cow dung into organic fertilizer can increase the income of rural communities by selling organic fertilizer or using organic fertilizer as a planting medium. This can also improve the economy of rural communities.

CONCLUSIONS AND RECOMMENDATIONS

The community service projects have been going well. Using Biomi technology, partners have been able to produce cow dung. Because cow manure has been converted into organic fertilizer, this action can minimize environmental pollution by 95%. Additionally, the manufacturing of organic cow dung fertilizer has resulted in a 25% increase in partner income. Partners are expected to practice making cow manure continuously, in addition the PKM team will continue to assist partners in producing cow manure and assisting in applying cow manure to plants.

REFERENCES

- Anonymous, 2005. Profile of Getasan Village, Petang District, Badung Regency.
- Anugrah, IW, S. Sarwoprosodjo, K. Suradisastra, and N. Purnaningsih. 2014. Simantri integrated farming system: implementation concept and its role in development programs in Bali Province.
- Budiyanto, Krisno. 2011. "Typology of Cow Manure Utilization in Efforts to Support Organic Farming in Summersari Village, Poncokusumo District, Malang Regency. GAMMA Journal 7 (1) 42-49.
- Department of Agriculture and Food Crops of Bali Province. 2014. About Simantri: Source: http://distamprovinsi_bali.com/tentang-simantri. Accessed: January 4, 2016.
- Evanita. 2017. Utilization of Cow Manure into Compost Fertilizer. Journal of Innovation and Entrepreneurship. 2(3) Sudiarto, Bambang. 2008. "Integrated Livestock Waste Management and Environmentally Conscious Agribusiness". National Seminar on Animal Husbandry and Veterinary Technology. Padjajaran University Bandung.
- Huda, Sholihul and Wiwik Wikanta. 2017. Utilization of Cow Manure Waste into Organic Fertilizer as an Effort to Support Beef Cattle Farming Business in the Mandiri Jaya Livestock Farmers Group, Moropelang Village, Babat District, Lamongan Regency. Journal of Community Service. 1(1).
- Martinez and Jose, Patrick Dabert, Suzelle Barirngton, and Colin Burton. 2009. "Livestock Waste Treatment Systems for Environmental Quality, Food

Safety and Sustainability." *Journal of Science Direct Bioresource Technology* 100 (2009) 5527 – 5536.

Nastiti, Sri. 2008. "Performance of Ruminant Livestock Cultivation in Rural Areas Through Environmentally Friendly Technology." *National Seminar on Animal Husbandry and Veterinary Technology* 2008.