

EMPOWERMENT OF CATTLE FARMER GROUPS THROUGH THE DEVELOPMENT OF COMPOST ORGANIC FERTILIZER AND DIGITAL MARKETING TRAINING TO CREATE A HEALTHY AND PROSPEROUS ENVIRONMENT

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Abstract

The objective of this Community Empowerment Partnership (PKM) activity is to enhance the knowledge and skills of cattle farmer groups in Cilebut Barat Village, Sukaraja Subdistrict, Bogor Regency, in processing accumulated livestock manure waste and converting it into compost organic fertilizer (POK) with economic value, and marketing the product digitally. The programme of study was delivered through a combination of didactic methods, including lectures, video screenings, question-and-answer sessions, practical sessions, and simulations. As a result, farmers gained knowledge and skills in processing cow manure waste. After the training, they were able to produce POK as a new product and market it digitally. Thereafter, the training enabled the production of POK as a new product, which was subsequently marketed digitally.

Keyword: Cattle Farmers, Digital Marketing, Training, POK

INTRODUCTION

Livestock is a very potential business in Indonesia because it is one of the important sub-sectors of agriculture that supports the national economy, especially in the provision of food, income, and employment. This sector includes various types of livestock, such as cattle, buffaloes, goats, and chickens, with potential for Indonesia's favorable natural conditions and climate.

Cattle farming is one of the leading sectors in Indonesia because it plays an important role in the supply of meat and its derivative products, such as milk and cheese. Cattle are generally divided into two types, namely dairy cows and beef cattle. According to data from the Central Statistics Agency (BPS) (2024), the dairy cow population in Indonesia reached 485,809 heads, while beef cattle amounted to 11,749,780 heads.

The large number of cows certainly raises concerns regarding their waste which can have an impact on the environment. A cow can produce 8–10 kg of manure per day, or about 2.6–3.6 tons

per year. If utilized, the manure is equivalent to 1.5–2 tons of organic fertilizer which can reduce the use of inorganic fertilizers while accelerating land quality improvement (Huda & Wikata, 2017). However, if not managed properly, livestock waste can cause air, water, and soil pollution, become a source of disease, increase methane gas emissions, and disrupt environmental aesthetics and comfort (Nenobesi et al., 2017).

That way, a strategy is needed to overcome it, one of which is by changing it to Compostable Organic Fertilizer (POK). Compost has advantages because it is environmentally friendly, able to increase farmers' income, and increase soil fertility by repairing physical damage due to excessive use of chemical fertilizers (Subekti, 2015). In addition, this product can be marketed more widely through digital marketing which is currently growing rapidly in Indonesia. Based on Bank Indonesia data, there will be more than 221 million internet users in Indonesia in early 2024 and the value of e-commerce transactions will continue to rise to reach IDR 487 trillion in 2024 (Kontan.co.id, 2025). This shows the size of the digital market in Indonesia.

Seeing this potential, the development of POK through digital marketing is a new opportunity for cattle breeder groups in West Cilebut Village, Sukaraja District, Bogor Regency. This group itself has been operating for more than 25 years. This productive business is traditionally managed and becomes the main livelihood of local residents. The types of cattle raised include dairy cows, beef cattle, and breeding cattle. Dairy cows produce quality fresh milk that is supplied to yogurt producers and direct consumers. Beef cattle are usually sold ahead of Eid al-Fitr and Eid al-Adha, while breeding cattle aim to regenerate and increase the population. In addition, the community also raises Javanese goats and sheep for aqiqah, qurban, and celebration needs.

However, even though it has been established for a long time, this group still faces a number of obstacles, including a lack of understanding of the dangers of livestock waste to the environment, lack of knowledge in processing cow manure waste into products of economic value, limited capital for operations and processing waste into compostable organic fertilizer, and lack of sales in digital marketing.

MATERIALS AND METHODS

The target of this Community Partnership Empowerment (PKM) activity is a group of cattle farmers in West Cilebut Village, Sukaraja District, Bogor Regency, West Java, as many as 15 people. The implementation of PKM is carried out through increasing the understanding and ability of partners with a community education approach. This service activity aims to learn together, develop potential, and utilize assets owned by the community. The methods used were hands-on teaching and question and answer, involving the active participation of all participants in the training.

Stages of Implementation of Activities

1. Identify Community Needs

This stage is carried out after the interview and socialization process to the target partners, and includes strategic planning and the preparation of the program framework. At this stage, the proposer team and partners jointly set objectives, objectives, and implementation methods. Preparation also involves initial training for students who will be involved in the program, as well as presenting competent resource persons so that the training is more directed in accordance with the targeted achievements.

2. Live Implementation

At this stage, the predetermined method is executed as planned. Activities are carried out both directly in the field and online, according to the needs of the service program. The training includes simulations of organic fertilizer making that are practiced directly by farmers, the packaging design process, and digital marketing training through creating an account on *Shopee*.

3. Partner Participation

Furthermore, partners play an active role in all stages of implementation. This involvement includes providing resources, sharing knowledge and skills, and direct participation in the activities carried out. The participants enthusiastically practiced how to process raw materials for planting media fertilizers and organic fertilizers, as well as took part in training on creating an account in the *marketplace*.

4. Monitoring and Evaluation

In the next stage, periodically, the proposing team and partners will monitor and evaluate the process and results of program implementation. This allows for the identification of necessary improvements and adjustments to strategies to ensure the achievement of objectives.

5. Reporting and Reflection

The final stage involves the preparation of activity reports and joint reflection between the proposing team, partners, and students. It is an opportunity to share experiences, results achieved, and lessons learned during the implementation of the program.

Partner Participation

Partners actively participate as participants in training and mentoring activities. They also prepared the facilities needed to support the development of organic fertilizers and digital marketing training, including the provision of rooms and other supporting facilities.

RESULTS AND DISCUSSION

There are three main problems faced by cattle farmers in West Cilebut Village, Sukaraja District, Bogor Regency.

1. Production field: farmers are not able to process cow manure waste into value-added products. As a result, cow dung accumulates, causing an unpleasant odor, polluting soil, water, and air, and potentially causing disease.
2. Field of management: understanding of business and management functions is still limited, both in terms of planning, organizing, directing, and supervision. In addition, the preparation of cash *flow*, the determination of the cost of production (HPP), and the management system are still carried out traditionally.
3. Marketing field: farmers have not taken advantage of digital marketing media and still rely on conventional sales methods.

To overcome these three problems, three stages of solutions based on the application of technology are carried out. As for the training activities, 15 participants came from the Cattle Breeder Group in West Cilebut Village, Sukaraja District, Bogor Regency.



Figure 1. The practice of making POK from cattle manure waste

First, the processing of compostable organic fertilizer (POK) is carried out by utilizing basic materials in the form of cow dung, burnt husks, sawdust, lime, water, and soil fermented using microorganisms. This POK has two types of compositions, namely for fruit plants with a mixture of 70% goat manure, 20% husk, and 10% soil; and for vegetable crops with a composition of 70% husk, 20% manure, and 10% soil.

This process is carried out by the aerobic method, which is to utilize oxygen so that it does not cause pollution and does not require large land. The aerobic composting method is carried out by watering or spraying the fermenter according to the dosage on a mixture of materials consisting

of dry cow dung with a moisture content of about 60%. To speed up the process, a shredder is used to make straw or other materials such as sawdust, dry leaves, burnt husks, and lime more easily decomposed. Lime also functions to maintain the balance of carbon (C) and nitrogen (N). After being given a fermenter, the material is covered with a tarp for 7 days, then turned over using a *compost aerator* or *turning machine* so that the oxygen is evenly distributed, then closed again. The ideal stack temperature is maintained in the range of 40–60°C, while the humidity is maintained at 50–60% with the help of a sprayer bucket for spraying water or activators. This process is repeated up to three times until the 21st day on the composting drum so that the process is controlled and hygienic.

Second, packaging and packaging are carried out in a more modern way to maintain quality and increase selling value. The finished fertilizer is packaged in sacks or plastic measuring 37 x 50 cm or 45 x 65 cm, then sewn using a sack sewing machine to make it neater, safe during storage and transportation, and look more professional.



Figure 2. Socialization, counseling, and training activities with cattle farmers

Third, digital marketing training through social media and *e-commerce platforms*. The training materials include creating a business account, preparing promotional content, managing an online store in the *marketplace*, uploading products with attractive descriptions, and branding basics to expand market reach.

Kotoran ternak yang sudah di olah sudah menghasilkan produk POK siap jual dan dikonsumsi.



Hasil pelatihan manajemen usaha, mengembangkan keterampilan anggota mitra dalam pengemasan hasil olahan produk. Sistem pengemasan diarahkan kepada pengemasan yang rapi, aman, dan profesional.



Hasil pelatihan e-commerce, membantu mitra membuka toko online di marketplace. Selanjutnya, mitra dapat berjualan online di shopee.



Figure 3. Results of Service Implementation

The impact of POK processing training activities and digital marketing to date shows an increase in the knowledge and skills of cattle farmers. In the production sector, it was recorded that 90% of farmers are independent in processing cattle waste into POK, 70% see opportunities to open new businesses to increase income, and 80% understand fertilizer packaging techniques. In the field of management, 70% of farmers gained insight into good, effective, and efficient business management, including financial recording and calculation of cost of production (COG). Meanwhile, in the field of marketing, 70% of farmers have started to develop marketing through digital media and have an understanding of promotions through websites and paid advertising in the *marketplace*.

CONCLUSION

Community Partnership Empowerment (PKM) activities through training on the processing of cow manure waste into compostable organic fertilizer (POK) and its digital marketing have been carried out well. After training, the farmers are able to independently produce POK. The presence of POK not only helps reduce the accumulation of cow manure waste, but also utilizes appropriate technology to streamline the production process, while expanding marketing through various *e-commerce platforms*.

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