APPLICATION OF DECANTER CAKE TECHNOLOGY IN VEGETABLE CULTIVATION IN THE PERINTIS JAYA WOMEN'S FARMERS GROUP

Made Deviani Duaja[1], Elis Kartika[2], Gusniwati[3], Buhaira[4], Lizawati[5]
[1,2,3,4,5] Universitas Jambi
Email korespondensi: made_deviani@unja.ac.id

ABSTRACT

Every house in KWT Perintis Jaya has a large yard, and many of them are adjacent to oil palm plantations. In general, the back of the house is used to raise cows, chickens, and goats. The front yard of a living stall is typically landscaped with a variety of plants. It reflects the polyculture farming method. Land cultivation is carried out only minimally. Their vegetable plots are usually neither tended nor fertilized. It is evident in the vegetables that are grown sparsely and sold only at weekly markets. Some women farmers fertilize their crops, but only occasionally. It is evident in the meager vegetable crops grown, which are sold only once a week at weekly markets. Some women farmers fertilize their crops, but only occasionally. To increase the yield of vegetables grown by the KWT (Farmers' Group) while still addressing the needs of low-income women, it is necessary to explore alternative organic cultivation methods that do not use chemical fertilizers, thus reducing fertilizer costs. Furthermore, there are palm oil mills in the village, including PT. Muara Jambi Sawit Sejahtera and PT. Agro Jaya Perdana. These mills produce a significant amount of plant-based waste, which, with education and mentoring, can be converted into fertilizer for their crops. The mentoring focuses on producing fertilizer from waste found in the surrounding area. There are two palm oil mills in the village. The most easily transported and decomposed waste is DC (Decanter Cake) treated with Trichoderma sp., which is further enhanced as a biofertilizer, with mycorrhizae being used as a biofertilizer. Activities carried out at the Perintis Jaya KWT involved increasing decanter cake fertilizer and mycorrhizal sp. from starter cultures. Applications in vegetable cultivation. Target: 100 kg decanter cake, 10 kg mycorrhizal propagules, 10 kg Trichoderma sp.

Keywords: *Pandan Sejahtera village; decanter cake; mycorrhiza; bio decomposer*

ABSTRAK

Setiap rumah di KWT Perintis Jaya memiliki halaman yang luas, dan banyak di antaranya bersebelahan dengan perkebunan kelapa sawit. Umumnya bagian belakang rumah digunakan untuk beternak sapi, ayam, dan kambing. Halaman depan kios hidup biasanya ditanami beragam tanaman. Hal ini mencerminkan metode pertanian polikultur. Pengolahan lahan hanya dilakukan secara minimal. Lahan sayuran mereka biasanya tidak dirawat maupun dipupuk. Hal ini terlihat dari sayuran yang ditanam secara jarang dan hanya dijual di pasar mingguan. Beberapa petani perempuan memupuk tanaman mereka, tetapi hanya sesekali. Untuk meningkatkan hasil panen sayuran yang ditanam oleh KWT (Kelompok Tani) sekaligus memenuhi kebutuhan perempuan berpenghasilan rendah, perlu dikaji metode budidaya organik alternatif yang tidak menggunakan pupuk kimia, sehingga

mengurangi biaya pupuk. Selain itu, terdapat pabrik kelapa sawit di desa tersebut, termasuk PT. Muara Jambi Sawit Sejahtera dan PT. Agro Jaya Perdana. Pabrik-pabrik ini menghasilkan limbah nabati dalam jumlah yang signifikan, yang, dengan edukasi dan pendampingan, dapat diolah menjadi pupuk untuk tanaman mereka. Pendampingan ini berfokus pada produksi pupuk dari limbah yang ditemukan di daerah sekitar. Terdapat dua pabrik kelapa sawit di desa tersebut. Limbah yang paling mudah diangkut dan terurai adalah DC (Decanter Cake) yang diolah dengan Trichoderma sp., yang selanjutnya dikembangkan sebagai biofertilizer, dengan mikoriza sebagai biofertilizer. Kegiatan yang dilakukan di KWT Perintis Jaya meliputi peningkatan pupuk decanter cake dan mikoriza sp. dari kultur starter. Aplikasi dalam budidaya sayuran. Target: 100 kg decanter cake, 10 kg propagul mikoriza, 10 kg Trichoderma sp.

Kata kunci: *Desa Pandan Sejahtera; decanter cake; mikoriza; biodekomposer*

INTRODUCTION

Pandan Sejahtera is a village located in the Geragai sub-district, East Tanjung Jabung Regency, Jambi Province. The population of Pandan Sejahtera is 925, with 65.21 percent of the village's population in the productive age group (BPS, 2023). The village community is diverse, consisting of various ethnicities, including Javanese, Malay, and a few Batak. These dynamics foster community development. The majority of residents are farmers, particularly oil palm farmers. Men work on the oil palm plantations, while women primarily cultivate vegetables. The target community for the PPMPI program is members of the Women's Farmers Group, a group of women who cultivate various types of vegetables.

The Perintis Jaya Women's Farmers Group (KWT Perintis Jaya) was established in 2018 and has 55 members. Most of them are wives of oil palm farmers and livestock breeders, and are unemployed. Each house generally has a large yard, many of which are connected to oil palm plantations. The backyard is typically used for raising cattle, chickens, and goats. The front yard of a living stall is generally planted with a variety of plants. It reflects the polyculture farming method. Land cultivation is carried out only minimally. Their vegetable plots are typically neither maintained nor fertilized. It is evident in the vegetables grown haphazardly, which are only sold at weekly markets. Some female farmers fertilize their plants, but only occasionally. To increase the yield of vegetables grown by the KWT while still considering the conditions of the KWT women with low education and income, it is necessary to find alternative cultivation methods that are easy to implement and widely available around the village. Plant fertilizers should be organic, not chemical fertilizers, which can reduce fertilizer costs. On the other hand, there are palm oil mills near this village, namely PT Muara Jambi Sawit Sejahtera, PT Agro Jaya Perdana, and others. These factories produce a lot of plant-based waste that, with guidance and mentoring, they can turn into fertilizer for plant cultivation.

Based on the description above, the problems in the Perintis Jaya KWT are:

1. Vegetable yields on their land are still very low, heavily dependent on inorganic fertilizers. They usually receive government assistance, but when aid is delayed, the plants are not fertilized and are highly reliant on it.
2. Partners are housewives with low levels of education, so they are less likely to seek other initiatives.
3. KWT members have never received training on how to process waste into compost.
4. They need to reduce their dependence on assistance from anywhere because they can work independently.
5. KWT members are unaware of the waste from palm oil mills and whether it can be used in their vegetable business.

The method used is community education through:

1. Holding lectures on decanter cake technology for processing into solid fertilizer using brochures/leaflets and an infocus at the village office.
2. Holding discussions, questions, and answers about decanter cake fertilizer technology and how to ferment it.
3. Demonstrating how to use the purchased biodecomposer, EM4.
4. Applying EM4 biodecomposer to the decanter cake to produce solid fertilizer/compost.
5. Applying decanter cake fertilizer to vegetable fields.
6. Regular monitoring through site visits to the demonstration plot.

Table 1. Type of activity, Executor and Partner Contribution

No	Type of activity	Executor	Partner Contribution
1	Gathering all members of the Women Farmers Group/KWT		√
2	Preparing a venue for guidance and counseling (DEMPLOT), inviting all KWT members and village officials		√
3	Prepare the materials and tools needed for the demonstration plot. Materials: 1. Fresh decanter cake(Duaja et al., 2024) 2. Biodecomposer 3. Making a vegetable bed for the demonstration plot	√	√
4	Plot demonstration process	√	
5	Supervision every two weeks/monitoring	√	√

IMPLEMENTATION METHOD

1. The Rural Participatory Approach (RPA) is used, a method that actively involves the community in every stage of the PPM activities (Chambers, 1994). This ensures that the material provided can be understood and implemented, particularly regarding the application of decanter cake Plus technology for vegetable crops(Duaja, et al., 2019).
2. The advantage of using this method is that partners play an active role, with the team acting as facilitators, providing guidance and understanding, as well as assistance in establishing seedling houses and demonstration plots for vegetable crops.
3. The main activity is mentoring in the form of demonstration plots, which begins with community education through:
   - Conduct a lecture on decanter cake plants and how to make them effectively, using brochures/leaflets and an Infocus at a venue provided by the partner.
   - Hold a discussion and Q&A session on the biodecomposer Trichoderma sp., including the tools and materials needed (as provided in the lecture and demonstration materials).
     - Demonstration of how to make solid decanter cake (compost), Mycorrhizae sp., and Trichoderma sp.
     - Application of decanter cake and Mycorrhizae fertilizer to vegetable crops (Duaja et al., 2020).

Table 2. Results Of Activity Implementation

No.	Type of activity	Number of members present
1	Gathering all members of the Women Farmers Group/KWT	30 people
2	Preparing a venue for guidance and counseling (DEMPLOT), inviting all KWT members and village officials	The KWT chairman has done this.
3	Prepare the materials and tools needed for the demonstration plot. Materials: 1. Fresh decanter cake 2. Biodecomposer 3. Making a vegetable bed for the demonstration plot.	This has been done by the KWT chairman.
4	-Plot demonstration process 1. Making decanter cake fertilizer from fresh decanter cake using biodecomposers. 2. Application to vegetable crops of the Perintis Jaya Farmers Group (KWT)	20 people
5	Supervision every two weeks/monitoring	2 people Take turns every day because they also harvest kale. The other members prepare the land for replanting.

DISSCUSION

The empowerment activities of the Perintis Jaya Women Farmers Group (KWT) through the application of decanter cake (DC) as an organic fertilizer, accelerated by a biodecomposer, demonstrated a high level of group participation and independence. The presence of 30 members at the initial collection activity demonstrated collective commitment and social readiness to accept cultivation innovations. The involvement of KWT administrators in preparing the site (DEMPLOT), inviting village officials, and securing materials/tools (fresh DC, biodecomposer, and bed preparation) demonstrated program ownership at the community level—a crucial factor for sustainability.

Technically, the demonstration plots (Demplots) were implemented in two core stages: (1) making fermented DC fertilizer from fresh DC using biodecomposers; and (2) applying it to the KWT's vegetable crops. The involvement of 20 members during the demonstration plot process was representative of skills transfer, although not all members were present. It can be interpreted as a division of roles—some members focused on practical preparation and application, while others handled ongoing gardening, thereby strengthening operational efficiency.

The biweekly monitoring scheme, with two people in charge rotating daily, aligned with the KWT's work rhythm, especially since the kale harvest took place daily and some members were preparing the land for replanting. This pattern demonstrated good integration between the technology trial (fermented DC) and the daily farming cycle, meaning the innovation did not disrupt ongoing production but instead complemented it by adding organic fertilizer options. From a learning perspective, the rotation of supervisors provided an opportunity for equitable capacity-building among members while maintaining consistent record-keeping (application date, dosage, and plant condition).

CONCLUSSION

Socially, the full involvement of the KWT strengthens networks and solidarity. The presence of village officials during the preparation phase enhances the program's legitimacy and opens opportunities for further support (e.g., chopping tools, harvest tents, or additional funding for demonstration plots). Economically, the frequency of daily kale harvests indicates rapid cash flow, so adopting the relatively low-cost DC fermentation system could reduce fertilizer costs and increase business margins—provided agronomic performance is positive.

Overall, implementation results demonstrate a strong institutional foundation, adequate technical execution, and an adaptive monitoring scheme.

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