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ARTICLE

ORGANIC WASTE MANAGEMENT THROUGH A COMPOSTING WORKSHOP TO INCREASE ECOLOGICAL AWARENESS OF PANDANREJO RESIDENTS

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Abstract

Environmental issues in rural areas remain a serious challenge. Improperly managed waste can lead to environmental pollution. Waste management can transform it into economic and ecological value, such as by converting organic waste into compost. This waste management program is implemented through a participatory and educational approach. This waste workshop aims to raise public awareness of the importance of proper organic waste management. Long-term collaboration between the government, educational institutions, and communities is essential to ensure composting becomes more than a temporary activity but a part of people's lifestyles.
Keywords: Compost, Compost workshop, Organic Waste.

A. INTRODUCTION

Environmental issues in rural areas remain a serious challenge, particularly in managing household waste, which is dominated by organic waste such as food scraps and leaves (Oktavilia et al., 2024). Poorly managed organic waste tends to accumulate, causing soil pollution, unpleasant odors, and the potential for the development of disease vectors (Qurratu'aini et al., 2024). Furthermore, the practice of burning waste, still practiced by rural communities, actually increases air pollution and degrades environmental quality (Darmaraja et al., 2024).

However, when managed properly, organic waste has economic and ecological potential, especially when processed into compost. Composting not only plays a role in reducing waste generation but can also be a source of natural fertilizer for agricultural and garden plants (Hastuti et al., 2024). Unfortunately, the adoption rate of composting methods in villages remains low, partly due to a lack of community knowledge and skills in organic waste processing (Andriani et al., 2022).

This situation was also found in Pandanrejo Village, Rejoso District, Pasuruan Regency. This village is an agricultural area with quite active farming and livestock activities. However, based on initial observations during the Community Service Program (KKN), most residents still mix organic and inorganic waste without sorting. Kitchen waste, crop residue,

and leaves are often simply dumped in gardens, burned, or left to pile up, creating odors and attracting insects. This situation indicates a low level of community awareness of the importance of environmentally friendly waste management.

This lack of ecological awareness is a major problem in waste management in this village. However, with active community involvement, organic waste can be used as compost, which is useful for supporting residents' agricultural activities. Furthermore, participatory management can be a concrete solution to realizing a clean and sustainable village (Andriani et al. 2022).

The Community Service Program (KKN) plays a strategic role in bridging this gap through an educational, participatory, and community empowerment approach. Training on waste processing into compost conducted by university students has been shown to increase community knowledge and trigger changes in environmental behavior (Azza and Istighfarrani 2025). In some villages, composting programs have successfully reduced waste volume by 40–50% and increased compost utilization for local agricultural purposes.

However, measuring the success of a composting program cannot be seen solely from a technical perspective. It also requires increased community ecological awareness, encompassing understanding, participation, and sustainable environmentally friendly behavior (Wikandaru et al. 2024).

B. LITERATURE REVIEW

Environmental Awareness Theory

Environmental awareness or ecological awareness describes an individual's recognition of environmental conditions, along with the consequences of human behavior on ecosystem sustainability (Isik A, 2024). This theory explains that for humans to have an attitude and spirit that cares about their surroundings, they must have basic environmental knowledge. Direct experience, information, and education that people receive about environmental issues will influence their ecological awareness (Ali et al., 2023). When people are in a situation where they understand the benefits and risks of their environment in concrete terms, they will instill an orientation within themselves to always act to protect the environment (Marsh & Williams, 2023). This theory also explains how composting waste has a positive impact in increasing public attention and involvement in biodegradable or organic waste management activities.

Environmental Education Theory

Environmental education is a learning process that improves the understanding, skills, and attitudes of students to act responsibly towards the environment (Syaban M, 2018). This theory posits that learning that integrates experiences will help individuals develop a deeper understanding of environmental issues. The cognitive, affective, and psychomotor aspects of the community can be strengthened through practical activities such as composting (Rahmayanti et al., 2025). Environmental education strongly emphasizes two aspects: behavioral change arises not only from knowledge but also directly from ecological activities.

Ecological Actor Theory

Ecological behavior refers to individuals' conscious actions in protecting, caring for, and preserving the environment through long-term and sustainable practices (Labobar & Kapojos, 2023). Pro-environmental community behavior is influenced by attitudes, norms, social context, knowledge, and self-perceptions of self-efficacy (Asdami et al., 2024). Intentions and direct actions to protect the environment are consistently strengthened by people's direct experiences and active involvement in environmental activities (Nainggolan et al., 2024). Reducing waste use and maintaining soil fertility through composting will provide tangible benefits to the community in their daily lives (Juniartini N, 2020).

C. RESEARCH METHODOLOGY

The research method for the organic waste composting program in Pandanrejo Village was conducted through a participatory and educational approach. The program began with observation and identification of environmental problems faced by the local community, particularly related to the generation of poorly managed organic waste. The Community Service Program (KKN) team conducted an initial survey to collect data on community consumption patterns and waste disposal habits, and identified locations with high levels of waste accumulation. In addition, the team conducted interviews with village officials and representatives of community groups such as Community Self-Help Groups (KSM) and farmer groups to understand the challenges faced in organic waste management. The data obtained from this observation phase served as the basis for designing an appropriate approach to implementing the waste composting program.

D. RESULT AND DISCUSSION

Organic Waste Management Through a Compost Workshop

The "Turning Organic Waste into Quality Compost" workshop, held on Thursday, July 10, 2025, was attended by women from the Family Welfare Movement (PKK) in Pandanrejo Village and focused on raising public awareness about managing household waste, commonly referred to as organic waste. This is supported by data from the National Waste Management Information System (SIPSN) of the Ministry of Environment and Forestry (KLHK) in 2023, which showed that 60.44% of waste came from household activities, followed by 11.63% from market activities. The Pasuruan City Environmental and Forestry Agency (DLHKP) reported that almost 70% of waste in Pasuruan City is organic. This is due to the accumulation of waste without proper fermentation, with household waste always ending up in trash bins, burned, or washed into rivers. This results in an unsightly village environment, an outbreak of dengue fever, and other environmental pollution.

The limited information received by the community regarding the use of organic waste has resulted in their limited ability to manage it. Many residents still lack understanding of how to process organic waste into compost. Therefore, comprehensive and ongoing outreach and education efforts are needed to ensure the community has adequate knowledge about waste management and is encouraged to manage household waste independently from the source (Wahyudin et al. 2023).

As a concrete form of community service, we held a compost workshop as a small step towards change in Pandanrejo Village. The goal was to raise public awareness about the importance of proper organic waste management and transform organic waste, initially without commercial value, into a promising resource when managed correctly. Through this workshop, the community was equipped with the knowledge and skills to process organic waste into a useful fertilizer. In addition to supporting sustainable waste management and reducing the burden on landfills, the resulting compost is also expected to improve soil quality and support agricultural activities and environmental reforestation. Thus, this workshop served not only as an educational tool but also as a catalyst for behavioral change in the community toward more environmentally friendly and sustainable management.

This activity was divided into three sessions: presentation of materials, practical exercises, and a question-and-answer session. The material presented was "Organic Waste Management (Household Waste and the Like)" which began with a brief discussion of organic waste and composting, followed by practical demonstrations of its manufacture, which required tools in accordance with the PPT Material. During the presentation, residents were very enthusiastic about paying attention to managing their household waste. In this case, the resulting fertilizer is dry compost with ingredients in the form of raw vegetable waste,

soil, and EM4 liquid which is fermented in a tightly closed gallon for 40 days for maximum results.

Figure 1. Presentation of Composting Material

In the presentation, compost itself is defined as the result of the decomposition of organic waste, leading to the improvement of natural resources and emission control. Compost is the safest fertilizer for the environment because it is made from organic materials and is processed using microorganisms (Wahyudin et al. 2023).

Waste and garbage management is a lengthy process, requiring careful attention to technical and administrative aspects. The workshop used the EM4 method, which involves the use of an EM4 (Effective Microorganisms 4) solution as an activator to accelerate the organic material reduction process. Therefore, management must be effective and efficient, involving the community as community-based environmental managers. This situation requires public awareness to participate in waste management in their communities, ensuring that community groups are responsible resources and the primary actors in waste management (Wahyudin et al. 2023).

Ecological Awareness of the Pandanrejo Village Community

Ecological awareness is a fundamental aspect of sustainable environmental conservation efforts. In Pandanrejo Village, the composting program initiated through the Community Service Program (KKN) activities has become a starting point for encouraging changes in the community's perspective and behavior toward organic waste. Before the intervention, most residents considered household waste to be discarded or burned. This aligns with findings (Azzahra et al. 2022), which indicate that rural communities in East Java still have minimal understanding of sustainable organic waste management.

The implementation of a composting workshop using participatory methods has proven to be highly engaging for residents, particularly during the hands-on session using used gallon jugs as compost containers. Participants' active involvement in the training fostered initial awareness of the economic and ecological potential of kitchen waste, such as vegetable scraps, leaves, and food scraps that were previously discarded. This cognitive change was marked by a growing desire to try composting independently at home.

However, this increased awareness has not yet fully transformed into habits. Although public understanding of the benefits of composting has improved, its implementation in daily life still faces challenges. Residents who were initially enthusiastic during the training later encountered obstacles such as a lack of supporting facilities (compost containers, sorting tools), a lack of reminders or community motivators, and the absence of a follow-up mentoring system. Studies in Selosari (Fadli et al. 2025) and Kebakalan, Sidoarjo

(Qurratu'aini et al. 2024) reinforce this finding, suggesting that changes in knowledge do not automatically lead to changes in behavior without adequate structural and social support.

Pandanrejo's ecological conditions, surrounded by fertile agricultural land and natural water sources, offer significant potential for the implementation of environmentally friendly practices. Unfortunately, waste burning is still common, causing air pollution and demonstrating a previously weak ecological awareness. After the composting education program was implemented, changes began to be seen, such as increased community participation in maintaining a clean environment. This aligns with place-based environmental learning approaches, such as those implemented in ecovillage communities (Pisters, Vihinen, and Figueiredo 2020), where direct involvement in environmental activities can foster awareness and significantly change community behavior. However, the changes that occurred were episodic, strengthening during the training phase but weakening after the activity ended. The emerging ecological awareness has not yet fully transformed into collective routines. Factors such as busy households, the absence of neighborhood association (RT/RW) policies, and the lack of the formation of support groups such as composting communities or environmental cadres are key obstacles. Establishing an ecological culture in Pandanrejo requires strengthening strategies, including long-term mentoring, the provision of simple tools (compost buckets, sorting bins), and the active involvement of local groups such as the Family Welfare Movement (PKK) and neighborhood leaders as agents of change. A case study in Karimunjawa Village demonstrates the success of environmental programs when women in the Family Welfare Movement (PKK) are actively involved in household education and community motivators. (Wikandaru et al. 2024).

Overall, the composting program in Pandanrejo Village has raised ecological awareness in the community, but has not yet fully transformed into sustainable ecological behavior. To ensure this awareness is not just a fleeting phenomenon but transforms into a collective village culture, ongoing collaboration between the government, educational institutions, and the local community is needed.

E. CONCLUSION

The composting workshop held on July 10, 2025, in Pandanrejo Village successfully raised awareness among the community, particularly the women's groups of the Family Welfare Movement (PKK), about the importance of managing household organic waste. Given the high percentage of household waste that remains unmanaged, this activity provided education and hands-on practice on how to process organic waste into compost using the EM4 method. The workshop demonstrated that a participatory, hands-on approach can increase community understanding and enthusiasm for environmentally friendly and economically valuable waste management. To achieve consistent behavioral change and foster a village ecological culture, further efforts are needed, including strengthening community capacity, providing supporting facilities, and actively involving local groups such as the PKK and community leaders as agents of change. Long-term collaboration between the government, educational institutions, and the community is essential to ensure that composting becomes more than a temporary activity but an integral part of the Pandanrejo Village community's lifestyle, leading to a cleaner, healthier, and more sustainable environment.

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PKK women and all residents of Pandanrejo Village who actively participated in this organic waste management workshop. Finally, the author also thanks the entire community service team for their cooperation and support in implementing this program, ensuring its smooth running. Hopefully, this activity will benefit the community and be the first step towards realizing a clean and sustainable village environment.

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