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Training To Recycle Organic Waste Into Compost

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ABSTRACT

Background. This Community Service Program (PPM) can help people who still leave or throw away a lot of rubbish, of course organic waste, to better utilize and manage the remaining waste potential for now.

Purpose. Organic waste itself means materials that are discarded or destroyed from sources of human activity or natural processes, which do not yet have economic value and whose existence is no longer needed or utilized by humans.

Method. This activity aims to provide training to overcome the problem of organic waste produced in the environment and provide knowledge and skills to the community to process organic waste which is useful and valuable by making compost from organic waste.

Results. The community service program in Nyangkring Hamlet, Cangkring Village, Malang has been successfully implemented. All activities carried out were welcomed by the people of Nyangkring Hamlet, Cangkring Village, Malang. This socialization activity can raise public awareness of the environment, especially waste issues. Making samples of organic waste recycling can run smoothly so that training can be demonstrated during training..

Conclusion. Based on the results of community service activities, it can be concluded that community service activities provide additional insight and skills to the residents of Nyangkring Hamlet regarding organic household waste processing and encourage Tinggar village youth to be more sensitive to the environment regarding organic waste separation. It should be noted that this activity does not stop when the activity is carried out. However, this activity can be implemented and carried out with other parties in different places, times and circumstances.

KEYWORDS

Compost, Organic Waste, Recycling

INTRODUCTION

Waste recycling is a process in which used or waste materials are converted into new materials that can be reused. The aim of recycling is to reduce the amount of waste that goes to final disposal sites (TPA), conserve natural resources, reduce pollution, and protect the environment. (Rasyid & Hasibuan, 2022). In Nyangkring itself, there are still many people who throw leftover materials into the trash or into the river, which can also cause disease because it has been mixed with water (Chen dkk., 2020; Shan dkk., 2021). And this rubbish is just thrown away and left to pile up without proper sorting and processing.

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Therefore, it is hoped that this PPM activity can help the residents of Nyangkring Hamlet, where there is still a lot of organic waste around them, to be able to utilize and manage organic waste from rubbish that has only been left behind. We can start this program with residents' household waste so that organic waste is sorted first because so far residents have only thrown leftover kitchen or natural ingredients into the trash and just burned it. Waste itself can be defined as objects that are unused or no longer wanted and must be thrown away, these objects are produced by human activities (Ding dkk., 2021; Liu dkk., 2020; O'Connor dkk., 2021). Waste is a classic problem in developing countries like Indonesia, high population density and increasing human activity cause an increase and variation in the amount of waste produced.

Based on the situation analysis, the residents' problems are as follows:

1. There is separation of organic and inorganic waste in the community.
2. the emergence of organic waste from around residents' homes which has not been processed and recovered.
3. The community's ignorance in responding to the problem of organic waste
4. The community does not know how to use and compost organic waste properly and correctly.

In 2018, 60% of waste was generated from organic waste, 9% from paper waste, 4.3% from metal waste, 12.7% from glass, wood and other materials. The Ministry of Environment and Forestry (KLHK) announced that in 2019 the amount of waste nationally was 175,000 tons per day, namely 64 million tons per year, here it is assumed that 0.7 kilograms of waste is generated per person per day. The composition of the types of waste produced is 50% organic waste (food and vegetable waste), 15% plastic waste, 10% paper waste, then the remaining waste comes from metal, rubber, cloth, glass and others. (Wahyuni dkk., 2019).

RESEARCH METHODOLOGY

This activity was carried out with the title 'Organic waste recycling training in Nyangkring Hamlet, Cangkringmalang Village' which corresponds to the title of processing household waste that is no longer used or leftover household materials that will be recycled into compost (Manu dkk., 2021; Wei dkk., 2021; Y. Zhu dkk., 2021). This service aims to reduce waste in society, and this management uses qualitative methods. (Irawati dkk., 2021). From Nyangkring hamlet, Cangkring Malang is administratively located in Beji District, Pasuruan Regency. Nyangkring Hamlet is approximately 18 kilometers from the Nahdlatul Ulama Sidoarjo University (Unusida) campus. Road access is good and smooth with a travel time of less than 33 minutes from Unusida using a motorbike as shown in the following picture:

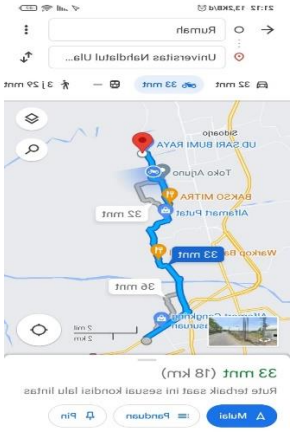

Figure 1. Distance from Nyangkring Hamlet to Nahdlatul Ulama University Sidoarjo

This organic waste processing equipment consists of a tool which is a place for the composting process. The rotting process drum is equipped with a filter in the middle, so that liquid and solid fertilizer results can be obtained directly (Al-Tohamy dkk., 2022; Yang dkk., 2020; F. Zhu dkk., 2021). The composting process used is aerobic, so mixing can be done yourself, not with a machine. As a complement, EM4 solution, gloves, shovel, thermometer, scissors are also included. Processed organic waste capacity up to 8 kg. (Arita dkk., 2019).

Figure 2. Process of making peanut brittle

The following are recycled materials for making compost:

1. Household waste (can be leftover food or used vegetables)
2. Soil
3. Enough water
4. Charcoal husk
5. EM4 liquid fertilizer as an addition

This composting tool uses simple tools that are often found near residents. This tool can be run manually. This means that the process of chopping, throwing into the barrel/bucket, administering EM4, mixing and rotating is done by hand (Atelge dkk., 2020; Ibn-Mohammed dkk., 2021; Khoshnevisan dkk., 2021). Decomposing organic waste is needed to speed up the composting process. Stirring and turning are necessary so that the bacteria that support the composting process remain active. This composting process takes 20-40 days and is turned over every 3 days.

In general, the benefits of activities in Nyangkring Hamlet are as follows:

1. Inform the residents of Nyangkring Hamlet about the use of organic waste.
2. Socialization and training on organic compost making techniques.
3. Tell residents what the benefits of compost are.
4. Socialize the benefits that residents can obtain from utilizing environmental health and processing organic waste.
5. Adding to the local economy after knowing how to make compost using organic waste and then selling it. (Arita dkk., 2019)

RESULT AND DISCUSSION

The community service program in Nyangkring Hamlet, Cangkring Village, Malang has been successfully implemented. All activities carried out were welcomed by the people of Nyangkring

Hamlet, Cangkring Village, Malang. This socialization activity can raise public awareness of the environment, especially waste issues (Khan dkk., 2021; Roychand dkk., 2020; Yin dkk., 2020). Making samples of organic waste recycling can run smoothly so that training can be demonstrated during training (Maf'ulah dkk., 2021)

The results of this community service activity are as follows:

a. Increase the knowledge and skills of training participants, especially Nyangkring hamlet residents, in the field of household waste disposal that can be turned into compost after the training is carried out in Nyangkring hamlet.
b. Adding economic value to the community by being able to sell compost as a material and creative waste processing derivatives, especially compost fertilizer.
c. Make it easier for residents to make good use of household waste, for example recycling organic waste into compost and selling the processing results.
d. The reaction of the participants who attended this training was very positive, because the participants felt the benefits and impact of this training on household waste management and were able to apply it in the environment where they live (Astuti, 2020)

Figure 3. Socialization of waste recycling

This socialization activity was held at the Nyangkring hamlet hall and was attended by approximately 10 participants and one of the participants asked about 'how much benefit does compost have for plants' and many of these activities were unable to attend because they still considered recycling organic waste to be complicated because everyone chose the instant method. by buying compost. (Shitophyta dkk., 2021)

Figure 4. Participants practice making compost

Cutting organic waste aims to reduce the size of waste in the area which affects residents' activities (Jeyasubramanian dkk., 2021; Zamri dkk., 2021). And what was previously organic waste thrown away in landfill can now be used to make compost.

CONCLUSION

Based on the results of community service activities, it can be concluded that community service activities provide additional insight and skills to the residents of Nyangkring Hamlet regarding organic household waste processing and encourage Tinggar village youth to be more sensitive to the environment regarding organic waste separation. It should be noted that this activity does not stop when the activity is carried out. However, this activity can be implemented and carried out with other parties in different places, times and circumstances.

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AUTHORS' CONTRIBUTION

Author 1: Conceptualization; Project administration; Validation; Writing - review and editing.
Author 2: Conceptualization; Data curation; In-vestigation, Resources; Visuali-zation; Writing - original draft.

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