



Household Organic Waste Management With The Biocomposter Method

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ABSTRACT

Organic waste is the type of waste that is most widely disposed of by the community, where this organic waste has a high water content so that it decays quickly. When rotting organic waste creates a foul odor that can cause environmental pollution and become a source of disease. Based on data from the National Waste Management Information System (SIPSN) in 2021, waste generation from 203 districts / cities throughout Indonesia was 63.873.48 tons / day and reached 23.350.282.36 tons / year with a composition of 41.4% consisting of household waste. In 2020, it is estimated that the waste generated in North Sumatra Province is 4.526.11 tons/day and reaches 1.652.031.12 tons/year with Medan city as the largest waste-producing area at 622.206.89 tons/year. Meanwhile, in 2021, the estimated waste generated in North Sumatra Province is 3.907.91 tons/day and reaches 1.426.386.78 tons/year with Medan city as the largest waste-generating area, which is 645.012.56 tons/year, which means that despite the decrease in waste generation in the North Sumatra region, the waste generated by Medan city still increases by 22.805.67 tons/year. It is estimated that every household in Indonesia can produce as much as 0.52 kg/life/day of waste. Utilization of organic waste that is generated from domestic activities can be done such as making compost through the biocomposter method. The purpose of this community service activity is to increase the knowledge and ability of the community regarding the management of household organic waste by making it compost as an effort to reduce the volume of waste. The method used is counseling which will be carried out by the team with a discussion and question and answer method for the introduction of the activities to be carried out, and there is also a PreTest activity given by the team to the participants present to assess the level of knowledge of the participants regarding waste management, then training in making compost with household organic waste materials.

Keyword: Organic Waste, Biocomposter Method, Housewife

1. Introduction

Waste is a very complicated problem, especially in Indonesia, where waste has not been managed properly, coupled with the rapid growth of Indonesia's population, especially in urban areas, resulting in an increase in the amount of waste. So far, waste has only been moved from the source of waste to a wider place, namely to landfills with an open dumping system in landfills. Coupled with the lack of public awareness of the importance of disposing of waste properly, especially organic waste. Organic waste is the type of waste that is most widely disposed of by the community, where this organic waste has a high water content so that it decays quickly. When rotting organic waste causes a foul odor which can cause environmental pollution and become a source of disease (Ekawandani & Kusuma, 2018).

Based on data from the National Waste Management Information System (SIPSN) in 2021, waste generation from 203 districts / cities throughout Indonesia is 63.873.48 tons / day and reaches

23.350.282.36 tons / year with a composition of 41.4% from households, 6.8% from offices, 15.9% from traditional markets, 19.5% from commercial centers, 6.8% from public facilities, 6.3% from areas and 3.4% from others. Based on the type of waste, Indonesia's waste composition consists of 27.9% food waste, 12.4% wood/branches/leaves, 12.1% paper/cardboard, 15.9% plastic, 6.6% fabric, 6.6% glass, 7% metal, 3.6 rubber/leather and 7.9% other. It can be seen that household waste is generated more than other waste (SIPSN, 2022).

In 2020, it is estimated that the waste generated in North Sumatra Province is 4.526.11 tons/day and reaches 1.652.031.12 tons/year with Medan city as the largest waste-generating area at 622.206.89 tons/year. Whereas in 2021, the estimated waste generated in North Sumatra Province is 3.907.91 tons/day and reaches 1.426.386.78 tons/year with Medan city as the largest waste-generating area, which is 645.012.56 tons/year, which means that even though there is a decrease in waste generation in the North Sumatra region, the waste generated by Medan city still increases by 22.805.67 tons/year.

It is estimated that every household in Indonesia can produce as much as 0.52 kg / person / day. Utilization of organic waste, which is generated from domestic activities, can be utilized such as making compost through the biocomposter method (Yeni et al, 2020).

With this situation, it is necessary to manage waste better, so that there is no accumulation that can cause damage to the environment, namely in terms of health. As one way of utilizing this waste is to manage it into compost that can be used for farmers, as a natural fertilizer that can be an option as an environmentally friendly fertilizer. ((Ekawandani & Kusuma, 2018).

Problems of Cooperation Partners

The partner problem found is that the increasingly high waste piles in Medan city accompanied by the lack of knowledge and public awareness of good waste management is a concern, where organic waste is usually just thrown away without processing first. Whereas if processed into compost, the organic household waste will reduce the volume of waste and can be more useful, for example as fertilizer for potted plants.

This service activity is in line with the goal of achieving SDG's number 3, namely healthy and prosperous life, namely ensuring a healthy life and improving the welfare of all residents of all ages. Household organic waste management can reduce the volume of waste so that better health is realized and also has a profitable economic value.

Objective: to increase the knowledge and ability of the community regarding the management of household organic waste by making it into compost as an effort to reduce the volume of waste.

2. Implementation method

Referring to the partner's problems, the method of activity implementation is as follows:

1. Partner Issues

The higher waste generation in Padang Bulan Selayang I Village accompanied by a lack of knowledge and public concern for good waste management is a concern, where organic waste is usually just thrown away without prior processing. One of the alternative solutions that can be provided is by providing counseling and training to the community regarding good waste management and processing waste into compost in the hope that people's behavior will change to become more concerned about the importance of waste management.

2. Implementation method

In achieving the target and output of this community service activity, several approach methods will be carried out as follows:

- Counseling conducted to partners. The counseling was carried out by the service team using the discussion and question and answer method for the introduction of the activities to be carried out, and there was also a PreTest activity given by the team to the participants who were present to assess how much knowledge the participants had about waste management.

- After that, training on composting with the basic ingredients of household organic waste such as vegetables and fruits was given to the community as an effort to process waste.
- Furthermore, to see the success of this program, the team will provide a post test that will be filled in by participants to see if their knowledge has increased after being given counseling.
- Evaluation of Outcome Indicators
To measure the achievement of the targets and outcomes of community service activities, an evaluation of the achievement indicators will be carried out in accordance with the output target by involving the team and also partner.



Student Involvement (6 students involved)

In the implementation of this community service, students are involved in preparing the composting site, teaching media and coordinating the women who will take part in the composting training.

Activity Implementation

The implementation of activities carried out for problem solving include:

1. Preparation (preparation of activities and cooperation) between the service team and the partners involved.
2. Socialization of service activities, namely an explanation of the activity training plan socialization of household organic waste management with the composting method.
The socialization of service activities is given to all communities who are participants in this service activity in Padang Bulan Selayang I Village.
3. Establishment and training of composting coordinators
The coordinator was formed with the aim that the composting training activities that will be carried out later will run smoothly.

Work Procedure

1. Provide training to the coordinator about the activity in terms of the objectives and technicalities of this service activity. Training was also provided on making compost from household organic waste.
2. Provide training to the coordinator about the activity in terms of the objectives and technicalities of this service activity. Training was also provided on making compost from

household organic waste.

3. Providing facilities in the form of composting tools and materials
4. Implementation of composting training

This activity was carried out at a time agreed upon by the participants and the coordinator. The method used in making compost is the composting bag method, which is a new method of processing organic waste using a container called a *compost bag*. The tools needed in making compost include:

- bucket
- machete,
- measuring cup,
- scales.

For the material is:

- household organic wet and dry waste (vegetables, fruits, leaves),
- land
- bioactivator (EM4)
- molasses (coconut water, brown sugar solution, sugar cane water).

The stages of the composting process include:

1. Prepare tools and materials
2. Shred organic waste into small sizes to make it easy to decompose. The smaller the size of the waste, the faster it will decompose.
3. Put soil into the compost bag as the first layer
4. Put the shredded waste in the second layer.
5. Add molasses (250ml/1kg waste) and EM4 mole liquid (4 bottle caps/1 kg waste).
6. Stir all the waste that has been added with mole and molasses evenly
7. Close the bag compos and place it in an undisturbed location.
8. Check and stir the compost regularly, at least once a week for 4 weeks.

Partner Participation Contribution

The partner, namely the Head of Kelurahan, is asked to actively monitor the implementation of the socialization of household organic waste management with the composting method by inviting the community in the puskesmas working area to actively participate in the entire series of activities. After the service activities are completed, it is hoped that the partners can continue the activities that have been carried out by the service team to provide socialization of household organic waste management with the composting method.

3. Results and Discussion

This service activity begins with a series of activities:

1. Socialization of service activities, namely an explanation of household organic waste processing with the biocomposter method to increase community knowledge related to community waste management related to household organic waste processing with the biocomposter method. This socialization activity went well with the contact person of the Head of the Village, Village Staff and PKK mothers in Padang Bulan Selayang I Village.
2. Waste management education
Waste management education was delivered by the service team about the knowledge of choosing organic and inorganic waste properly, the importance of waste management to be applied in everyday life. This educational material is also reinforced by the results of previous research that has successfully carried out good waste management behavior with reduced piles of garbage in Padang Bulan Selayang I Village.
3. Delivery of educational materials

It can be seen the enthusiasm of the PKK mothers to hear the presentation delivered by the team. Some of the women asked a lot of questions about things they did not know, and also asked about how to sort waste.

4. Training on how to make compost using the biocomposter method
This training was delivered by the team to the PKK mothers participating in community service so that they could apply it directly in their daily lives at home after the service was completed. Almost all PKK women are not accustomed to making compost so that the training given in a simple way makes it easier for the PKK women to practice it again.
5. Training Pre test and Post test
This training is carried out before exposure and after exposure, pre-test and post-test are tests conducted by the team to measure the initial ability to participants who attend before participating in socialization activities and tests conducted after participants participate in socialization activities.

Activity Scheduling

The event was held at 09.00 at the PB Selayang 1 Kelurahan Office.

The scheduling of activities is as follows

- 09.05 Opening by MC
- 09.15 Remarks from the Representative of Mrs. PKK Kelurahan PB Selayang 1
- 09.15 Opening remarks by Dr. Devi Nuraini Santi, M.Kes as FKM USU lecturer and responsible for community service
- 09.25 Submission of material processing of household organic waste using biocomposter
- 09.50 Handover of organic waste chopping machine to PB Selayang 1 Urban Village
- 10.00 Composting demo
- 10.45 Giving gifts to participants
- 11.00 Closing by MC

Activity Implementation

In achieving the target and output of this community service activity, several approach methods will be carried out as follows:

- Counseling conducted to partners. Counseling conducted by the service team using the method of discussion and question and answer for the introduction of activities to be carried out.
- After that, training on composting with the basic ingredients of household organic waste such as vegetables and fruits was given to the community as an effort to process waste.
- Further questions and answers to participants to increase knowledge related to organic household waste processing.
- Evaluation of achievement indicators to measure the achievement of the targets and outcomes of community service activities, an evaluation of the achievement indicators will be carried out in accordance with the output targets by involving the team and partners.

Activity Evaluation

To measure the achievement of the targets and outcomes of community service activities, an evaluation of the achievement indicators is carried out in accordance with the output target by involving the team and partners.

4. Conclusion

1. Community service activities can increase their knowledge and skills in making compost from

organic waste.

2. This service activity has the potential to increase public awareness of the importance of environmental cleanliness, from this education they become aware of small things such as sorting garbage properly and can realize a healthy and clean living environment.
3. This service activity can make a reduction in household waste and organic waste so as to reduce environmental pollution.

Recommendation

1. It is hoped that the community can begin to change their habits in sorting organic and inorganic waste and reduce burning waste that can pollute the environment.
2. It is hoped that the Head of the Kelurahan will provide support in the application of household organic waste processing with this biocomposter in Padang Bulan Selayang I Kelurahan.

5. Acknowledgements

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