

Training Pembuatan Eco-enzyme pada Anggota Dasawisma XI Desa Banyuraden

Eco-enzyme Produce Training for Dasawisma XI members in Banyuraden Village

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Abstrak

Pengelolaan sampah masih menjadi topik hangat dalam pembahasan permasalahan lingkungan, karena pertumbuhan produksi sampah yang sangat tinggi sementara pemanfaatannya belum maksimal. Pertumbuhan penduduk Indonesia yang pesat juga mengakibatkan jumlah sampah terus meningkat. Sampah organik merupakan salah satu jenis sampah yang jumlahnya sangat banyak, seperti sisa-sisa sayuran atau buah-buahan. Sampah organik dapat diolah menjadi beberapa produk yang bermanfaat, seperti eco-enzyme, sabun mandi, pupuk, dan lain-lain. Kegiatan pengabdian ini bertujuan untuk meningkatkan kemampuan peserta dalam mengolah sampah organik. Kegiatan terdiri dari dua tahap yaitu penyuluhan tentang kesadaran untuk memilah sampah dan pelatihan pengolahan sampah organik menjadi eco enzyme. Peserta pelatihan adalah anggota Dasawisma XI Desa Banyuraden, yang berjumlah 24 orang. Usai kegiatan, para peserta dimotivasi untuk dapat memulai mengolah sampah organiknya dan menghasilkan eco-enzym. Kegiatan ini juga diharapkan dapat menjadi kegiatan awal dalam inisiasi pembentukan bank sampah.

Abstract

Waste management is still a major topic in environmental issues because the growth in waste production is much higher than its utilization. Moreover, population growth in Indonesia continues and causes the amount of waste increasing continues. One of the very large amounts of waste is organic waste which is the remains of vegetables or fruits. Organic waste can be processed into several useful products, such as eco-enzyme, bath soap, fertilizer, and others. This service activity aims to improve participants' abilities in processing organic waste. The activities consists of two stages, namely counselling about awareness of shorting waste and training in processing organic waste into eco enzymes. The training participants were members of the Dasawisma XI, Banyuraden Village, totaling 24 people. After the activity, the participants are motivated to can start processing their own organic waste and produce eco enzyme. This activity is also expected to be an initial activity for the initiation of a waste bank.



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PENDAHULUAN

Banyuraden village is located in Gamping District, Sleman Regency, DIY, at coordinates 110.33785 East Longitude and -7.791686 South Latitude. This village has an area of 400 hectares and an average population density of 4,150 people/km². The total population of Banyuraden village is 16,600 people, consisting of 8,168 men and 8,432 women. (Admin, 2017). The population is spread across 8 hamlets and is divided into 22 RW and 78 RT organizations. RW 08 is the community pillar located in Dukuh hamlet which covers 3 RT (RT 04, 05, and 06). There are 3 Dasawisma groups in RT 05, namely Dasawisma IX, X, and XI. Each Dasawisma group has 15-20 women as members. Dasawisma XI has routine activities including regular

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monthly member meetings, Family Nutrition Improvement Efforts (UPGK) every 3 months which are integrated with Posyandu (Integrated Service Post), commemorating Mother's Day, Kartini Day, and Independence Day of the Republic of Indonesia, deploying the Jumantik Team (Frivier monitoring), and others.

Dasawisma XI members have various professional backgrounds, such as traders, employees, teachers, lecturers, entrepreneurs, and housewives, with educational backgrounds from elementary (SD) to doctoral degrees (S3). This diversity makes the mutually complementary relationship between members come alive. One of the themes frequently discussed by members is the theme of waste management which is still a problem. Some residents throw waste in their yard and then is burned, causing pollution. In addition, many of the residents' gardens that were not well maintained became targets for residents to dispose of their waste, as shown in Fig. 1.



Figure 1. Residents' gardens have become targets for waste disposal.

Meanwhile, in Sukunan Hamlet, which is very close to Dusun Dukuh, waste self-management has been carried out, where the waste management is fully handled by the local community, starting from the level of household managers to TPS (waste disposal sites). Furthermore, the collected waste is processed into other goods that are more useful (Sarasati, 2017). The waste sorting activity classifies waste into three categories according to the type of waste, namely organic waste, plastic type waste, and other types of waste (in the form of metal, glass, and so on) using separate places, as shown in Fig. 2 (Sadiyah, 2018). This is in accordance with the 3R principles of waste management, namely reuse, reduce, and recycle (UU No. 18 Tahun 2008).



Figure 2. Waste classification in Sukunan Hamlet (Sadiyah, 2018).

Currently, there are many known technologies for processing waste/garbage into more useful goods. Organic waste can also be processed into fertilizer, eco enzymes, floor cleaners, etc (Hayati *et al.*, 2022). One of the waste treatments currently being developed is the processing of organic waste into eco-enzyme liquid, which is an environmentally friendly liquid that is very useful and easy to manufacture (Prasetio *et al.*, 2021). Some

of the benefits of eco enzymes are cleaning fluids, plant fertilizers, and insect cleaners, as shown in the poster in Fig. 3 (in Bahasa) (Admin, 2022).



Figure 3. Some of the benefits of eco enzymes (Admin, 2022).

Dasawisma XI members want to be able to process their own production waste into other useful materials. One type of waste that is always present in large quantities is leftover food, vegetables, and fruits. This waste often causes air pollution and causes environmental problems. On the other hand, this type of waste is very good to use as a base for producing eco-enzyme. Therefore, members of Dasawisma XI are very interested in learning how to make their own eco enzymes, to reduce the amount of organic solid waste. This community service activity provides solutions to partner problems by providing guidance and training on making eco enzymes independently. If residents already can process their own organic waste into eco enzymes, it is hoped that there will be no accumulation of waste that can invite disease and environmental problems.

METODE

This community service activity mainly consists of 2 types, namely counselling on waste management into more useful goods, and training on producing eco enzymes. The method of implementing each activity is described as follows.

Counselling on Waste Management

This first activity is in the form of counselling to members of Dasawisma XI in Banyuraden village with the topic of managing waste into more useful items. The method used is in the form of lectures and discussions, accompanied by demonstrations of modified goods from waste materials. This activity invited all members of Dasawisma who were in the RT 05 Banyuraden village, which are Dasawisma IX, X, and XI. Event takes place at Balai RW 45, presenting a speaker from the GSTC (Guwosari Training Centre), namely Mr. Dwi Wantoro, ST., MT.

Eco-Enzymes Production Training

After the participants were equipped with waste management techniques, they were then given training on how to produce eco-enzymes from household waste such as vegetable scraps, fruit peels, etc. This activity is not only given training but also given materials and equipment that are free of charge. Thus, participants can

immediately apply the knowledge gained because all the facilities are available. The training was held at the GSTC location in the Guwosari area, Pajangan, Bantul, with trainer Mrs. Neni Widuri Lestari.

Before and after the training, participants are received to fill out a pretest and posttest questionnaire, which aims to determine the level of usefulness of this community service activity. The pretest and posttest questionnaires have the following questions:

1. Do you know the 3R principles?
2. Do you know that waste can be processed into other goods?
3. Do you know that waste can cause environmental problems?
4. Do you know that trash can bring in money
5. Are you able to process waste?
6. Do you know the ingredients for eco enzyme?
7. Can you process food scraps and fruit/vegetable waste into more useful items?
8. Do you know the benefits of eco enzyme?

Materials and Equipment

Mrs. Neni explained that making eco enzymes requires materials and equipment as shown in Fig. 4 - 5. The materials needed to make eco enzymes include 1 part sugar or molasses, 3 parts vegetable scraps or fruit peels, and 10 parts water. The main equipment needed to make eco enzymes is a used plastic jar or barrel, with a wide opening and a lid.



Figure 4. Materials needed to make eco enzymes



Figure 5. Plastic jar or barrel, with a wide opening and a lid.

HASIL DAN PEMBAHASAN

The first activity, counseling on waste management was carried out on December 18, 2023 (Fig. 6) with a trainer from the Guwosari Training Center (GSTC), who is Mr. Dwi Wantoro, ST., MT. He also has duties as an employee at the Bantul Regional Disaster Management Agency (BPBD). The counseling material includes an understanding of the existence of a waste emergency, methods of sorting waste, and how to collect waste. Fig. 7 shows a trainer demonstrating how to sort wet plastic waste. This topic is aligned with the GSTC jargon, namely Managing Waste Without Trash or Zero Waste Management (admin, 2023). From this activity, it is

hoped that the formation of a waste bank will begin which can improve the welfare of residents because waste has economic value (Siswati *et al.*, 2022).



Figure 6. Situation of the counselling on waste management.



Figure 7. A trainer demonstrating how to sort wet plastic waste

The second activity, eco enzyme production training was held on January 14, 2024, at the GSTC located in Guwosari village, Pajangan Bantul, Special Region of Yogyakarta (Fig. 8). The activity was attended by 24 people, consisting of women from Dasawisma XI Banyuraden Gamping Sleman DIY. Fig. 9 shows a situation of the training, with the trainer being an expert in processing eco enzyme, namely Mrs. Neni Widuri Lestari. She is a trainer from GSTC specifically for organic waste processing. The trainer explains how to produce eco enzymes from organic waste and continued with hands-on practice by the participants. Each participant received a package of materials and tools to make 1 liter of eco enzymes. The materials used to make eco enzyme are very simple, consisting of vegetable and fruit waste, water, and liquid sugar. After the training was finished, the trainer took a group photo with the activity leader and all participants respectively displayed in Figures 10 and 11.

The results of the pretest and posttest that have been filled in by the participant before and after the event are shown in Fig. 12. From the pretest and posttest analysis it was found that 29% of the participants gained new knowledge about the 3R principles, reduce, reuse, and recycle. Then 13% of participants understood the importance of waste management to prevent environmental problems and gained new knowledge about how to process organic waste. In addition, only 7% of participants know how to manage waste.



Figure 8. Eco enzyme production training in GSTC.



Figure 9. Situation of the eco enzyme training.



Figure 10. A trainer demonstrating how to sort wet plastic waste.



Figure 11. All participants in the end of activity.

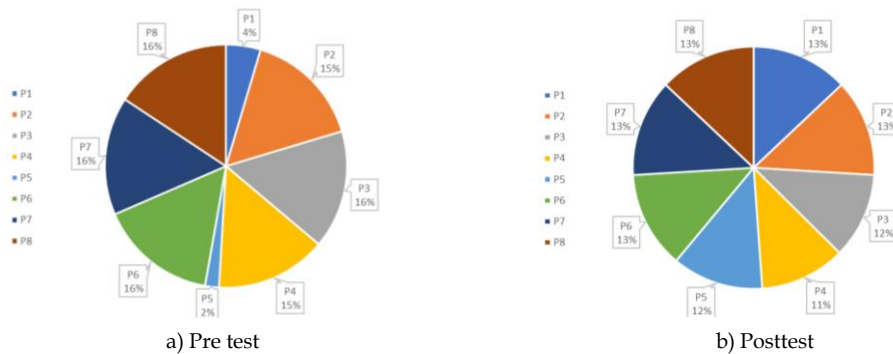


Figure 12. The result of pretest dan posttest.

KESIMPULAN

This community service activity is suitable for the needs of the community because the waste problem is getting to an emergency. The women of Dasawisma XI Dusun Dukuh Banyuraden were very enthusiastic about participating in the activity, as indicated by their active involvement in all community service activities. After this activity, it is hoped that it can be continued with the formation of a waste management group in Dukuh hamlet, Banyuraden Gamping Sleman. In addition, it is hoped that the women of Dasa Wisma XI can become a model in waste management.

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