ARCHIPELAGO
Volume: 01 Number: 02 Tahun 2021

Empowerment of Housewives in Producing Waste-Based Creativity Around the House During Covid-19 PPKM

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Abstract

Garbage that is not managed properly can cause the environment to become dirty and cause river siltation that results in flooding. The amount of waste production is in line with the number of population, the higher the rate of population growth, the greater the rate of waste production. Waste management can not only be done downstream, but also start from upstream. Many programs have been carried out in waste management, one of which is the procurement of waste banks. The waste bank program encourages the public to sort before depositing inorganic waste in garbage banks. Inorganic recyclable waste, such as plastic bottles of used mineral water can be economically valuable by means of being in tubes on garbage banks, while organic waste such as leftover vegetables and fruit can be further processed into eco-enzymes. This activity aims to transfer knowledge and technology of processing organic waste into eco-enzymes, so that the community can participate in maintaining the sustainability of the earth. The methods of activities carried out are extension and demostration. This activity can achieve the goals in accordance with the objectives, this can be seen from the participation and enthusiasm of the community during the activity.

Keywords: Producing Waste based Creativity, PPKM Covid-19

A. INTRODUCTION

Building social understanding, among others, is a problem of garbage is to throw garbage in itsplace. Garbage at this time is one of the environmental problems in everydaylife. There are some things that must be tried in waste management is the processing for the level of treatment and treatment for waste characteristics. Conversely, for the estimated National Urban Development Srtategy in 2003 if the average volume of domestic waste produced per person near0.5-0.6 kilograms / day.

Looking at the background above until it is needed methods to improve social understanding to produce aclean, healthyarea, with the hope to be free from non-organic waste. Therefore, it needs to be grown in everyone in his community life to continue to try to make themselves responsible for the health and cleanliness of each area after that can be tried widely to rural areas.

In the time of the COVID-19 pandemic, the growth of social awareness to create a clean, tidy, and healthy environment without waste seems to grow in all individuals. Balbar Village community is expected to play an active role in waste management. Garbage contained in masyarakat can be dry, wet, also B3 garbage. The presence of waste in abundant amounts pollutes the environment both polluting the soil as well as water. The environment is tarnished as dirty, rundown and smelly. To reduce the influence that arises according to the existence of garbage, namely using 3R (reuse, reduce & recyle) or re-cycle is an effort to replace used goods or have been unused again as items that can be reused (Susanti et al,202 1).

The following is the waste management process using the 4R system (Irawatie, Setiyawati and Afriani, 2021):

a. Doing waste sorting carried out in each house is to distinguish organic waste and inorganic waste. After the sorting process The next step is the transportation of garbage from their respective homes to garbage shelters or garbage banks. Inorganic waste, for this waste directly has economic value because it will be weighed according to its type.

b. Reduce is reducing waste and saving the use of goods so as not to cause excess waste. Example: reduce the use of plastic bag waste by replacing it with a basket for daily shopping activities.
c. Reuse is by reusing waste that can still be used. Example: Utilizing leftovers or vegetables for fodder, using refillable bottles as flower pots.
d. Recycle is by recycling waste that can still be recycled. Examples: Processing organic waste into compost, plastic waste such as detergent containers, coffee wrap, and others are reused to be made handicrafts such as bags, wallets, flower vases, tissue holders and other creative forms.

The principles of waste bank management above are very clear how the manager or manager of the waste bank to be able to at least do 3R (Reduce, Reuse, Recycle).

The waste bank program urges citizens to carry out the sorting of organic and inorganic waste. Selection can be tried at home before depositing inorganic waste in a garbage bank. Inorganic waste that can be recycled, such as plastic bottles leftover mineral water can be cheaply supplied by the method of being deposited in the garbage bank, while organic waste such as vegetable and fruit waste can be further processed into eco-enzymes.

Eco-enzymes were introduced by doctors. Rosukon Poompanvong, founder of the Organic Agriculture Association of Thailand (Bharvi S. Patel, Bhanu R. Solanki and Archana U. Mankad, 2021). The idea of this project is to digest enzymes from waste or organic waste that we generally throw into garbage cans, become organic cleaners, or household cleaning materials. Eco-enzyme is the result of fermentation of organic kitchen waste such as fruit pulp, fruit peels, and vegetables, sugar (brown sugar, brown sugar or cane sugar), and water. Apparently dark chocolate and has a strong sweet sour fermentation aroma. But, although area friendly, eco-enzymes are not made to be eaten. Eco-enzymes can be multipurpose liquid plicationnya includes households, agriculture and also livestock. Basically, eco-enzymes emphasize the response of bio-chemicals in nature to create enzymes that are useful using fruit or vegetable waste. Enzymes from this waste is one of the waste management methods that use kitchen sisasisa for something very useful. This

liquid can be a home cleaning agent, or as an efficient natural fertilizer and pestisidia (Novianti, 2021). For Alkadri and Asmara (2020) eco-enzymes can help the development of organic plants, help livestock always healthy, sterilize channels, clear water, reduce waste, and as dish soap.

The purpose of this dedication activity is to transfer knowledge and technology of processing organic waste into eco-enzymes, so that citizens can function and in protecting the sustainability of the earth. The efficacy obtained from this activityis, withknowledge about the processing of organic waste making eco-enzymes,mineralizingsocial and cheap benefits from the results of organic waste processing that is tried by itself,menolong government programs in protecting the sustainabilityof the area through wastemanagement, and foracademics andresearchers, as a container to improve the innovation of waste processing technology.

B. METHOD

PkM activities are carried out with a series of activities, as follows:

1. Providing material to achieve the efficacy of processing organic waste socially and cheaply when processed into eco-enzymes.
2. Demonstration, featuring methods of making eco-enzymes made from organic waste.
3. The creation of eco-enzymes by PKK Mothers is guided by the PkM team

C. DISCUSSION

This community service activity aims to utilize organic waste into an eco-enzyme. This community service activity is carried out in 3 (three) stages, including eco-enzyme creation by community service teams, counseling,and demonstrations. In Indonesia, the largest contributor to the accumulation of waste is household waste (62%) where the main composition of the household waste is food waste/food processing waste or commonly referred to as organic waste (44%). So far, the organic materials from organic waste have not been managed

and utilized optimally by the community. Whereas organic materials from organic waste have great potential to be reused into useful goods and can have considerable economic value. Actually in rural areas, organic waste is widely used by residents. Usually they throw organic waste on plantation or agricultural land to be used as natural fertilizer. However, generally they have not processed the organic waste effectively and continuously. If organic waste is only distributed on agricultural land without any prior processing, then the nutrients in the waste cannot be optimally absorbed by plants. Therefore, it is necessary to have proper management efforts so that organic waste can become something that is productive, useful and has economic value. Organic waste can be processed into organic fertilizer, biogas, charcoal briquettes, fish/animal feed, handicrafts, and eco enzyme. Eco enzyme is an alternative to use organic waste into a product with high economic value and benefit value.

Eco enzyme is often referred to as a multipurpose liquid because it can be used both in the household, agriculture, animal husbandry and industrial fields. Examples of these uses include natural cosmetic ingredients, natural medicinal ingredients, floor cleaners/disinfectants, insecticides and liquid fertilizers that can stimulate plant hormones to improve fruit and vegetable quality and increase crop yields. Use as a liquid fertilizer by diluting every 30 ml of eco enzyme solution into 2 L of water and then spraying it on plants. Applications for controlling plant pests and nuisance animals such as cockroaches, ants, flies, mosquitoes and other insects by diluting 15 ml of eco enzyme solution into 500 ml of water and then spraying it on the target area. The rest of the filtered dregs can be used to start/accelerate the next eco-enzyme production process, assist the septitank decomposition process by crushing it and putting it in the toilet drain, as well as compost.

1. Eco-enzyme manufacturing

This devotional activity begins with the creation of eco-enzymes by the devotional team as a sample. This is because in the manufacture of eco-enzymes it takes 3 months until the harvest of the produce. To facilitate the

introduction of technology accepted by the public, real examples are needed that are directly seen. So that the implementing team has prepared the finished eco-enzyme to be seen and immediately tried its use.

In the manufacture of eco-enzymes, the materials used by clean water are well water, sugar for eco-enzyme fermentation i.e. natural sugar (palm sugar), and organic waste used is raw, not yet processed, not hard, not dry, not fatty i.e. fruit peels and leftover vegetables. Eco-enzyme manufacturing containers made of plastic, because in the first month fermentation will produce gas and can be at risk of rupture. In the manufacture of eco-enzymes do not use containers of metal materials, because the end result of fermentation is acidic (pH below 4) which can later rust. Usually each material will produce a different gas and the most gas in the first week and the second week, entering the third and fourth weeks of gas starting. reduced. So it is recommended to use containers such as drums, buckets, jars whose lid surface is quite wide and facilitates the release of gas through the pores on the lid.

2. Extension

Community service activities are expected to be able to improve the soft skills of participants. The material delivered on counseling activities includes the role of humans in maintaining the preservation of nature and eco-enzymes (definition, manufacturing process, and benefits). Eco-enzymes made can be used as bathroom floor cleaning fluids, disinfectants, midges, and plant liquid fertilizers. But for the use of liquid fertilizer plants still need to be added water (Galintin, Rasit and Hamzah, 2021). The use of eco-enzymes as plant liquid fertilizers can affect the morphological shape of plants such as leaf color becomes greener, leaf size, fruit, and stem diameter also becomes larger (Larasati, Astuti and Maharani, 2020).

In managing waste certainly can not be done in a careless or reckless way because it could cause new problems that become a slum and unhealthy environment. Therefore, a good management is needed in managing waste,

namely by sorting garbage. As for the ways to be considered:

a. Separating the trash can for organic and organic, for organic andorganic so that the garbage is dry so that later it can be recycled without looking dirty or smelly. .
b. Replacing Plastic Waste Pedestals into Newspapers or Cardboard, this is intended to replace plastic commonly used as a dumping pad or how to dispose of the correct garbage . When the garbage has been sorted properly, then there is no need for a plastic base anymore. We can use newspapers, cardboard, or even barefoot, straight to the trash.
c. Turning organic waste into compost, how to process the most environmentally friendly organic household waste is to make it compost for gardening so that later these wastes will be It is more useful and also has the potential to be sold.
d. Recycling dry organic waste can be made D.I.Y. Items such as used bottles into plant pots, cans to store spices, in addition, can also sort out closed plastic waste such as plastic bottles that can be used. recycled and open plastic waste that if crushed into plastic seeds. Then the trash is given to the garbage bank.
e. Provide the remaining oil to the oil processing agency. Never pour oil into kitchen drains because leftover oil dumped in the sink can clog plumbing and worse can contaminate the drains in the sink. The whole city. This oil can be donated, with previously cooled and placed into a container to become a cleaner biodiesel. Biodiesel is a non toxin fuel and can decompose so that it can drive the car engine while helping the environment.
f. Managing hazardous waste. Don't throw dangerous and chemical items like batteries or printer ink into the usual trash can. Waste containing chemicals is very dangerous for the environment. Separate this type of garbage and take it directly to the garbage recycling center so that it can be managed in the right way. What about damaged electronic waste? This could return it to the company that manufactured it for them to recycle into

a new electronic product.

g. Minimize the consumption of plastic or other waste, by reducing waste production as much as possible, for example shopping to the market bring your own shopping bag, then if you go bring cutlery or a place to drink itself so that no plastic is wasted. Because the smallest waste will have a big impact on our environment.

3. Demonstration

Demonstration is an effective way of transferring science, because by demonstrating or demonstrating a process, the information to be conveyed will be easier to understand. Demostration of eco-enzyme manufacturing is carried out after extension activities.

How to Make Eco Enzyme
Materials needed:
Fruit peel waste/fruit/vegetable pulp
Sugar (brown sugar/brown sugar/cane sugar)
Water.

Tools needed:
Bucket
Plastic barrels/drums/buckets with lids or you can use plastic bottles with lids

Steps of making work:

First, the ingredients are prepared in the form of organic waste (fruit and vegetable peels) in 3 parts, 1 part sugar (brown sugar/brown sugar/cane sugar) and 10 parts water. For example, 900 g of organic waste: 300 g of sugar: 3000 g (ml) of water or 300 g of organic waste: 100 g of sugar: 1 L of water.

The ingredients are then put in a container, stirred and tightly closed. Then let stand for 3 months for fermentation to occur. During the fermentation process,

alcohol will be produced in the first month, vinegar/acetic acid in the second month and enzymes in the third month.

In the first 2 weeks of the fermentation process, quite a lot of gas is formed, so efforts are made to be able to open the lid of the container to remove gas and then close it again. When the formation of gas has reduced, the container is enough to be opened and closed once a week.

If during the fermentation process white worms/mushrooms appear or the solution is black, then add a handful of sugar or as much as the original dose and mix well and then close it again. However, if a black fungus appears, it means the fermentation process has failed.

Harvesting is carried out after 3 months of being allowed to stand, marked by the solution turning cloudy brown and having a strong sweet and sour aroma. Harvesting is done by filtering it with a cloth and then putting it in a plastic container/bottle and closing it tightly. Storage can be done at room temperature and placed in the shade / not exposed to direct sunlight.

In the manufacture of eco-enzyme closed containers used do not use glass because it is prone to breakage due to microbial activity of fermentation. The use of animal-derived and oily ingredients is not recommended because the uncontrolled spoilage process of meat can lead to pathogens. To make eco enzyme smell fresh, you can add orange/lemon peel or pandan leaves. Eco enzymes can be stored for a long time. Organic waste management can contribute to reducing the accumulation of waste in general and can also reduce the wasting of organic material that has great potential.

D. CONCLUSION

From the results of community service activities carried out, it can be concluded that socialization and training activities of organic waste processing into eco-enzymes can achieve the target in accordance with the objectives of community service activities, this can be seen from the participation and enthusiasm of the community during theactivity.

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