



Manufacturing Mini Biopories With Organic Waste Using Used Goods

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ABSTRACT

Waste is classified as environmentally friendly because it can be broken down naturally and is quickly broken down by bacteria. The advantage of organic waste is to increase soil fertility because the organic material is broken down by bacteria and provides excellent nutrients for plant growth. The soil becomes more fertile and the trees grow better. The impact that rubbish has on the lives of the people around us, namely when we walk past a pile of very smelly rubbish on the side of the road, we become anxious and pinch our noses, the rubbish even has an impact on our health. Causes health problems and disease attacks in humans such as diarrhea, dysentery, scabies and fungi. Therefore, a good attitude is needed from every human being to carry out management as well as possible. Waste management through biopore absorption eliminates the need for waste containers in every resident's home, eliminating waste and making society more effective and efficient.

Keywords:

Organic waste, waste, biopores

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INTRODUCTION

Waste is a problem that the government and society themselves have never fully faced. This waste problem has become a very serious problem that needs attention from all parties, because waste can make the environment dirty, smell bad, cause disease and really disturb the beauty and sustainability of the environment. Waste is waste material that is discarded as a result of the production process, whether in industry or households. Garbage can also be said to be something that is useless and that people do not want after its use ends (Prawiro, 2018).

The current lack of public awareness has resulted in large amounts of household waste every day. As the population increases, the greater the waste produced. The greater the number of settlements, the greater the amount of waste disposed of. Apart from that, human activities in the community also have a big influence on increasing the volume of waste. Of the many activities carried out by humans, the most dangerous is household waste. The growing awareness and participation of the community in managing waste certainly cannot be separated from the communication efforts carried out by both the government and the community. Communication is an instrument for achieving development goals, through

communication development problems and challenges can be resolved together (Antin, 2017).

METHODS

STEAM stages

a. Ask

Community behavior which often causes pollution to the land and the surrounding environment has exacerbated the impact of the land crisis. People who are still struggling with the habit of throwing rubbish carelessly can cause environmental pollution. Managing waste can be done by utilizing organic waste and recycling used items which can be useful for biopores. Biopores are absorption holes made perpendicular to the ground. The biopore holes are then filled with organic waste which functions as food for living creatures in the soil such as worms and plant roots. The benefits of biopores are intended to restore soil fertility, protect water and preserve the carrying capacity of the environment

b. Imagine (Imagine the product)

Many people don't know the term biopori, but there are also those who already understand the meaning of the term, and there are some who just know, but haven't yet reached the point of understanding it. Biopores are small holes in the soil that are formed due to the activity of organisms in the soil such as worms or the movement of roots in the soil. The hole will be filled with air and become a pathway for water to flow. So rainwater does not go directly into the drainage channel, but seeps into the ground through the hole. Biopores act as infiltration holes to collect rainwater and seep it back into the soil which can increase the soil's capacity for rainwater, reduce waterlogging, which in turn reduces organic waste. The results of reducing organic waste can be used as compost and maintain soil fertility.

c. Plan (Product Planning)



d. Create (Create a Product)

Tools and materials

- a. Organic waste
- b. Medium sized used bottles
- c. Water
- d. Plant pots
- e. Scissors
- f. Candles
- g. Cutter
- h. Ruler

- i. Nails
- j. Matches
- k. Pencil
- l. Ornamental plants or other plants

Making process

- a) Prepare the tools and materials used
- b) Punch holes in all parts of the bottle using a nail that has been heated with wax
- c) Measure with a ruler the size of 15 cm of the bottle which will be cut into 2 parts using a cutter
- d) Punch a hole in the bottle cap using a nail heated with wax
- e) Prepare the plant pot
- f) Fill the pot with soil and place the bottle in the center
- g) Next, paint the parts that need to be painted, both the bottle and the pot
- h) Fill the bottle using organic waste that has been cut into small pieces such as leaves, grass, fruit skins and waste from other plants.
- i) After that, close the hole using an old bottle cap
- j) Plant plants to put in the pots
- k) Biopori is ready to use

STEAM aspect

- Science : The force and pressure that occurs when organic waste is put into used bottles, the rotting process.
- Technology : The media made as biopori.
- Engineering : The design or plan that will be made as a biopore.
- Art : Colorful due to painting
- Mathematis : Measurements, surface area and height of used bottles.

RESULTS AND DISCUSSION

The concept of a communication strategy is considered suitable for providing education regarding waste management which formulates a plan by determining the communicator, the message conveyed, the media used and the targets for creating biopores in the community. Socialization or direction to the community is needed regarding the importance of biopores in dealing with organic waste and accelerating water infiltration. rain, thereby preventing waterlogging. Assistance in making appropriate biopore holes so that the obstacles found can be overcome. Consideration of the placement location must be done correctly so that the biopore hole can function optimally. The solution obtained is that the community as one of the sources of waste production must be given massive awareness regarding the importance of maintaining environmental cleanliness and waste management. Good use of waste will also provide value to waste that has been sorted, so that waste is no longer an item that has no value.

CONCLUSION

The conclusion is that making biopores from used bottles is a solution to reducing waste which is a problem in society. Lack of public awareness regarding waste generation can have a negative impact on the environment, public health and the economy. Several factors that cause careless behavior in disposing of waste are a lack of environmental

education, inadequate waste management infrastructure, and a lack of awareness of environmental impacts. Inviting the community to work together to clean the environment to increase public awareness about the importance of disposing of waste properly. The type of waste produced does not only come from households, but also includes inorganic waste which is often found. Unfortunately, the waste disposal system which is still not good has made waste a major asset that is neglected. Communities, limited by a small amount of empty land, tend to use rivers as rubbish dumps, which ultimately results in the river being polluted and becoming a source of inconvenience for the community. Regular burning of waste is also a serious problem because it contributes to air pollution. Different types of waste require different times in the natural decomposition process, for example, organic waste decomposes more easily than inorganic waste.

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