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Utilization of Organic Waste into Liquid Fertilizer in Improving the Economy of Citizens to Achieve the Kamtibmas Environment, Kalanganyar Village, Sedati District, Sidoarjo

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Abstract

Kalanganyar is a village that is famous for its milkfish processing business, with so many processed milkfish, a lot of waste is generated from the manufacturing process. Liquid organic fertilizer is a solution from the decomposition of organic materials derived from plant residues, animal and human wastes which contain more than one nutrient element. With the socialization of the manufacture of liquid organic fertilizer, it can reduce waste waste, improve the people's economy and encourage the creation of a law and order environment. This community service activity is in the form of socialization and training on the manufacture of liquid organic fertilizer in Kalanganyar Village. With the socialization to the public about the manufacture of organic liquid fertilizer,

Keywords: Kalanganyar, liquid organic fertilizer, socialization, economy

INTRODUCTION

Kalanganyar is a village that is famous for its processed milkfish SMEs, with so many processed milkfish, a lot of waste is generated from the manufacturing process. Not only milkfish waste, market waste is also generated in this area. Waste treatment in circles can be said to be quite good, because it has been sorted and processed according to procedures. Some organic waste that cannot be processed anymore is usually sold to collectors to be reprocessed into goods. The problem faced by the Kalanganyar village TPST is the processing of organic waste which is mostly produced from household waste, MSME waste, and restaurant waste. One way to solve the problem of accumulating organic waste is by 1990, (Fikriyah et al., 2022). The increase in population has an impact on increasing the volume of waste from households. (Lusi-Andriyani, 2022)The increasing number of household activities carried out, the more vegetable waste produced will cause piles of rotting garbage, causing unpleasant odors, polluting the environment and becoming a source of disease that has an impact on public health.(Nurdini et al., 2016) The issue of waste management is still a thorny problem for Indonesia. This is because most of the waste produced by households still ends up in the Final Disposal Site (TPA).(Istanti, 2021)

The accumulation of garbage, especially vegetable waste, needs to be processed properly and correctly. Waste processing carried out by the community is still conventional which takes a long time so that an innovation can be needed by reprocessing waste simply by reusing waste into compost. Compost is a fertilizer made from organic materials such as household kitchen waste, leaves, other dirt, grass that can increase soil fertility. The purpose of this community service program is to provide education to the public about the dangers of littering and the benefits of waste management.(Enny Istanti#1, 2022). The findings obtained from this activity are that Kopeling and related communities have active participation and real motivation to minimize the problem of piles of garbage, especially household waste, to be something of economic value.(Syaeful-Bakhri, 2022)

According to Article 1 of the Law on National Police of the Republic of Indonesia Number 2 of 2002, it is stated that "the definition of Kamtibmas is public security and order is a dynamic condition of society as one of the prerequisites for the implementation of the national development process in the context of achieving national goals marked by ensuring security, order , and the enforcement of the law, as well as the establishment of peace which contains the ability to foster

and develop the potential and strength of the community in increasing, preventing and overcoming all forms of law violations and other forms of disturbance that can disturb the community".(M.Gaussyah, 2010)

Community service activities carried out in Kalanganyar Village, Sedati District, Sidoarjo Regency which is one of the tourist villages that is one of the pillars of the economy of Sidoarjo Regency.

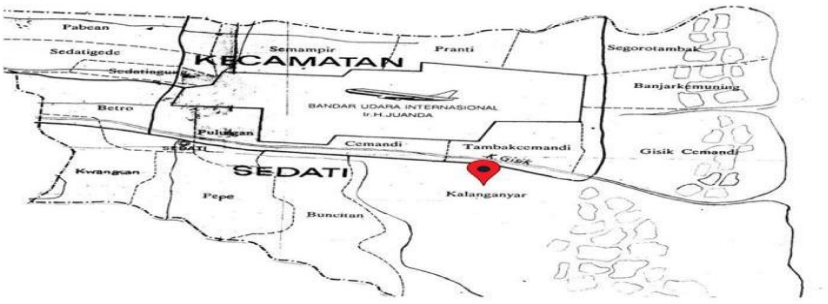

Figure 1. Kalanganyar Village Area Map (location of activities)

The area of Kalanganyar Village is 135.00 M^2, which consists of 23 RT and 5 RW. Kalanganyar Village is one of the Tourism Villages in Sidoarjo City. The majority of the people of Kalanganyar Village work as pond farmers and are also entrepreneurs as MSME actors. Socially, public awareness of waste management is still lacking, even though there has been waste management organized by the village through the Sopo Nyongko TPST. The number of people who do not care about waste management, especially in paying dues, makes waste less than optimal in its management. People still consider waste as a waste material that has no use (economical) value. Kalanganyar Village has an Integrated Waste Management Site (TPST) which has been operating well, especially in the management of inorganic waste. Inorganic waste management in this TPST is by sorting waste based on its type to be used as rupiah and burning waste to produce ash which can be processed as a mixture for making biopori (water infiltration). On the other hand, organic waste management has not been maximized. The lack of public knowledge about the importance of processing organic waste is a separate problem that needs to be solved.

With the presence of the community service team in Kalanganyar Village, providing socialization about sorting organic waste that can be processed into Liquid Organic Fertilizer (POC) which has economic value.

METHOD

The form of community service activities in Kalanganyar Village, Sedati District, Sidoarjo Regency aims to socialize and conduct training to local residents.especially TPST in the manufacture of Liquid Organic Fertilizer (POC). In this socialization activity we have collected data to find out the existing problems. The socialization activity was carried out by involving the TPST, PKK women and youth organizations to provide explanations about environmental awareness by processing organic waste into liquid fertilizer to improve the community's economy in order to achieve the environment. kamtibmas.

The organic waste treatment system into a product that has economic value passes through several stages. In implementing the work program, it is necessary to develop several methods, including:

- Survey, in this case the survey conducted aims to find information about the village of Kalanganyar both geographically, livelihoods and existing problems.
- TPST processing, in this case the aim is to find information about waste processing in TPST and understand about the types of waste that have been managed and have not.
- Socialization, which consists of providing an understanding of organic and inorganic waste, conveying information about processing organic waste and approaching TPST, PKK women and youth groups regarding the manufacture of liquid fertilizer.

- The practice of making liquid fertilizer, in this case the community service team provides direction to participants

After that, it was continued with the manufacture of Composter Tongs and optimization of product marketing then training and practice of making Liquid Organic Fertilizers (POC) aimed at making the community able to process organic waste and household waste to become a new product that has economic value in Kalanganyar Village in order to improve the economy of the residents. in order to achieve a kamtibmas environment. This activity was delivered by the Thematic KKN Student Group 011 Bhayangkara University Surabaya in Kalanganyar Village.

RESULTS AND DISCUSSION

Socialization

Through the processing of organic waste and household waste in Kalanganyar Village, Sedati, Sidoarjo, the community is expected to be able to process organic waste to become a new product that has a selling value (economical).

Figure 2. Socialization

By conducting data collection on the community, especially the TPST, it can be useful to find out how far the waste processing in Kalanganyar Village is so that from the data it can overcome the problems complained of by the people of Kalanganyar Village. The result of our approach is that there is still a lack of public understanding of organic waste processing which should have a selling value that can improve the economy of the residents of Kalanganyar Village.

Composter Tong Making Training and Practice

After getting data and information from the TPST and local residents, a tool in the form of a composter is made to process organic waste into liquid fertilizer. The materials needed to make a composter include used barrels, paralon pipes, EM4, molasses, vegetable and fruit waste. The first step is to cut the paralon pipe along the size of the used barrel and cut it into small pieces using an electric drill. Next, make a hole in the top two sides of the used barrel and place the paralon horizontally. Then make a hole in the bottom of the barrel for the installation of the water faucet. Make a filter for the organic waste canister. The composter is ready to be filled with garbage.

The next step is to mix the remaining vegetables and fruits with a mixture of EM4 and molasses in a ratio of 1:1 per 200ml. Stir the ingredients until evenly mixed then close the composter tightly, let stand for about 1 month.

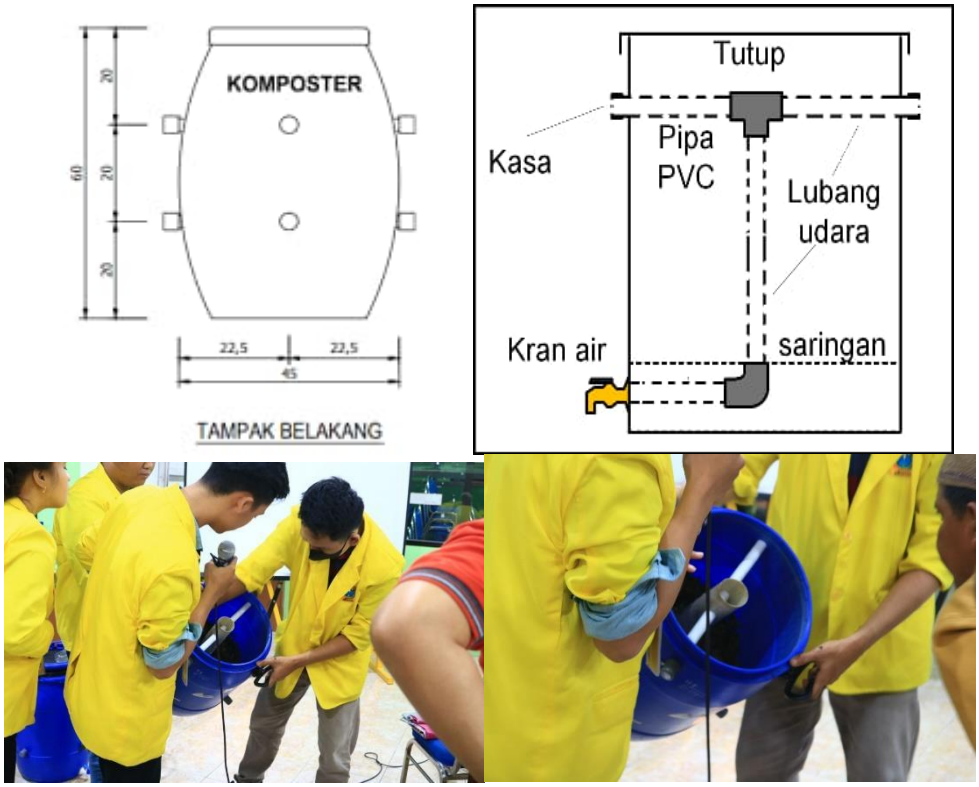

Figure 3. Composter Keg Making

Figure 4. Practice of Making Liquid Organic Fertilizer

After making the composter, here are the steps in the process of making liquid fertilizer. First, cut the vegetable and fruit waste into small pieces to speed up the composting process. Mix EM4 and molasses at a rate of 1:1 per 200ml of water. Put the vegetable and fruit waste that has been cut into the composter bin and spray it while stirring evenly. The addition of EM4 and molasses serves as food for good bacteria to speed up the decay process. Close the compost bin tightly so that outside bacteria cannot enter and affect the decomposer process.

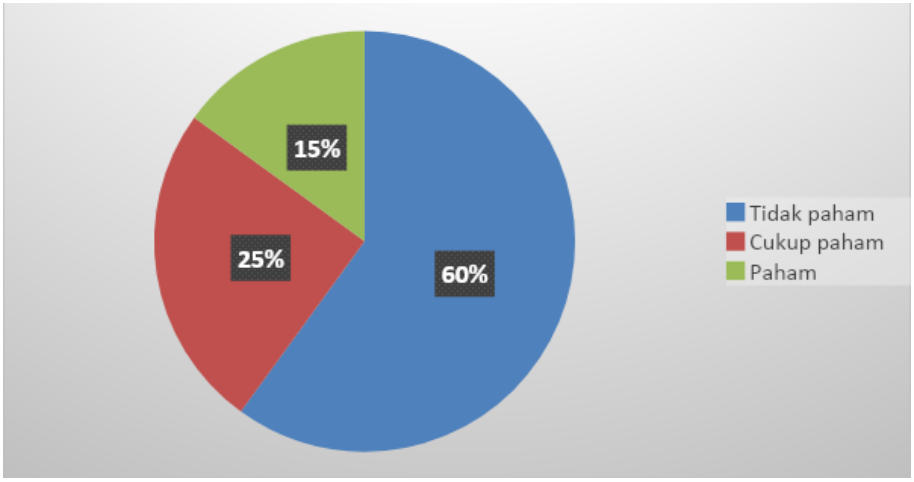

Figure 5. Diagram before socialization

From the diagram above, it can be seen that prior to the dissemination of composter making and its use, it can be seen that 60% of the participants stated that they did not understand, 25% understood enough, 15% understood. This shows that most of the participants still lack knowledge about processing organic waste into liquid fertilizer in order to get economic value.

From the people who attended the socialization, especially TPST, PKK women and youth groups regarding the manufacture of liquid fertilizer from organic waste. 60% of the participants stated that they did not understand composter. With this socialization, participants are expected to know and understand about composter and its processing. The following is a comparison of participants' understanding of the socialization of composting and its use before and after the socialization.

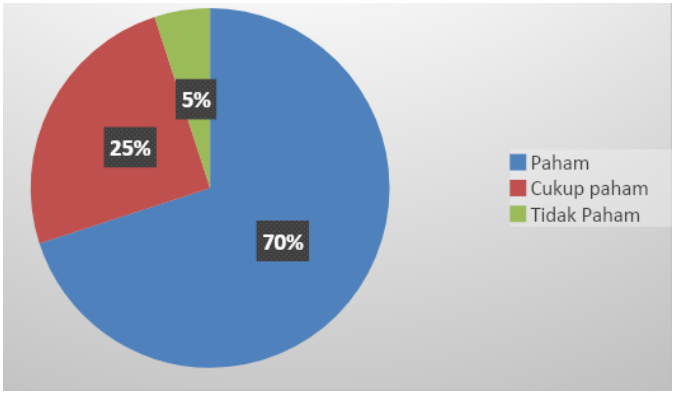

Figure 6. Diagram after socialization

After the socialization of composter making and its use to participants, it was found that 70% stated they understood, 25% understood enough, and 5% did not understand. This shows that the socialization delivered by the Real Work Lecture participants was conveyed well.

The participants, both TPST, PKK women and youth organizations, hoped that the socialization activities regarding composter manufacture and its use in Kalanganyar Village could increase knowledge and improve the economy of local residents in order to achieve a social security environment.

In addition, the community can feel the positive impact of these activities, namely:

- Reduce organic waste
- Can be useful for local plants
- Make it a business opportunity

CONCLUSIONS AND RECOMMENDATIONS

Community service activities through community empowerment by the 011 TEMATIC KKN Bhayangkara University Surabaya, which socialize the manufacture of composters. With the aim

of reducing household organic waste and to increase public awareness about environmental hygiene and create economic value for local residents. Garbage which is an issue in the community if managed properly can produce economic value that can support the community's economy.

The people of Kalanganyar village are expected to be able to process organic waste optimally and continue to improve their skills along with the times. In terms of facilitators, the village of circles can help to develop a program for making liquid fertilizer.

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