

Composting Implementation of Non-Hazardous and Non-Toxic Organic Waste at PT. PJB UP Gresik

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Abstract: *This paper will describe the benefit of implementation of composting program in PT PJB UP Gresik. Program have been successfully implemented. The utilization of leaf and organic non-leaf waste as compost. The trend in the utilization of leaf waste become compost has increased up to 2018 and decreased in 2018. The composting program can also save on expenses for purchasing fertilizers. In 2018, the compost production reduced due to unplanned activities in the plant reduced, improvement in minimizing utilization of paper, improvement in garden management, increasing in reuse tools, etc.*

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I. Introduction

PT. PJB UP Gresik is the biggest power generation units in the town of Gresik, exactly on Harun Tohir streets, Sidorukun Village, Gresik, East Java. The Company generatean electric power with 2218.78 MW installed capacity^[1]. Large amounts of organic waste is still a main global problem especially in PT. PJB UP Gresik. The waste increase over the time due to increase in population and human activities^[2]. Many ways are used to reduce organic waste one of them is composting. Waste processing i.e. composting requires some facilities^[3]. Composting is an recycling of organic materials into useful products where the compost can be used as a soil conditioner, organic fertilizer also as it contains high nutrients for the soil^[4].

The effort have being performed by PT. PJB UP Gresik to solve the problems which are Reduce, Reuse, and Recycle (3R)^[5]. The intent of this program is reducing unnecessary waste, reuse the waste for degradable purposes and recycle the waste in the processing plant. PT PJB UP Gresik has consistently carried out sustainable use of waste with one of the programs is composting.

In 2017 and 2018, PT PJB UP Gresik use 154.02 and 78.25 ton of organic waste to make a compost. Based on this data, composting program in PT PJB UP Gresik can reduce large amount of organic waste. There are many benefits by composting. In addition to reducing organic waste, composting programs can also save on expenses for purchasing fertilizer. By implementing this program, PT PJB UP Gresik has supported a program to reduce organic waste and support the empowerment of surrounding communities. This paper will describe the benefit of implementation of composting program in internal company.

II. Material And Methods

This research was carried out on PT PJB Gresik Power Plant, Gresik, Indonesia. The organic waste was collected and mixed with leaf to produced compose. The implementation have been started since 2012 until today. Composting program is part of waste management program as shown in Figure 1.

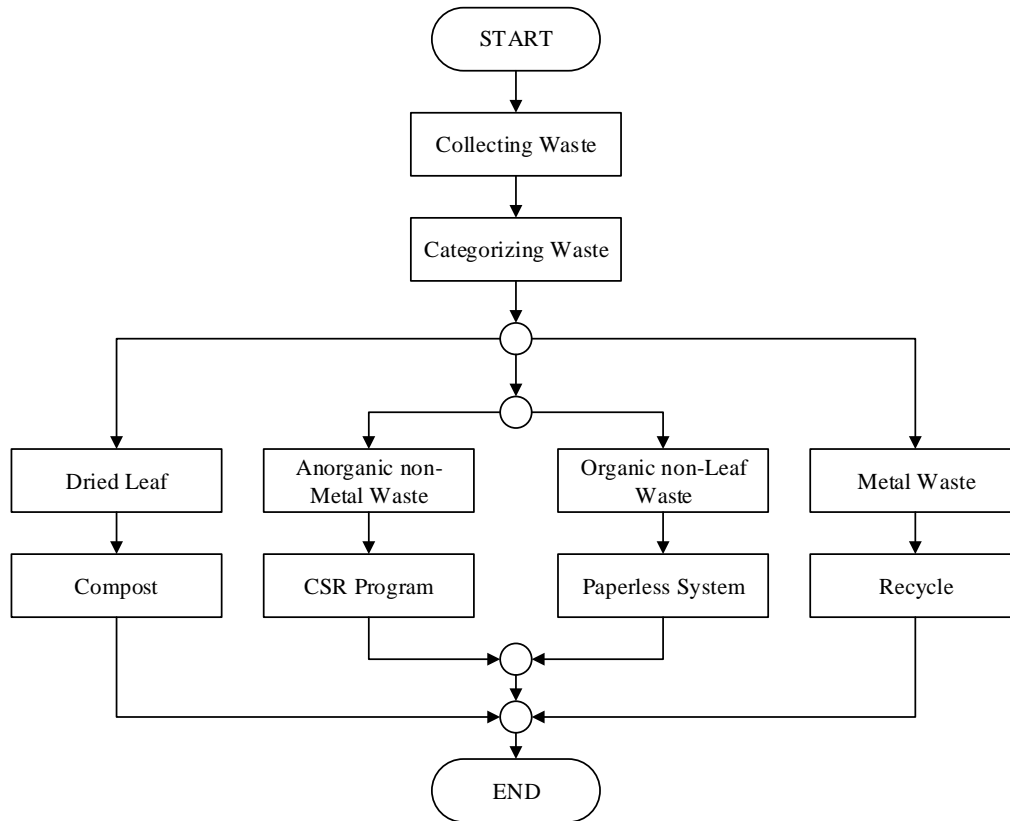


Figure 1. Flowchart of waste management procedure

The leaf will mixed with organic non-leaf waste in composting process, meanwhile metal will be recycle and anorganic non-metal will be use for CSR such as handcraft, etc. The successfull implementation of composting of Non-Hazardous and Non-Toxic Organic Waste at PT. PJB UP Gresik will be discussed in the next section.

III. Results and Discussions

The utilization of leaf and organic non-leaf waste as compost at PT PJB UP Gresik has been going on since mid-2012. The trend in the utilization of leaf waste become compost has increased up to 2018 and decreased in 2018 as seen in the Figure 2. The trend of using organic waste to be compost tends to increase, this shows the success of PT PJB UP Gresik to reduce organic waste by making compost. The composting program can also save on expenses for purchasing fertilizers, along with data on decreasing costs for fertilizer purchases in 2012-2018. In 2018, the compost production reduced. This phenomena happened due to unplaned activities in the plant reduced, improvement in minimizing utilization of paper, improvement in garden management, increasing in reuse tools, etc.

On the other hand, utilization organic waste into compost can remove the cost of fertilizer purchase to maintain the garden, as shown in Figure 3. In 2012, there was still expenditure on fertilizer purchases because even though the composting program had been carried out in that year, the program began in the middle of the year so that from the beginning to the middle of 2012 there were still purchases of external fertilizer for garden maintenance at PT PJB UP Gresik. Composting programs can save on expenses for purchasing fertilizer due to increase of compost production, the fertilizer produced by this composting program is also distributed to community empowerment programs..

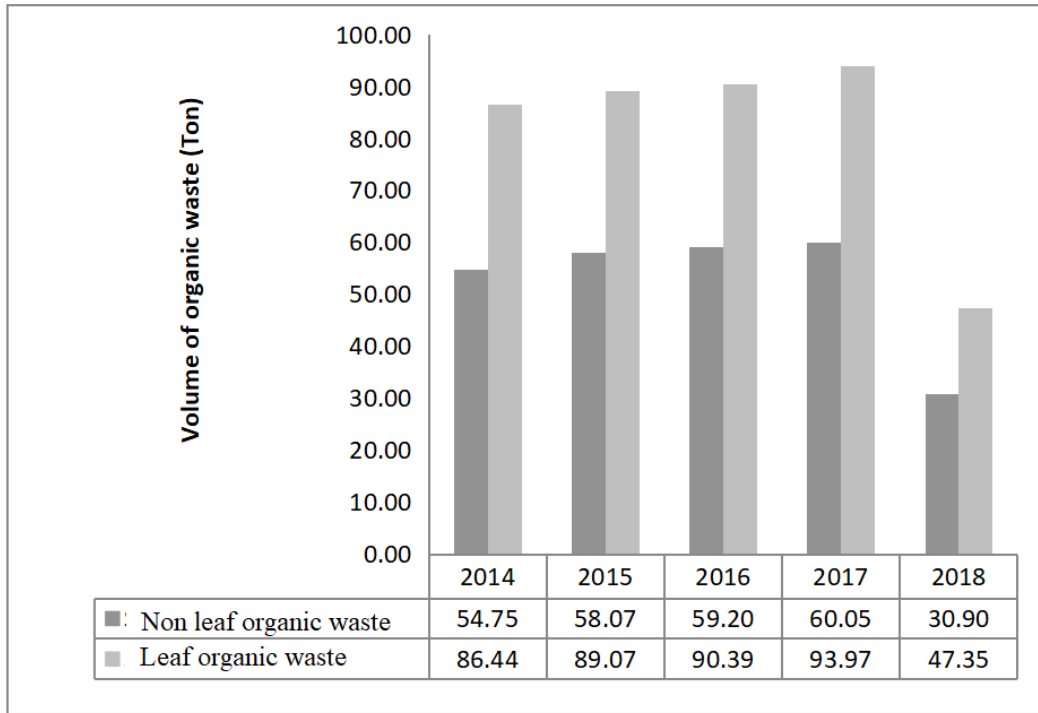


Figure 2. Volume of organic leaf and non-leaf waste during 2014 - 2018

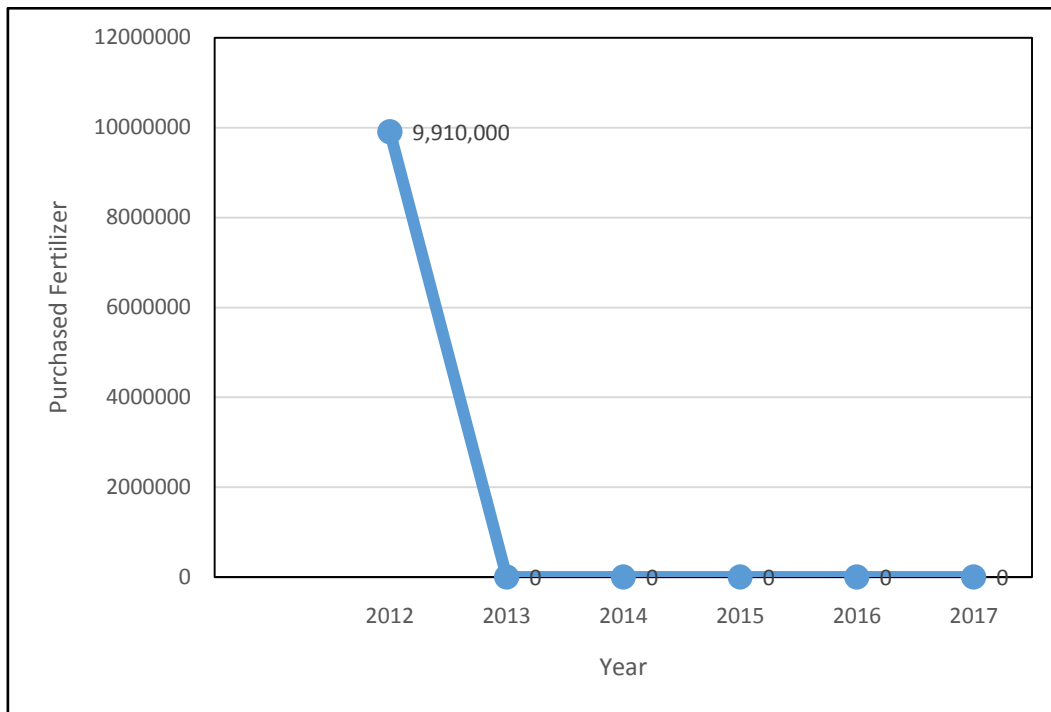


Figure 3. Volume of purchased fertilizer during 2014 - 2018

IV. Conclusions

This program have been successfully implemented. The utilization of leaf and organic non-leaf waste as compost at PT PJB UP Gresik has been going on since mid-2012 until now. The trend in the utilization of leaf waste become compost has increased up to 2018 and decreased in 2018. The trend of using organic waste to be compost tends to increase. The composting program can also save on expenses for purchasing fertilizers. In 2018, the compost production reduced due to unplanned activities in the plant reduced, improvement in minimizing utilization of paper, improvement in garden management, increasing in reuse tools, etc.

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