Short Communication

ENHANCING THE PRODUCTIVITY AND MULTIFUNCTIONALITY OF OPEN SPACE USING SIMPLE TECHNIQUES IN GREEN BUILDINGS

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ABSTRACT: Energy conservation measures are developed for newly constructed buildings and for buildings under refurbishment. However, to achieve a significant reduction in energy consumption apart from the standard energy-efficiency methods, innovative technologies should be implemented, including renewable energy. One of the solutions is green buildings, which are designed to be healthier and more enjoyable working. To approach the idea of sustainable buildings, a few developmental steps are needed, regarding energy, water, land and material conservation, together with environmental loading, and the qualities of indoor and outdoor environments. The green buildings along with the improvement of productivity and multi-functionality of waste management are a good combination for a better future. Waste management in the residential and tertiary sectors is especially high in developed countries. There is a great potential from waste management in these sectors. PP-PON has a few programs to facilitate young people contribute in green life. The benefits of green area surrounding PPPO buildings is applied in waste management to produce green manure.

Key words: Green buildings, Compost, Simple Technique

1. INTRODUCTION

The development of building works in a modular fashion makes the repairing action of modifying materials or parts of works possible without destroying its basic structure. Coherency of standard, modern energy efficiency and renewable options becomes necessities. Green Buildings provide more financial benefits than conventional buildings. These benefits include energy and water savings, reduced waste, improved indoor environmental quality, greater employee comfort/productivity, reduced employee health costs and lower operations and maintenance costs [1].

As green goes mainstream, a standard building with a green open space will rapidly become valuable [2]. A green open space urban is spatial key elements [3]. Available land is used also as a means of greening and training programs. The lead program of reforestation is composting training conducted by the youth of the various communities. Many of the benefits that can be obtained when the whole society is able to maximize the use of natural materials around them included its waste [4]. Easy to obtain and inexpensive ingredients will need cost.

Youth Development Center and the National Sports (PP-PON) building has set an example by applying green building technology that is very easy on the greening of available land around it.

1.1. Open Space in PP-PON

Green land available in PP-PON provides a positive impact for the reduction of air pollution and greening. However, handling environmental waste generated from existing plants is also a challenge for PP-PON. A creative idea for making compost emerged as one of the brilliant strategy. The composting program as a solution to organic waste encouraged other creative programs to actively empower all aspects of society, especially the youth. In addition, the youth can express their concern about the environment green and health; they also can spur entrepreneurial spirit through the products, such as organic manure solid and organic manure liquid.

Good organic manure should contain elements of the main macro. These elements very difficult to obtain when only one type of raw material. Accordingly, there is no separation of organic waste leaves or plants originating in the territory of PP-PON.

The green buildings along with the improvement of productivity and multi-functionality of waste management are a good combination for a better future. Using open space and its waste to produce many benefits by youth is one of programs in PP-PON. Basically, plants are fertilized with compost also tend to be better quality than plants fertilized with chemical fertilizers.

2. MATERIAL AND METHOD

2.1. A simple technique to make compost

Time and Place: Pusat Pengembangan Pemuda dan Olahraga Nasional (PP-PON), State Minister of Youth and Sports Affairs of Republic of Indonesia, Jakarta Timur, Indonesia.

Materials Reagents: 200 kg of green leaves or kitchen waste, 10 kg of fine bran, ¼ kg sugar / brown sugar, ¼ liter of bacteria, and 200 liters of water or to taste. Procedure: Green leaves or chopped and soaked kitchen waste. Combine fine bran or bran with green leaves. Melt granulated sugar or brown sugar with water. Enter the bacteria into the water. Combine with liquid sugar or brown sugar. Stir until blended. Bacteria and sugar liquid sprayed on the mixture of green leaf / trash + bran. Stir until smooth, then stacked to a

height of 15-20 cm and sealed. Within 3-4 days of green manure finished and ready for use [5].

3. RESULT AND DISCUSSION

3.1. Benefits of Organic Manure, Compost

Compost has many benefits in terms of several aspects. For the plant, compost is like a multi-vitamin for agricultural land. Compost will improve soil fertility and stimulates healthy root. Compost improves soil structure by increasing soil organic matter content and will increase the ability of soil to maintain soil water content. The activity of soil microbes that are beneficial to plants will increase with the addition of compost. Microbial activity helps plants to absorb nutrients from the soil and produce compounds that can stimulate plant growth. Soil microbial activity is also known to help plants face the disease [6].

In economic aspects, it is save costs for transport and landfill, reducing the volume / size of waste, it have a higher selling price than the original material, being a cheap alternative businesses, so it can reduce unemployment and increase the number of entrepreneurs, and spur competitiveness in the agribusiness.

In the environmental aspects, it isreducing air pollution from burning waste, reducing the need for hoarding land, increasing the amount of oxygen because the plants will be more fertile, and optimizing culture of love cleanliness. Therefore, organic manure such as compost is not just made of organic materials, but should also work well on plants organically. Where manures are made from organic materials but does not involve the manufacture of biological decomposition process, but rather use a physical process, such as heating, extraction, evaporation and others.

3.1. Types of Organic Manure

There are two types of liquid organic manure that is made through the composting process. The first is liquid organic manure which is prepared by dissolving the organic manures that have been finished or semi-finished into the water. Type of manure that can be dissolved green manure, farmyard manure, compost or a mixture of everything. This kind of liquid organic manure characteristics is not much different from the solid organic manure, only its form is a liquid. In language more easily, something like tea dipped in water and then the water is used as manure.This type of suspension liquid manure solution is less stable and easy to settle. We cannot keep this type of manure in the long term. After so usually have to be used immediately. Its application is sprinkled with manure on the soil surface around the plant, not sprayed onto the leaves.

The second is liquid organic manure made from organic materials; they are fermented under anaerobic conditions with the help of living organisms. Raw materials from organic material have not been composted. Nutrients contained in the liquid manure solution of this type are really a liquid. So the solution is more stable. Ifleft to settle [7]. Therefore, the nature and characteristics were different with liquid manure made from solid manure dissolved in water. Liquid organic manure cannot be used as the primary manure in agriculture. We recommend using organic manure as manure-intensive primary / basic. Solid organic manure will be stored longer in the growing media and can provide nutrients for the long term. Meanwhile, the nutrients presents in the liquid manure is more susceptible to reduce erosion. But on the other hand, is more easily digested by the plant [8].

This of course requires a critical role of government in providing the right policy objectives. One strategy is to inform, familiarize greening awareness and train the youth is very important. This is realized by providing models, training facilities and infrastructure that exist in PP-PON, Jakarta.

4. CONCLUSION

An assessment is made of various grassroots and garbage foliage development initiatives in Indonesia which show that simple technologies can bring significant environmental and economic benefits to youth, fresh entrepreneur, and rural communities in the Indonesia. Strategies for the enhancement and exploitation of waste management of environment are assessed with attention to the likely timescales for realization of benefits in green manure. Apart from the unfortunate political and economic barriers to the use of green waste management, better communication between researchers, youth, and government is required to ensure proper focus of research and development of appropriate technologies, such as a simple technique of manure production of organic waste in available open space.

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