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EDUCATION ON THE MANUFACTURE AND APPLICATION OF ORGANIC FERTILIZER IN LUWUK VILLAGE BANTEN

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ABSTRAK

Luwuk Village is a village located in the Gunungsari district, Serang regency. The vital agriculture in this village is melinjo. Meanwhile, animal husbandry, buffalo, goats, and chickens are the main attractions in this village. The purpose of this service is to empower the Luwuk Village community to utilize household waste, livestock and agricultural waste that can be used as organic fertilizer. Organic fertilizer is expected to reduce the consumption of chemical fertilizers and increase soil fertility. It can control plant-disturbing organisms to increase the production of melinjo, which is the primary commodity for the people of Luwuk Village. The service method used is in the form of socialization and training in making organic fertilizers. The results achieved in the implementation of the service of the Application of Appropriate Technology for the Manufacture of Organic Fertilizer in Luwuk Village, Gunungsari District, Serang Regency are (1) the community can take advantage of waste into fertilizer;(2) utilization of fertilizer from household organic waste for agriculture; (4) environmental cleanliness from organic waste. The benefits of this service activity are: (1) For lecturers, they can contribute their knowledge and thoughts to the community; (2) For people in the Luwuk Village area, Gunungsari District, Serang Regency, they can produce compost independently and relatively cheaply from the processing results organic waste as a support for the processing of agricultural processes and agricultural products.
Keywords: Appropriate technology, organic fertilizer, education

INTRODUCTION

Luwuk Village is a village in Gunung Sari, Serang Regency. Luwuk Village is famous for the production of melinjo emping. This is because the majority of the people of Luwuk village are around 150 hectares of melinjo gardens out of a total plantation area of 220 hectares. To increase the quantity of melinjo production, farmers in Luwuk generally use chemical fertilizers. The continuous use of chemical fertilizers will reduce soil nutrients. Soil nutrients that are small cause the soil to become stiff and will undoubtedly reduce the mineral content in the soil needed by melinjo plants.

According to the Ministry of Environment and Forestry, the increase in the number of inhabitants is directly proportional to the amount of waste produced. Roughly speaking, with the current population of Indonesia more than 250 million people, if each person produces 0.7 kg/day of waste, then the national landfill reaches 175 thousand tons/day or is equivalent to 64 million tons/year. The percentage of organic waste, such as food waste, vegetables, fruits, paper, and wood, reaches 65.05 per cent. Meanwhile, non-organic waste, such as plastic, styrofoam, and iron, is around 34.95 per cent.

The waste contains many organic elements (organic waste), which can naturally

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be decomposed into stable materials.

Waste processing technology has been widely applied, but there are not many appropriate technologies for the understanding and applied power of the community. Therefore, innovations in waste processing technology that are appropriate and easy to apply on a household scale need to continue to be developed.

Applying appropriate technology to manufacture organic fertilizer in Luwuk Village, Gunung S ari District, Serang Regency, Banten Province, is one of the proposed community service programs. There are various models of waste treatment in the world. The waste processing model that will be used is composting. The following is an explanation of some of the waste processing models:

Composting is a biological process by microorganisms to convert organic solid waste into a stable product resembling hummus. Composting is an effort to activate microbial activities in order to be able to accelerate the process of decomposition of organic matter. What is meant by microbes here are bacteria, fungi and other services.

The composting process can be divided into two types: aerobic and anaerobic. Aerobic means that composting conditions require oxygen. Anaerobic means composting conditions without the aid of oxygen.

Composting in the taste is the most appropriate of the three waste processing models. It is planned, for the manufacturing process does not require a large area of land, and the composting process does not cause pollution, as well as the incineration method.

Therefore, the purpose of this service is to empower the Luwuk Village community to utilize household waste, livestock and agricultural waste that can be used as organic fertilizer. The organic fertilizer is expected to reduce the consumption of chemical fertilizers and increase the health of soil jellyfish and can affect plant-disturbing organisms to increase the production of melinjo, which is the primary commodity for the people of Luwuk Village

METHOD

The stages of service activities taken to implement solutions to existing problems are carried out by visiting the location of the activity, namely in Luwuk Village, Gunung Sari District, Serang Regency. Farmers in the area were invited to gather at the house of Mr RW, to be given training. The first day presented material on the intricacies of organic fertilizer and the potential of biological resources in Luwuk Village, Kecamatan Gunung Sari, Serang Regency, which can be organic fertilizer. Furthermore, examples/demonstrations are given on processing these biological materials (biological resources) with simple technology into organic fertilizers rich in elements.

UNIBA KKM students in group 26 are explaining the tools & materials needed for the process of making organic fertilizer

The approach method offered to solve the problem is the delivery of theoretical

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material (lecture) on organic fertilizers and the potential of biological resources in Luwuk Village, Gunung S ari District, Serang Regency, which has the potential to be organic fertilizer, then followed by demonstrations and direct practice of making organic fertilizer by farmers.

UNIBA KKM students in group 26 are explaining the contents contained in EM4 liquid & the advantages of EM4

Activities The tools necessary in the manufacture of organic fertilizers are as follows:

- Plastic buckets of 20 litres or more that have lids
- Rice sacks are made of synthetic fibres (sacks must be porous), or they can be large barrels.
- Wooden stick 50 cm long
- Rubber or plastic gloves
- Cloth mask1 piece

While the materials that need to be prepared in making organic fertilizer are:

- EM4
- Molasses1/2liter
- Sugar
- Organic household waste
- Weeds & dried leaves

EM4 activator is a material that contains several microorganisms that are very beneficial in the composting process. The benefits of EM4 itself can increase the fermentation of waste and organic waste, increase the availability of nutrients for plants, and suppress the activity of insects, pests and pathogenic microorganisms.

The stages of the process of composting household waste are as follows:

(1) Weighing 3 kg of manure and then pouring 20-30 kg of waste. Weighing bran as much as 0.5kg, then pouring on sample material as much as 20-30kg.
(2) Mixing drops of 100 ml and dissolve the EM-4 Activator / Decomposer as much as 40 ml 0.6 litres of clean water stirred thoroughly, poured on sorted garbage with a capacity of 20-30kg.
(3) The waste printing is stirred until it is flat and then printed on the printer that has been provided as needed and then trampled on.
(4) Furthermore, a PV pipe Cat, a tau bamboo, and a hole as an air cavity is given.
(5) Temperature measurement is carried out every day using an alcohol thermometer for ± 1-2 minutes which is plugged into the printed garbage with the temperature according to the provisions. On day 3 per day temperature size (<50 °C), the pile is turned over and watered. Day 6 temperature size (<50 °C) piles behind and watered,

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day to day nine less temperature (<50°C) the pile is turned over and watered, the 13th day enters the compost ripening temperature size (<50°C) the pile is turned behind and watered, the 16th day enters the compost maturation temperature size (<50°C) the pile is turned over, the 19th day enters the compost maturation temperature size (<50°C) the pile is turned over. According to the implementation in the field, the maturation process is 22-28 days a tau as a continuation of the implementation of the weathering process and advanced ripening with a temperature size (<50 °C / 55 ° C), reversed without watering.

(6) Day 21 to day 28 cooling is continued with paran inhibition until the fertilizer is completely dry.

(7) After the litter is dry, it is continued with sifting to produce fine compost.

The process of mixing EM4 liquid, granulated sugar & water used as a decomposing agent

RESULTS AND DISCUSSION

The results achieved from the implementation of the Application of Appropriate Technology for the Manufacture of Organic Fertilizer in Luwuk Village, Gunung Sari District, Serang Regency, Banten Province, are:

(1) The people of Luwuk village can classify the types of waste that can be processed independently and used as organic fertilizer.

(2) Luwuk village people can process household, livestock and agricultural waste into fertilizers with higher economic value and benefits.

(3) The people of Luwuk village acquired simple skills in producing organic fertilizer from existing waste.

Handover of EM4 liquid to the Chairman of RW for reuse by the surrounding community in making organic fertilizer

The results are in the form of organic fertilizer products documented in several

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stages of the organic waste composting process. The following will show the stages of composting organic waste to become ready-to-use organic fertilizer.

The composting process requires waktu for approximately 40 days. The manufacturing process begins with collecting waste from the community participating in service activities. The waste that has been collected must be ascertained the type, the type that can be used to make compost is the type of organic waste, so the waste to be processed into compost must be clean from plastic or chemical waste.

The organic waste that has been collected is then mixed with the supporting materials for making compost which has been described in the method section.

The composting process takes approximately 21 days, whereas, in this condition, compost cannot be used because the water content is still relatively high and the temperature is high. High temperatures are due to the composting process triggered by bacteria in the EM4 solution.

Compost that has been aged for 21 days, then removed from the container and continued the drying process by stretching on a sheet of tarpaulin that has been prepared. Drying is enough using sunlight. The drying process takes approximately 10-15 days. The dried fertiliser can be ascertained by grasping the compost and opening the grip. If the condition of the fertilizer did not coagulate when the grips opened, then the compost fertilizer can be used. For best results, the compost can be sifted to obtain finer and more homogeneous grains.

UNIBA KKM students group 26 photos with the Head of RW & residents of Luwuk Village

CONCLUSION

Berdasarkan hasil pelaksanaan kegiatan program kerja kepada masyarakat yang telah dilaksanakan disebuah sekolah yaitu di MIS GUPPI UMBIA yang ada di Desa

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Lunjen, kec,Buntu Batu dusun Rumbia pada tanggal 17 september 2021 - 20 September 2021 dapat disimpulkan bahwa kegiatan yang telah terlaksana meski dalam situasi pandemic COVID-19 yang dilaksanakan berjalan dengan baik dan lancar. Karena adanya,dukungan masyarakat dan para guru MIS GUPPI RUMBIA sngat baik terhadap program yang telah dilaksanakan. Hal ini dapat dilihat dari keikutsertaan membantu dalam pelaksanaakan program kerja kami.

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