



Agricultural Education and Practices for Making Organic Fertilizer in Sempu Hamlet, Cowek Village, Purwodadi District, Pasuruan Regency

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ABSTRAK:

Pupuk organik adalah pupuk yang berasal dari tumbuhan mati, kotoran hewan, limbah organik lainnya yang telah melalui proses rekayasa, dalam bentuk padat atau cair, dapat diperkaya dengan mineral dan mikroba yang berguna untuk meningkatkan kandungan hara dan bahan organik tanah serta memperbaiki properti fisik, kimia dan biologi tanah. Mayoritas masyarakat Desa Cowek, khususnya Dusun Sempu, bermata pencaharian sebagai petani. Mereka mengandalkan sawah dan ladang yang sebagian besar ditanami jagung. Petani masih menggunakan pupuk anorganik (kimia) dalam dosis besar tanpa diimbangi dengan pupuk organik. Tujuan dari kegiatan ini adalah untuk meningkatkan rasa tanggung jawab masyarakat untuk menjaga lingkungan dan juga memberikan pemahaman kepada masyarakat tentang cara membuat pupuk organik dari kotoran hewan. Metode pengabdianannya adalah dengan melakukan sosialisasi dan edukasi pertanian serta praktek pembuatan pupuk organik. Kegiatan Kuliah Kerja Nyata PAR 2022 telah berhasil dilaksanakan dengan output berupa peningkatan kesadaran masyarakat akan pentingnya menjaga kebersihan lingkungan dan pemanfaatan kotoran hewan menjadi pupuk organik.

Kata Kunci: Pemanfaatan, Kotoran Hewan, Pupuk Organik.

ABSTRACT:

Organic fertilizers are fertilizers derived from dead plants, animal dung, other organic wastes that have gone through an engineering process, in solid or liquid form, can be enriched with minerals and microbes that are useful for increasing the nutrient content and soil organic matter and improving physical properties, soil chemistry and biology. The majority of the people of Cowek Village, especially Sempu Hamlet, make a living as farmers. They rely on paddy fields and dry fields which are mostly planted with corn. Farmers still use inorganic fertilizers (chemical) in large doses without being balanced with organic fertilizers. The purpose of this activity is to increase the community's sense of responsibility to protect the environment and also provide understanding to the community about how to make organic fertilizer from animal waste. The method of service is to carry out socialization and agricultural education as well as the practice of making organic fertilizers. The PAR 2022 Real Work Lecture activity has been successfully carried out with the output of raising public awareness about the importance of maintaining environmental cleanliness and the use of animal waste into organic fertilizer.

Keywords: Utilization, Animal Manure, Organic Fertilizer.

INTRODUCTION

Cowek Village is one of the villages in the Purwodadi District, Pasuruan Regency with an area of about 1008.6 hectares. Most of the agricultural land is technically irrigated so that Cowek village is an area that has quite high agricultural productivity/products. Dusun Sempu is the most remote hamlet in Cowek village. The distance from the village hall office to Dusun Sempu has to cover 3.5 km accompanied by entering the Perhutani area with uphill and winding road conditions. Socio-economic conditions of the people of Cowek village, especially Sempu hamlet, are at the middle level. The majority of people make a living as farmers. The people of Sempu hamlet rely on rice fields and dry fields which are mostly planted with corn plants which have been passed down from generation to generation using irrigation from the mountains. Apart from farming, many people in Sempu hamlet also have livestock such as cows and goats in their homes. So far, the livestock manure is not used and thrown into the river. Livestock and agricultural waste, if not utilized, will have an impact on the environment in the form of air, water and soil pollution, become a source of disease, can spur an increase in methane gas and also interfere with aesthetics and comfort [1]. Livestock waste as the end result of livestock business has the potential to be managed into organic fertilizers such as compost which can be used to increase environmental carrying capacity, increase crop production, increase farmers' income and reduce the impact of pollution on the environment [1,2].

The community/Farmers of Sempu hamlet use inorganic fertilizers for their agriculture. farmers do not really understand that in the long term the use of inorganic fertilizers will erode nutrients and various important minerals in the soil, causing the soil to become less fertile and in the end this will result in low yields and even crop failure. Inorganic fertilizers contain nutrients that are in accordance with what is needed by farmers, but can have a negative impact on the environment, so it is necessary to use organic fertilizers to minimize the negative impacts. In addition, the price of inorganic fertilizers is increasingly soaring as well as its availability which is so limited that it is difficult for farmers to obtain them.

Organic fertilizer is the collective name for all types of organic material of plant and animal origin that can be converted into available nutrients for plants. In the Minister of Agriculture No.2/Pert/Hk.060/2/2006, concerning organic fertilizers and soil enhancers, it is stated that organic fertilizers are fertilizers which mostly or wholly consist of organic materials originating from plants and or animals that have gone through an engineering process, can be in solid or liquid form which is used to supply organic matter to improve the physical, chemical, and biological properties of soil [3][4].

In an effort to take part in this problem, in this case what academics can do is to conduct "agricultural education and the practice of making organic fertilizers".



Fig. 1. Rice fields planted with corn

METHOD

The training was carried out on Wednesday, March 02 2022, starting at 08.00-12.00 WIB which took place at the Babussalam Madin Lama Court by KKN PAR 2022 STAI Al Yasini students and in collaboration with the Food Security and Agriculture Office of BPP Kab. Pasuruan, Agung N and Yenny Putrining Rakhmawati, S.St. The activities carried out are divided into several stages:

1. Preparation Stage

The preparation stage is an activity before starting the implementation of the activity. At this stage, planning and preparation of the work program agenda will be carried out so that the work program has clear steps and processes and can run as planned. The activities at this stage include discussion of scheduling with lecturers and several students, collecting journals as literature, drafting interviews for the Sempu hamlet community. Then contact the Department of Food Security and Agriculture BPP Kab. Pasuruan to determine the day and date of implementation.

2. The Stage of Making Compost Fertilizer

Socialization and training on making organic fertilizer from livestock manure was delivered by Agung N and Yenny Putrining Rakhmawati, S.St. Farmers were given material about processing livestock manure into compost that is ready to be used on agricultural land. The socialization was given using power point media and discussions with farmers in Sempu hamlet, Cowek village. Processing livestock manure into organic fertilizer requires the following steps:

- a. Socialization of organic fertilizer program.
- b. Implementation of training on making organic organic fertilizer from cow dung.
- c. The practice of making organic fertilizer from cow dung and additives.



Fig.2. Socialization of organic fertilizer program

Stages of Making Organic Fertilizer

The manufacture of organic fertilizer begins with the collection of animal manure by harvesting from the cage, followed by processing into compost [5]. The materials and process for making compost are as follows:

1. Prepare a tarp as a base and to cover the compost so it doesn't get hit by rainwater.
2. Prepare tools: Bucket, hoe, shovel and watering can.
3. Prepare raw materials: livestock manure limbah.
4. Prepare EM4 . bacterial solution.

5. All ingredients are mixed evenly and then covered and stored in a place that is not exposed to rain water.
6. Fermented for 7-14 days. Under aerobic conditions, the fermentation will run quickly so that the temperature of the organic matter increases by 35-40 C. When the temperature is 50 C, the organic matter is inverted so that air enters and the temperature drops.
7. Packing into plastic bags and ready-to-use organic fertilizer.



Fig.3. Practice of making organic fertilizer

FINDINGS AND DISCUSSION

Agricultural education service activities and training on the manufacture of organic fertilizer from livestock manure are based on the accumulation of cow dung that is not utilized by residents and the use of inorganic fertilizers in paddy fields. Cow dung left too long will have a negative impact. Negative impacts can be in the form of air, soil, water pollution, and health problems [6]. The Community Service Program PAR 2022 in Cowek village is carried out in a structured manner and directly involves the community. The implementation of the 2022 PAR KKN program begins with program preparation which includes site surveys, observations and interviews. The survey results show that the obstacles faced by the people of Cowek village, one of which is the large amount of livestock manure that is thrown away without being used and the use of inorganic fertilizers in paddy fields. Seeing the existing problems, a work program was made to solve the problem of livestock manure, namely an agricultural education program and training in making organic fertilizer from livestock manure.

The following are the results of the agricultural education program and training in making organic fertilizer from livestock manure:

1. Awareness of the importance of protecting the environment
The training on making organic fertilizers has raised awareness for the community to be able to maintain a clean environment by utilizing animal manure that was previously only left or thrown into the river.
2. Awareness about the importance of using organic fertilizer
With the training on making organic fertilizers, it has raised awareness for farmer groups and the community to be able to maintain the fertility of agricultural land by reducing the use of inorganic fertilizers and making more use of livestock manure as a medium for making organic fertilizers.
3. The creation of an independent community in making organic fertilizer
People can know how to make organic fertilizer so that the end result can make their own organic fertilizer. This causes farmers to no longer depend on inorganic fertilizers, which are increasingly expensive and difficult to obtain due to limited space.

CONCLUSION

The conclusion of this activity is that the community/farmers are enthusiastic about the service program in this case counseling and making organic fertilizer from livestock manure to be applied on agricultural land. The practice of making organic fertilizers has been implemented and has worked well. Furthermore, farmers can independently carry out the process of making organic fertilizers. The presence of organic fertilizers can reduce the use of inorganic fertilizers. In addition, with this technology, farmers can save costs incurred for purchasing fertilizers and can maintain soil fertility.

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