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FAMILY COST EFFICIENCY WITH THE UTILIZATION OF LIQUID ORGANIC FERTILIZER WITH PHYTOHORMONES IN ENSURING COMMUNITY NUTRITION IMPROVEMENT THROUGH PLANTING ORGANIC VEGETABLES IN THE YARD

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Abstract

The purpose of this service is to cultivate organic vegetable plants in the yard so as to minimize family income and the application of liquid organic fertilizer using household kitchen spices or onion peels which are considered waste and household waste that is always discharged into the environment. The method used is Participatory Learning through Participatory Community partners with discussion, practice and demonstration materials. The results of this service increase the awareness of farmer groups and housewives and the community the importance of developing vegetable cultivation around the yard of the house, especially can increase income from selling vegetables and reduce family expenses in shopping organic vegetables for family needs. In making organic liquid fertilizer using waste or onion peels into organic liquid fertilizer, it is felt directly by partners and housewives and provides knowledge about the importance of onion peels and no longer throws onion peels into the environment which is considered household manure.

Keyword : Onion Peel, Yard, Organic Liquid Fertilizer, Vegetable Crops

INTRODUCTION

In maintaining the stability of plant yields, cultivation is very important to be able to produce vegetable and other agricultural plant materials (Munawir et al., 2022a). Budidaya sayuran merupakan pengembangan dan pembiakan yang dapat dibagi menjadi sayuran organic dan non organic (Munawir et al., 2023; Rusdiyanto et al., 2023). Vegetable cultivation is a development and breeding that can be divided into organic and non-organic vegetables (Munawir et al., 2022b). Non-organic vegetable crops are vegetable crops with cultivation using chemical mixing materials, especially pesticides and fertilizing with chemical base materials (Merpaung et al., 2020).

The function of cultivating this vegetable is to multiply the yield of vegetable crops. Plant cultivation is very important to develop an agricultural product so that it is more numerous (Rusdiyanto and Munawir., 2023). Plant cultivation can also be carried out in all community settlements with institutional strengthening (Munawir et al., 2021). Therefore, it is expected to apply all the stages previously described to be applicable so that it can produce good agricultural

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crops (Rusdiyanto et al., 2023).

Babakan Village is located in Ciseeng District, Bogor Regency. The village has easy access to the sub-district capital and the district capital, with distances of about 7 km and 30 km respectively. By motor vehicle, access to the capital, subdistrict, and district can be reached consecutively in about 15 minutes and 60 minutes. Administratively, Babakan Village has an area of 314,327 ha with coordinates located at 106.105547 BT and -6.4629247 LS. Although more than half of the area in Babakan Village is agricultural and land, with the main commodity being rice fields. Babakan village is also known to have a situ or reservoir that has long been the mainstay of Babakan village with an area larger than paddy fields.

Judging from the type of work, Babakan Village residents generally work as housewives who do not have jobs and are self-employed. Here are ten types of dominant occupations of the people in this village.

Table 1. Ten types of jobs are dominant from the community in Babakan Village

No.	Types of Jobs	Man	Woman	Total
1.	Farmer	197	167	364
2.	Farmworker	273	265	538
3.	PNS	103	84	187
4.	Gophers	167	104	271
5.	Employees of private enterprises (factory workers)	48	21	69
6.	Small, medium and large entrepreneurs	2323	0	2323
7.	Traditional shamans	5	0	5
8.	Craftsmen	64	126	190
9.	Breeder	14	6	20
10.	Mechanic	17	0	17
11.	Private midwives	3	2	5
12.	TNI	4	0	4
13.	Polri	3	0	3
14.	Housekeeper	212	43	255
	Total amount	3.433	818	4251

Source: Anonim (2022).

Babakan Village is very suitable to be used as a place for Community Service activities (PkM) In the form of utilizing yard land to plant vegetable crops to meet daily needs and minimize the daily expenses of the people in this village on vegetable consumption. This is because residents in this village generally make a living as farmers, farm laborers, and so on. Based on the results of observations in the field as a preliminary study, their income ranges from Rp. 1.500.000,- to Rp. 3.000.000,- per month. This amount is relatively low compared to the amount needed to meet the minimum standards for decent living.

In the implementation of service with the cultivation of vegetable tantanan dpaan reduce the burden of life, especially for residents who do not have income, plus the need for food must

still be met, The right cultivation technique is to minimize the potential of the yard around the house, namely doing vegetable cultivation business. With this business, in addition to being able to meet their needs for vegetables, some of what is produced from growing vegetables can also be sold to increase family income.

Figure 1. The condition of the yards of residents' houses in Babakan Village

The existence of yard land owned by residents of Babakan Village in Bogor Regency is generally quite large, making it potential to be used to grow vegetable crops, such as spinach, chilies, tomatoes, kale, pok coy, caisim, salada and sledri. In addition, the number of community members in this village who have not worked and the number of housewives who do not work is quite large, also become potential as human resources who can manage their yard land to be useful for themselves.

Efforts to empower the residents of Babakan Village through vegetable planting activities in their yards are very important so that residents in this village can consume vegetables to meet vegetable food intake without having to buy them. Through the use of this yard land, it is hoped that the community will be able to be self-sufficient in vegetables and they can save their expenses, and even if the vegetable production they produce exceeds what they need, they can sell it so as to increase their income.

Vegetable plants that can be cultivated in the yard of the residents of Babakan Village, of course, short-lived vegetables, are preferred, besides having economic value. These types of vegetables such as spinach, kale, chili, tomato, pok coy, caisim, salada and sledri. These plants include plants that are very easy to cultivate by verticulture, namely using shelves with planting media placed in buckets, aqua glasses and used gallon pieces. Through this way, the number of plants planted can vary within 1 shelf. In addition, the display of shelves with vegetable plants on the shelves can be a special attraction that can motivate residents in this village to maintain them. The purpose of implementing this service can be useful for the community in general, especially the Babakan Village group by carrying out vegetable cultivation activities in the yard around each resident's house and applying liquid organic fertilizer using household kitchen spices or onion peels which are considered waste or household waste that is always disposed of into the environment, so that they can feel directly the benefits of organic vegetable cultivation.

IMPLEMENTATION METHOD

Participatory Learning (Nursyamsu, 2018) in (Munawir et al, 2022a). This method includes discussion activities with the community and farmer groups about the importance of vegetable planting techniques in cultivating organic vegetables in the yard.

The object of service activities is the Babakan Village Farmer group, Ciseeng District, Bogor Regency. The target target is as many as 30 people.

The stages of this service activity consist of 4 stages, including: first, distributing invitations to all members of the Babakan Village farmer group containing information related to the theme, time, and place of service activities. Second, the delivery of activity material on vegetable planting techniques with the cultivation of phytohormone organic vegetable plants, the importance of the benefits of cultivating organic vegetable plants in the yard, the benefits of making vegetable planting media as a source and process of growing vegetables. Third, practice related to how to make phytohormone manure is carried out through fermentation using EM4, corn refinement, granulated sugar and then further practice of growing organic vegetables and how to use fitohormone liquid fertilizer on plants in the yard. Fourth, the delivery of material and the distribution of satisfaction questionnaire questionnaires about the importance of phytohormone-based organic plants by not using organic materials and the results of organic crop production that can increase family income.

In addition to the activities of providing knowledge and skills to residents completed, monitoring activities will be carried out twice. This activity is intended to obtain information whether any of these Abdimas participants experience problems in following up on this Abdimas activity. Monitoring is planned to be carried out 3-5 months after the transfer of seedlings to pots or soil.

RESULTS AND DISCUSSION

Service activities for farmer groups and housewives of residents of Babakan Village, Ciseeng District, Bogor Regency by planting organic vegetable plants in the yard using liquid organic fertilizer with phytohormones so that they can become income for the community, especially housewives and farmer groups so as to minimize family expenses.

Figure 2. Implementation of Service and Training

This Community Service was carried out well with the participation of training and cultivation attended by 30 members of farmer groups and 20 housewives who were members of the recitation mothers, initially we invited 30 farmer groups due to the high enthusiasm of the participants reaching 50 people, this shows that the farmer group and surrounding residents are very enthusiastic to take part in this training. The stages of service implementation include:

1. Making Liquid Organic Fertilizer (POC)
    - Preparing waste onion peels, EM4, Corn, Gulas Pasir dan Jeregan or Gallon with a storage range of ±20 Liters of Water.
    - 3 kg of corn is sliced into seeds with a knife (the weevil is removed).
    - The corn slices are crushed with a blender using 1 liter of water.
    - Shallot peel and corn puree are put into jerry cans or gallons of ±20 liters, then added 1 bottle of EM4, 250 g of sugar, and 18 liters of water. Then it is shaken so that the contents are evenly mixed. Then it is closed and allowed to stand for 7-14 days. Every 1-2 days these jerry cans/gallons are shaken.
    - After 7-14 days, the ingredients in jerry cans are ready to be used as fitohormone liquid organic fertilizer at a dose of 1/4 cup mixed with 1 liter of water. Each plant is given 200 ml of a solution of this fertilizer.
2. Training on Seeding and Plant Cultivation using POC
    - Prepare plastic bastards with holes, hoes, small shovels and plant watering tools (sprayer)
    - Preparing vegetable seeds (Cayenne Pepper, Pepper, Chili, Tomato, Pok Coy, Eggplant, Red Long Bean), soil, compost and manure.
    - Compost and manure are mixed evenly in a ratio of 1: 1 then mixed with soil in a ratio of 1: 1
    - Besek filled with a mixture produced from soil mixture, then at the top spread vegetable seeds, after which covered with a mixture produced from soil and compost / organic fertilizer 1 cm thick.
    - Besek that has been filled with vegetable seeds is watered with a plant sprinkler (sprayer).
    - Watering using POC and done in the morning, done for 1 month. Each plant is given 200 ml of liquid organic fertilizer solution.
    - After the vegetable seeds grow and are 1 month old, they will be transferred to pots, soil or temporary enlargement places (plastic buckets / cups).

Fitohormone Liquid Organic Fertilizer Training

The benefits of this phytohormone liquid fertilizer training can improve the skills of farmer groups and housewives in cultivating yard plants so as to ensure the growth and production of organic vegetable plants, on the other hand it becomes an easy application to do because it is only made from spices from kitchen ingredients that are very easy to obtain and are always available as daily consumption, especially waste or onion peels. Liquid organic fertilizer (POC) from onion peel is extracted and prepared in containers to be ready to be used as liquid fertilizer by mixing EM4, corn that has been separated from the hump and mashed and

given additional granulated sugar then stored for approximately 7-14 days and controlled every 1-2 days to then be ready for use. In line with the opinion of Noviansyah and Chalimah (2015) that onion peels which are considered as waste or dirt that are thrown away can be used as POC which through fermentation can increase the production of organic vegetable crops so as to improve the welfare of farmer groups and housewives to minimize family expenses.

Figure 3. Organic Liquid Fertilizer with Waste Fitohormone/Shallot Skin

Direct benefits of Liquid Organic Fertilizer and Organic Plant Cultivation

The benefits of fitohormone liquid organic fertilizer using waste or waste onion peel are not only useful as plant root stimulants, but also can divert pests of organic vegetable plant diseases (Alif, 2017). Another benefit is to increase the nutrient content of the top layer of soil which is a layer containing many nutrients (Yolanda et., 2019). The use of liquid organic fertilizer also plays an important role in caring for and maintaining the level of soil fertility that is already in a state of nutrient deficiency in the soil (Rinzani et al, 2020; Yolanda et al., 2019). After carrying out the training stages for making organic liquid fertilizer, the next is the process of planting and cultivating organic plants, especially Cayenne Pepper, Pepper, Chili, Tomato, Pok Coy, Eggplant, Kale, and other organic plants that are useful for the daily nutritional needs of the community. Implementation is carried out from the stage of preparation of seedlings to planting medium, plant maintenance is carried out until the growth of the crop by performing growth control using phytohormone liquid organic fertilizer from onion peel waste that has been fermented. The results provide satisfaction to some groups of farmers by showing that the crop can grow well and be ready for harvest and can be used as a nutritional fulfillment of the family and can be sold to the surrounding community.

Figure 4. Organic Plant Growth Around the Yard
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Perceptions of Farmer Groups and Housewives on the Implementation of Community Service

Development of organic vegetable cultivation as an effort to optimize food security and organic plant cultivation in farmer groups and housewives by utilizing household materials such as waste or onion peel waste to be used as liquid organic fertilizer so as to increase plant growth and minimize family expenditure levels.

Cultivating organic plants with the use of liquid organic fertilizer and supported by plant cultivation techniques in stages, starting with the implementation of consistent watering, and applying liquid organic fertilizer When run continuously will ensure an increase in farmer group income and minimize household expenses because organic vegetable cooking materials are available in the yard of the house. The farmers and housewives of Babakan village have been well organized, so that the cultivation of plants with onion peel spice ingredients used as liquid organic fertilizer can guarantee the growth and production of the main garden crops organic vegetables that are perfect for the implementation of community service in a good, familiar and consistent manner. The continuous development of organic vegetable crop cultivation needs to be improved, so that in the implementation of mentoring the service activities carried out always run smoothly, for that to know the smoothness and success and the level of satisfaction of the groups of farmers and housewives, a questionnaire is created that is distributed after the implementation of the mentoring.

The questionnaire contains questions related to liquid organic fertilizer training, understanding of organic vegetable cultivation techniques and the direct benefits of growing organic vegetables using waste liquid organic fertilizer or onion peels in their respective yards.

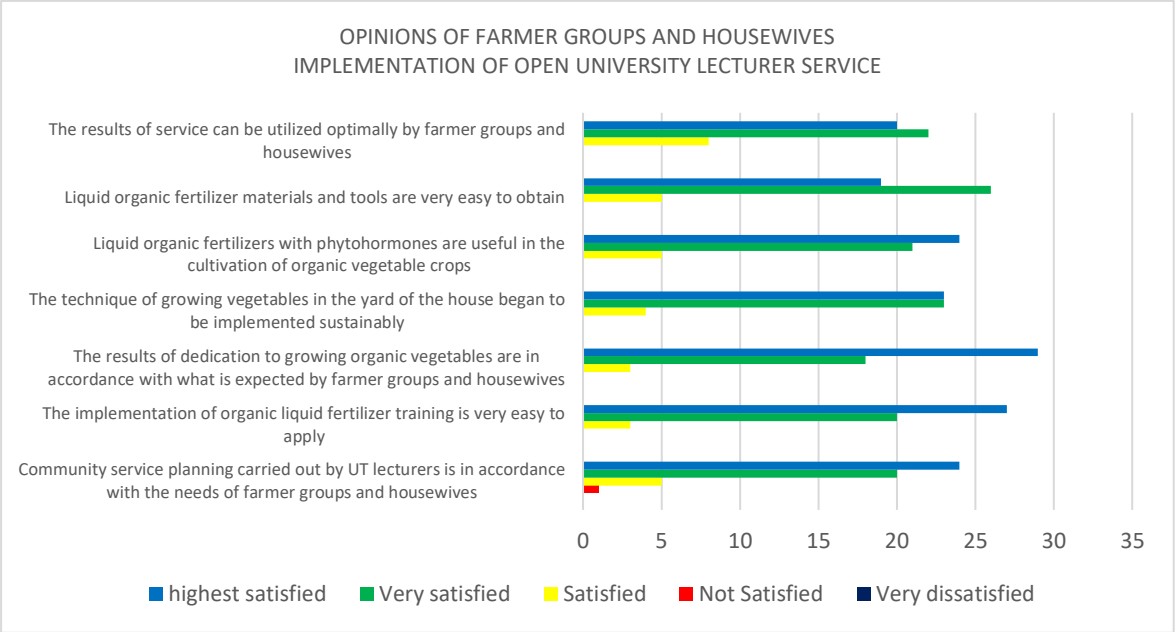

Figure 5. Opinions of Farmer Groups and Housewives
Implementation of Open University Lecturer Service.

The results of filling out a questionnaire survey of farmers and housewives of Babakan Village on the bar chart above, show that the respondents who had the highest satisfaction were in "the results of serving organic vegetables in accordance with what the farmers and housewives expected" and the second is related to "the implementation of organic liquid fertilizer training is very easy to apply" This shows that the farmers and housewives of Babakan village have a sufficient understanding high resistance to organic crop cultivation and application techniques liquid organic fertilizer from waste/onion husks. For this reason, the groups of farmers and housewives received the initiative regarding the cultivation of organic vegetable crops as an effort to optimize the cultivation of vegetables in the yard in a sustainable way and become one of the income for the groups of farmers and housewives by utilizing the yard land. Therefore, this devotional activity is in great demand and raises awareness among farmers and housewives with organic vegetable cultivation techniques and liquid organic fertilizer application techniques using spice ingredients from onion skins, it can realize the improvement of the character of people's habits patterns that often onion peel is simply thrown away, without realizing it can have an impact on environmental pollution. The implementation of devotions can change the mindset so that household waste can be used as a benefit apply liquid organic fertilizers. The implementation of this community service becomes a scientific learning for farmers and housewives and the whole community can sustainably benefit from the training conducted by the community service team, so that they will apply the technique in a sustainable way in the home yards.

CONCLUSION

The implementation of service by planting organic vegetables in the yard using phytohormone liquid fertilizers increases the awareness of the community and housewives of the importance of developing vegetable crops around the main home yard can increase the income of the farmer group and reduce the family expenses in carrying out organic vegetable spending for family needs. In the manufacture of organic liquid fertilizer using waste or onion peel into organic liquid fertilizer felt directly by the partner and the housewife will be important her onion peel and no longer throw away the red skin under the curvature that is considered to be household dirt. The service team took the initiative to improve the understanding of the rest of the Society in the process of making organic liquid fertilizer where there are many other household wastes that can be used as organic liquid fertilizer and then applied to vegetable crops so that they will get a quality fresh crop with a very economical capital. In addition to providing economic value, organic vegetable growing techniques around the yard can also provide a beautiful atmosphere. So that it can provide a calm and comfortable atmosphere in each home environment.

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