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SOCIALIZATION OF LAND USE BY APPLYING MODERN AGRICULTURE WITH HYDROPONIC CULTIVATION

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Abstract

Community service is an activity that realizes and improves the quality of community knowledge in helping the problems experienced by the community in the community. Through the Thematic Real Work Lecture (KKNT) program based on community service, this activity is to increase students' sense of solidarity with the existing conditions of the community. The use of land with hydroponic cultivation is an alternative that can be done by utilizing minimal yard land and being able to use used goods. Farming with hydroponics is very environmentally friendly in addition to not using pesticides, also the production can be used alone or as an economic source of household income. In addition, the outputs obtainedare n: (1) Improvement of superior quality of resources; (2) improving household economic resources; (3) Encourage the progress of the village. On the other hand, to ensure the discipline and participation of KKNT student participants and the community, by seeing the success in the form of outputs produced.

Keywords: *Real Work Lecture, Hydroponic Cultivation*

INTRODUCTION

Students of Asahan University, Faculty of Agriculture carry out the 2022 Thematic Real Work Lecture (KKNT) program in the Bahung Sibatu–Batu area, one of which is located in Sei Dadap District, Asahan Regency, North Sumatra Province. This KKNT program focuses on socialization activities and training on how to use land by hydroponic cultivation with the type of mustard pakcoy plant to increase public awareness to be able to use abandoned land so that it can be used and build a household economy (Maya et al., 2018; Saputro et al., 2015).

According Gumisiriza et al., (2023) Hydroponics is a cultivation method that does not use soil media, but uses water / nutrient mineral solution needed by plants and other materials as a substitute for soil media that contains nutrients such as coconut husk, mineral fiber. In this cultivation, Rockwool media is used which has advantages over other media because it has an ideal water composition ratio (Putra et al., 2019).

According to Sajogyo, (1994) in Putra et al., (2019) Land is a piece of land around the house that can still be cultivated regularly. The yard is also defined as a piece of land located directly around the dwelling and its boundaries. Because it is located around the house, the yard is a land that is easy for all family members to cultivate by taking advantage of the available time. It is very possible to carry out hydroponic planting on the yard land.

Hydroponics is a way of agricultural cultivation without using soil media, so it is only carried out by using nutritious water as a soil replacement medium (Kováčik et al., 2022). So that the hydroponic farming system can take advantage of narrow land. Agriculture using a hydroponic system does not require a large area of land, but in the agricultural business it is worth considering because it can be done in yards, houses, roofs or other land (McClure et al., 2023). Some of the advantages of hydroponic farming compared to planting using soil media are that pest and disease problems can be reduced (Bahri et al., 2022). There are many types of plants that can be grown by hydroponics, such as lettuce, spinach, pakcoy, kale and others. Vegetables are food ingredients that are very beneficial for the body. This type of plant that is usually a companion to rice is known to have many nutritional contents that other foodstuffs

do not have. Sumarno and Jahari (2001) explained in Parma, Mahardika, Armawan, & Novia, (2021) vegetables include fiber which is useful for improving digestion, preventing and reducing the risk of disease.

Mustard is a type of vegetable that is widely produced using a hydroponic system. The prospect of this plant is very potential to be developed due to market demand and high prices when compared to other types of mustard. Pakchoi planting using an axis system showed better results compared to the DFT hydroponic system *(Deep Flow Technique)* (Madusari et al., 2020).

Hydroponics is applied to urban and rural areas which are economical in water and easy to maintain and can harvest all year round. There is a need to utilize yards for hydroponic vegetable cultivation where so far the yards have only been planted with ornamental flowers and shade trees. Likewise with the work of the community, especially mothers only as housewives. Based on the advantages of hydroponics, the community has the opportunity to increase income by utilizing their yards. In addition, the commodities produced have high economic value and meet health standards (Christianingrum, 2019).

METHOD RESEARCH

The method for implementing the work program of KKNT activities is the delivery of hydroponic materials, direct discussions with target participants, hands-on practice of sowing hydroponic pakcoy mustard seeds and planting mature plants in hydroponic growing media, as well as technical guidance and assistance (Kadir & Irawati, 2022).

RESULT AND DISCUSSION

Group 4 Thematic Real Work Lecture (KKNT) of the Faculty of Agriculture, University of Asahan which simultaneously raises awareness and raises community resources in Bahun Sibatu - Batu Village to improve the quality of knowledge and support the household economy for the community. This activity was carried out at the Dusun II Nutrition Park, Bahung Sibatu – Batu Village for socialization and hands-on practice, which was attended by the Dusun II PKK mothers.

This activity was carried out as a step to build a more effective future economy by utilizing narrow yards that could be converted into land that could be used as a generator for the household economy. From several series of events, starting from the initial opening to how to carry out the seeding and planting, the community, especially the PKK women, were very enthusiastic in participating in the series of activities that were made.

CONCLUSION

The Community Service Program (KKN) in Bahung Sibatu - Batu Village aims to raise awareness and produce dominant and quality resources in the Bahung Sibatu - Batu Village community to improve the quality of knowledge and support the household economy. Awareness of human resources on the importance of utilizing land which is narrow to make one of the efforts in developing a modern farming system with hydroponic cultivation which is very practical and environmentally friendly.

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