

Socialization And Training With Verticulture Agricultural Methods in Jetis Dau District Of Malang Regency During The Covid-19 Pandemic

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ABSTRACT

The purpose of this service program is to socialize verticulture agriculture to the jetis community during the covid-19 pandemic so that they can grow crops in home yards that have relatively small land. In the simple model, the basic structure used is easy to follow and the materials are easy to find, so it can be applied in homes. Additional systems that require special skills and knowledge, for example the use of hydroponic systems or drip irrigation.

INTRODUCTION

Self-contained garden can be done by utilizing the home yard starting from organic vegetable gardening. Gardening organic vegetables in the yard is easy to do, even by housewives. With training, the community can directly practice it even without a qualified agricultural science education background. It is said that gardening in the yard during a pandemic can be a family food solution, especially in times of difficulty obtaining healthy vegetables that feel safe to consume (Chandra, 2020). The World Health Organization

(WHO) declared Covid-19 a pandemic after 200,000 patients were confirmed to have the virus and 8,000 deaths in more than 160 countries (Spinelli & Pellino, 2020).

Advantages of verticulture agricultural system: **(1)**. Efficiency in land use. **(2)** Savings in the use of fertilizers and pesticides. **(3)** It can be moved easily because the plant is placed in a certain container. **(4)** Easy in terms of monitoring / maintenance of plants. Plant cultivation systems that are done vertically or multi-storey can be done indoors or outdoors. This vertical or multilevel plant cultivation system is a greening concept that is suitable for urban areas and limited land. For example, a 1 meter land might only be able to plant 5 stems of plants, with a vertical system can be for 20 plant stems. Verticulture farming is not only a source of food but also creates a pleasant natural atmosphere. Models, materials, sizes, verticulture containers are very much, staying adapted to conditions and desires.

The application of verticulture cultivation in yards or narrow land has been successfully implemented by several previous researchers. It appears that this verticulture planting technique is easy to apply, as Hadi et al. have introduced vegetable gardening verticulture to students of SDN 3 Bancakembar, North Purwokerto Subdistrict, Banyumas Regency (Hadi, Rahayu, & Widiyawati, 2017). Ichwan et al. use verticulture media for the cultivation of onion plants (Ichwan, et al., 2020), Khalil and Wahhab chose the concept of vertical farming as a solution to the limited green area in Baghdad City (Khalil & Wahhab, 2020), and made verticulture as an agricultural preference for people in urban areas such as Malang city (Giriwati, Citraningrum, & Syabudi, 2018).

Currently verticulture has become the choice of urban communities to plant as well as a solution to the limited land they have. Basically a vertical system can provide maximum results if it is cared for properly. In accordance with the origin of the word from English, verticulture is a system of agricultural cultivation that is carried out vertically or stratified, both indoor and outdoor. This vertical or stratified agricultural cultivation system is a greening concept that is suitable for urban areas and limited land. For example, 1 meter of land may only be able to plant 5 plants, with a vertical system it can be for 20 plants. Verticulture is not just a vertical garden, but this idea will stimulate someone to create a treasure trove of biodiversity in even a narrow yard.

Each farming system has its own advantages and disadvantages. This also applies to verticulture. Therefore, before you decide to plant vertically, you need to know the advantages and disadvantages as a basic insight.

Excess

Because it is arranged vertically, this farming system can clearly make land use efficient. Planting that is done vertically can prevent weed growth so you don't have to weed too often. If the container used is a pot or polybag, the plant is easy to move to another place. This system can make the use of fertilizer more efficient because the fertilizer is directly given in the container so that the fertilizer is not easily washed off. These savings also apply to pesticides because the planting media used is more sterile. A vertical roof using a roof can make it easier for you to prevent plants from being damaged by rain. Meanwhile, plants that are placed indoors can help you to save on watering because evaporation is reduced. The appearance of a vertical installation can also add to the aesthetic value of the home yard. Maintenance is also fairly easy because the plants are in the same location.

Lack

Plants must be cared for continuously and intensively. Therefore, you need to regularly provide fertilizer and watering, especially on roofed verticultures or with greenhouses. Intensive treatment is more difficult than conventional treatment because it requires a high level of patience. Because they are easy to move, plants can easily break or damage if not treated properly. Therefore, the plant should not be moved too often. You have to carefully design the installation before it is used for planting. The investment required is quite large because vertical installation requires more equipment than conventional farming. Moreover, if you plant in a greenhouse building.

METHOD

Approach methods for the implementation of community service activities in this Socialisani scheme include the method of lectures, discussions, and workshops (training). The method of lectures and discussions is carried out on socialization activities

verticulture farming methods. The method used in this activity is to use the workshop method through the form of intensive socialization, training, and mentoring ranging from introduction to application on land. The method of lectures, discussions, and workshops used is carried out for 2 days with the structure of the program of the implementation of this activity as follows.

Table 1. Structure of Socialization of Verticulture

No	Material	Activities	Time	Number of Participants
Meeting 1				
1	Introduction to Verticulture Agriculture	1. Socialization (presentation) 2. Focus Group Discussion (FGD)	15 minutes	18
2	Introduction to Verticulture Farming Methods	1. Presentation 2. Focus Group Discussion (FGD)	15 minutes	18
3	Socialization of Verticulture	1. Theory	15 minutes	18
Meeting 2				
1	Planting Mustard using methods Model Wall gardening	1. Simulation (Demonstration) 2. Focus Group Discussion (FGD)	1 hour	18
2	How to apply propagation Metode Model Wall gardening	1. Theory 2. Practice	2 hour	18
Meeting 3				
1	Simple mousetrap socialization	1. Theory 2. Practice	2 hour	18
2	Simple manufacture of rat tools	1. Theory 2. Practice	3 hour	18

No	Material	Activities	Time	Number of Participants
	Total		8 hour 45 minute	18

The implementation of community service activities is participant, where the service team and partners are together and proactive to be involved in each activity.

Table 2. Socialization Activities Implementation Plan (Poktan Pakis-Gisikan)

No	Type of Activity	Document Proof	Implementation Time
1	Initial coordination or observation to the location of devotion and devotion permit	Letter of willingness of cooperation	March 11, 2020
2	Drafting correspondence	Letter to POKTAN	March 15, 2020
3	Purchase of the tools needed to Community service socialization activities themed Verticulture Agriculture	Tools and Materials of Socialization of Mikoriza Biological Agent Fertilizer	March 15, 2020
4	Implementation of Verticulture Agricultural Socialization activities	List present, Socialization materials / presentation, activity photo	March 23, 2020

Table 3. Design of Socialization Activities (Poktan Banjarsari)

No	Type of Activity	Document Proof	Implementation Time
1	Initial coordination or observation to the location devotion and permission of devotion	Letter of willingness of cooperation	March 11, 2020
2	Drafting correspondence	Letter to POKTAN	March 24, 2020
3	Purchase of tools needed for community service socialization activities verticulture methods	Tools and Materials of Socialization of Verticulture Methods	March 11, 2020
4	Implementation of Socialization activities of Verticulture Methods	Attendance list, Socialization/presenta tion materials, Photos Activities	March 25, 2020

The evaluation design of the description at the stage of community service activities in this Workshop scheme is carried out using several assessment instruments at each stage of the activity. Assessment instruments at the stage of the activity in the form of response questionnaires from trainees.

RESULTS AND DISCUSSIONS

Community service activities in the Verticulture method Agricultural Socialization scheme have been carried out on March 23 and 25, 2020. This activity consists of several stages that have been done as follows.

A. Making Media Verticulture and Seed Rejuvenation

Verticulture media made in the form of large pipes and small pipes made of white PVC. Large pipes are made as high as 1 meter and perforated with a zigzag position paired with a distance of 15 cm between holes. Then the provision of small paralon pipes that have been perforated is placed in the middle of a large pipe to assist in watering and fertilization. From each small pipe hole is given a

stove wick that extends from the plant hole to the jar at the bottom for water and nutrients. A series of large pipes, small pipes, and jars are further placed in large black pots.

B. Stage of Extension and Delivery of Materials

At Extension Delivered about about introduction verticulture, introduction various media verticulture, and technical cultivation in verticulture by Instructor from Faculty Agriculture Islamic University of Malang. Participants enthusiastic towards Exposure material Extension and listening for Activities last. At moment discussion, illustrated that View Their about technical cultivation verticulture be thing that new for friend and pull to Practiced. Tanya answer Done between Sources with Participants/friend after Exposure material. Participants/friend Alternating Ask question, show there is Activities discussion active. Question that appear between other: when time that true to Watering plant of media verticulture?; how face Fertilization plant of media verticulture?; whether media plant necessary Replaced in Periodic?; and whether deep one media verticulture get Planted one kind or some kind vegetables?. Every question get Answered and di jelakan by tim Executive until Participants/friend feel understand

C. Training and Practice Stage

The practice of planting in media verticulture begins with the instructor showing the media demplot. After that continued with the instructor demonstrating the manufacture of planting media, the transfer of seedlings from rejuvenation to verticulture media, watering of plants through capillary pipes, and the manufacture of plant nutrients from AB Mix for fertilization. Participants/partners practice directly according to instructions. Planting media consists of a mixture of soil and compost with a ratio of 1: 1. While the verticulture media in the form of paralons equipped with stove axes in the middle. The axis of this stove as a capillary medium to facilitate channeling liquid fertilizer to planting points in the verticulture media. The ease of roots to absorb nutrients and water has an effect on plant growth (Ichwan et al., 2020). After the practice of preparing planting

media, participants / partners put the material into the verticulture media and mediamnya for one week. Because planting media needs to be silenced first, the devotional team has prepared a verticulture planting media that has been ready to be planted.

D. Stages of Plant Supervision and Care

Supervision and care of plants after training activities is aimed at ensuring the survival of plants that have been grown in the medium of verticulture. Supervision and care also aims to foster a sense of care and responsibility towards the plants that have been planted. It is useful to solidify verticulture cultivation as one of the gardening solutions in an urban context (Khalil & Wahhab, 2020).

Table 4. Responding After Socialization Activities

N o	Description	Average Score
1	Ability to understand the Verticulture Method	3.6
2	Ability to apply	3.4
3	Ability to multiply	3.7
4	Ability to explain the benefits of the Verticulture Method	3.2
Information: 70% of trainees have good skills 30% of trainees have pretty good skills		

CONCLUSION

Through Socialist activities and verticulture cultivation training, participants / partners have succeeded in acquiring new knowledge. Participants / partners have been quite able to practice verticulture cultivation in the yard independently in the future. Concern for plants that have been planted is considered good indicated by the active role of participants / partners during the stage of supervision and care.

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