

## YOUNG FARMER MOVEMENT OF MUHAMMADIYAH SIDOARJO BY HYDROPONIC URBAN FARMING

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### Abstract:

Young Farmer Movement of Muhammadiyah is under The head of the Muhammadiyah student association is in the Candi sub-district area of Sidoarjo regency which is a densely populated area and agricultural land turned into buildings and buildings. Agricultural activities must run even though environmental conditions are less supportive. The Muhammadiyah Student Association must start knowing, knowing, practicing and ready to become a cadre of young farmers because as a young cadre of Muhammadiyah at the forefront of the Muhammadiyah organization. The purpose of dedication is to introduce and practice hydroponic urban farming to harvest, post-harvest and product marketing. The basic problems for partners are: Lack of knowledge about the use of narrow land for hydroponic cultivation, manufacturing Nutrition and product marketing. The implementation methods used include counseling, training and practice as well as facilitation of supporting materials. Cultivation technology applied in yard utilization, namely hydroponics, making AB MIX nutrients and product marketing. The implementation of this service was attended by 25 teenagers who joined the Young Farmers of Muhammadiyah under the auspices of IPM Sidoarjo Candi.

**Keywords:** *Young Farmer, Urban Farming, IPM*

### INTRODUCTION

The Muhammadiyah Student Association Branch is located in the Candi sub-district of Sidoarjo district, which is a densely populated area and agricultural land has been converted into buildings and structures. Agricultural activities began to fade with the reduction of agricultural land. Many senior farmers have switched professions and there are only a few of them left. So students or youth have a role in changing agriculture even though on a small scale, namely hydroponics (Arniati et al. 2016).

Agricultural activities must continue despite unfavorable environmental conditions. The Muhammadiyah Student Association must begin to know, recognize, practice and be ready to become a cadre of young farmers because as a young Muhammadiyah cadre at the forefront of the Muhammadiyah order.

Students or youth have a role in changing environmental conditions (Sapara, Lumintang, and Paat 2020).

Hydroponic urban farming is a system of growing crops without using soil as the main growing medium. This method utilizes nutrient-rich water and delivers the right nutrients directly to the plants. This allows for faster and more productive plant growth in limited spaces, such as urban areas (Sulistiadi et al. 2020). Urban farming for young farmers Muhammadiyah seeks to introduce and educate the community, especially the youth, about the importance of urban farming and hydroponic methods. They provide training, workshops, and mentoring to young farmers who are interested in engaging in hydroponic urban farming (Surtinah 2019).

One way is by introducing hydroponic cultivation which is characterized as clean cultivation without being dirty. One of the hygienic and pesticide-free cultivation methods is hydroponics. Hydroponic cultivation was developed in the modern era. Hydroponics is a simple and portable cultivation model. Hydroponic farming is a very open market opportunity and a healthy lifestyle (Koesriharti and Istiqomah 2016). Hydroponics is an alternative cultivation technique that is efficient and appropriate because one of them does not use soil media. The most appropriate hydroponic system for tomatoes is the drip system. Hydroponic cultivation was developed in the modern era. Hydroponics is a simple and portable cultivation model (Herwibowo and Budiana 2015). Narrow land, clean and sterile media (Susilawati 2019). Hydroponic farming offers market opportunities and a healthy lifestyle (Herwibowo 2015).

Hydroponic urban farming was chosen as an innovative solution because this method allows farming to be done in a small area, such as a house yard or building roof (Suryani, Nurjismi, and Fitri 2020). Hydroponic technology does not require soil as a growing medium, but instead uses nutrient-enriched water to grow plants. With this system, Muhammadiyah Sidoarjo youth can grow vegetables and other plants efficiently and sustainably. In addition, hydroponics has the advantage of using less water than conventional methods, making it more environmentally friendly (Arniati et al. 2016).

This movement also aims to foster an entrepreneurial spirit among Muhammadiyah youth. By mastering hydroponic urban farming techniques, they can produce high-quality agricultural products that have economic value. In addition, the movement is expected to serve as an example for other communities to adopt effective and efficient modern agricultural technology. In the long run, the Muhammadiyah Sidoarjo Young Farmers Movement with hydroponic urban farming is expected to contribute to local food security and form a young generation that cares about the environment and is highly competitive.

This service involves students or youth as a means of learning as well as empowerment about the use of urban farming in hydroponic cultivation. To facilitate cultivation, they are equipped with the knowledge of making AB mix

nutrients independently so that they do not depend on market nutrients. Furthermore, the provision of knowledge about product marketing both conventionally and digitally. Empowering young Muhammadiyah students as agents of change, especially in agriculture so that there is a generation of young Muhammadiyah farmers. The goal of this movement is to increase food self-sufficiency in urban areas, reduce dependence on food supplies from outside the city, and promote healthy and sustainable lifestyles. In addition, this movement also aims to empower young farmers as agents of change in the agricultural sector in Indonesia.

## **RESEARCH METHODS**

The implementation method of urban farming by Muhammadiyah IPM Candi young farmers can be explained as follows:

1. Identifying the right location At this stage, Muhammadiyah IPM Candi young farmers conducted a survey to find a location that meets the criteria for urban farming activities, such as sufficient sun exposure, good access to water, and away from pollution sources. Once found, the young farmers negotiate with the landowner to get permission to use the land.
2. Land preparation After obtaining permission to use the land, Muhammadiyah IPM Candi young farmers prepare the land by clearing the land of garbage and weeds. Then, the young farmers made beds and prepared planting media from a mixture of soil and organic fertilizer.
3. Planting seedlings Once the land is ready, young farmers plant seedlings using proper techniques, such as appropriate spacing, proper planting depth, and sufficient watering. Young farmers also choose quality seedlings so that they can grow well and produce good results.
4. Plant care Muhammadiyah IPM Candi young farmers perform routine plant care, such as watering, fertilizing, pruning, and controlling pests and plant diseases. This treatment is done so that the plants grow healthy and productive.
5. Harvesting and processing crops After the harvest period arrives, Muhammadiyah IPM Candi young farmers harvest the crops carefully and take good care of them. The harvested crops are then processed so that they are ready for consumption or sale.
6. Community education Muhammadiyah IPM Candi young farmers also conduct educational activities to the surrounding community about the importance of urban farming, how to plant and care for plants, and the benefits of consuming organic vegetables.
7. Evaluation of activities After the urban farming activities were completed, Muhammadiyah IPM Candi young farmers evaluated the activities that had been carried out. The evaluation was conducted to determine the success of the activity, evaluate the shortcomings and strengths of the activity, and improve the strategy for future urban farming activities.

## **RESULTS AND DISCUSSION**

The researcher Pengabdian Petani Muda Muhammadiyah (PMM) IPM Candi is an organization that aims to develop the potential of young farmers and improve the welfare of the community. One of the programs run by PPMM IPM Candi is urban farming, which is a farming activity on limited lands in urban areas.

Urban farming has many benefits for the community, including the following: First, providing healthy and nutritious food In urban farming activities, Muhammadiyah IPM Candi young farmers produce vegetables, fruits, and medicinal plants that are healthy and free from harmful pesticides. This can increase people's access to healthy and nutritious food. Second, increasing environmental awareness Urban farming can also increase public awareness about the importance of protecting the environment. In this activity, Muhammadiyah IPM Candi's young farmers use environmentally friendly farming techniques, such as the use of organic fertilizers and waste recycling.

Third, reducing the cost of living By growing their own vegetables and fruits, people can reduce the cost of living spent on buying food. In addition, urban farming can also be a source of additional income for the community if they sell their crops. Fourth, increasing community self-reliance Through urban farming activities, people can learn about how to grow and care for plants, thus increasing their self-reliance in fulfilling their daily needs.

In the implementation of urban farming, Muhammadiyah IPM Candi young farmers do several activities, including the following: Determining the right location The location for urban farming must be chosen carefully. The ideal location is one that gets enough sun exposure, has good access to water, and is not too close to the highway or polluted places. Preparing planting media Muhammadiyah IPM Candi young farmers use planting media made from organic materials such as compost and clay. Good planting media can accelerate plant growth and produce healthy and productive plants.

Planting and caring for plants Once the planting medium is ready, Muhammadiyah IPM Candi's young farmers plant the carefully selected seedlings. After the plants grow, they take care of the plants by paying attention to the need for water, nutrients, and protection from pests and diseases. Harvesting and processing of crops After the plants reach harvest time, Muhammadiyah IPM Candi young farmers harvest the crops and perform processing, such as cleaning and packaging the products. The crops can be sold or consumed by the young farmers themselves.

The Muhammadiyah Sidoarjo Young Farmers Movement with hydroponic urban farming shows great potential in answering the challenges of modern agriculture in urban environments. By using hydroponic technology, young people can utilize limited space in urban areas to grow crops. The hydroponic system allows plants to grow faster and with more optimal results

because nutrients are given directly to the plant roots in the form of a solution (Sulistiadi et al. 2020). In addition, this method also reduces the risk of pest and disease attacks that often occur in conventional agriculture, so the use of pesticides can be minimized. This movement is not only a solution for food security in urban areas, but also a form of education and awareness to the community about the importance of sustainable agriculture (Andriyani et al. 2020).

In addition to the technical aspects, this movement also has significant social and economic dimensions. With the active involvement of Muhammadiyah youth in hydroponic urban farming, opportunities are created for them to develop skills and knowledge in modern agriculture. This opens up opportunities to create new jobs as well as support the local economy through marketing hydroponic crops. Products produced from hydroponic systems are generally of better quality and fresher, so they can be sold at competitive prices in the market. In a broader context, the movement also supports environmental conservation efforts through the use of more efficient and sustainable farming methods. Thus, the Muhammadiyah Sidoarjo Young Farmers Movement with hydroponic urban farming does not only bring positive impacts to the youth, but also to the surrounding community and environment.

## CONCLUSIONS

Community service with Muhammadiyah Young Farmers provides results, namely cultivation technology applied in utilizing the yard, namely hydroponics, making AB MIX nutrients and marketing products. The implementation of this service was attended by 25 teenagers who joined Muhammadiyah Young Farmers under the auspices of IPM Candi Sidoarjo.

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