

# The Development of Organic Farming by Sri Kuncoro Farmer Group in *Pokoh Kidul, Wonogiri*

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**Abstract.** *Pokoh Kidul* village is one of the agricultural centers in Wonogiri. Rapid agricultural development in *Pokoh Kidul* village has made the village a potential area for an organic farming center. This is supported by the abundance of underutilized agricultural waste. The organic farming system was developed by Sri Kuncoro Farmers Group by utilizing surrounding agricultural waste to produce solid and liquid organic fertilizers, amino acids, booster, Plant Growth Promoting Rhizobacteria (PGPR), as well as nutrients for plants and vegetable pesticides, which are utilized during agricultural cultivation. It aims to produce healthier agricultural products free from synthetic chemicals. The activities carried out in the process of developing organic agriculture include counseling, training, and production assistance. The results of the activity indicate that Sri Kuncoro Farmers Group has been able to produce organic products that can be used to develop organic farming systems in the village. These products have been utilized for the cultivation of figs, fruits, and vegetables by the surrounding community.

**Keywords:** *organic farming, organic fertilizers, Pokoh Kidul*

## INTRODUCTION

*Pokoh Kidul* village is one of the agricultural centers in Wonogiri, Central Java. Organic farming in this village is growing rapidly. Sri Kuncoro Farmers Group is the pioneer of organic farming in this village. Organic farming is one of the environmentally friendly production methods that guarantee ecological sustainability reflecting the philosophy of "returning to nature" or "in harmony with nature [1]. This farmer group utilizes some natural materials in the surrounding environment to support organic farming, such as the manufacture of organic fertilizers and pesticides. However, the knowledge of the farmers about organic agriculture is still limited to organic fertilizers and pesticides, so it needs to be developed for other products.

Also, to be potential for an organic farming center, this village is very strategic for tourism and agribusiness,

or commonly known as agrotourism. This is because *Pokoh Kidul* village lies in the border of Gajah Mungkur Reservoir Tourism Object (OWGM), the leading tourist destination of Wonogiri Regency. *Pokoh Kidul* village is also close to the trade center, which is 4 km from the Wonogiri City market or only 10 minutes by car. The distance from the Universitas Veteran Bangun Nusantara to *Pokoh Kidul* village is 25.3 km or approximately 42 minutes.

Agro Tourism (Agrotourism) is a tourism activity utilizing the potential of agriculture as a tourist object, including the natural landscapes of agricultural areas, diverse agricultural production, agriculture technology, and the culture of agricultural communities [2]. The development of agrotourism activities will improve the positive perceptions of farmers and the community on the importance of preserving agricultural land resources. Agrotourism development will also create jobs and increase farmers' income beyond the quantity of their production [3]. Besides, the diversity of agricultural cultivation attractions supported by strategic locations, natural environment, vast agricultural land, and community friendliness can be exciting attractions for tourists [4].

*Pokoh Kidul* village agrotourism village can provide many benefits including: (1) increasing the economic level of the *Pokoh Kidul* village community; (2) being a destination for children to learn about integrated farming systems with real organic products; (3) being a workshop place for students and the general public who want to learn integrated farming systems with pure organic products [5].

The purpose of this research activity is to develop organic farming in *Pokoh Kidul* village and make the village an organic agrotourism farming area.



Figure 1. Reservoir and Gajah Mungkur Hydroelectric Power Plant located in Pokoh Kidul

METHODS

The activities were carried out in several steps as described below.

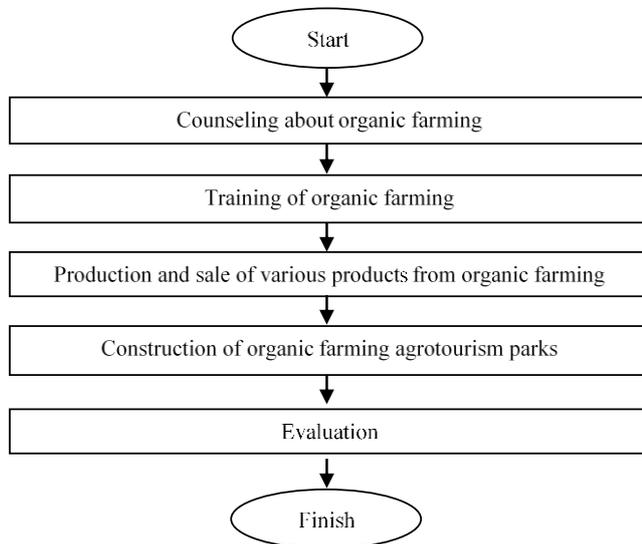


Figure 2. Flow chart of methods to solve the problem

(1) Counseling. The activity was carried out to improve and understand the importance of organic farming and the cultivation of organic crops. (2) Training of organic farming. After counseling, the next stage was the practice of making various organic products such as fertilizers, PGPR (Plant Growth Promoting Rhizobacteria), amino acids, and organic pesticides that support organic farming. This activity was in collaboration with an organic farming community named Konsultanik. (3) Production and sale of various products from organic farming. After partners can make various organic products by themselves, the next step was to produce organic products both for personal use and for sale. (4) Construction of organic farming agrotourism parks. An agrotourism park (selfie place) based on organic farming was built in front of a partner's house. (5) Evaluation of Activities. After four months, the activity was evaluated to see if further improvements were necessary.

RESULTS

**Counseling**

Counseling activities about organic farming and products to support organic farming for partners were carried out twice. This activity was attended by 20 members of Sri Kuncoro Farmers Group. Modules about organic farming were distributed to participants.

**Training in organic farming**

*Organic fertilizer.*

Organic fertilizers were available in liquid and solid forms. Solid organic fertilizers were made from husks, while liquid organic fertilizer was made from cows and goats urine.

*PGPR (Plant Growth Promoting Rhizobacteria).*

To minimize the use of insecticides, control alternatives were needed. The proposed control alternative was seed treatment with Plant Growth Promoting Rhizobacteria (PGPR). The rhizosphere of plants was a place with a high number of microbial activities. Some bacteria found in this place were known as rhizobacteria [6]. The main ingredient used in making PGPR was fermented bamboo roots. The propagation process was carried out using a mixture of rice bran, granulated sugar, lime, and shrimp paste.

*Amino acid.*

Amino acids were able to directly or indirectly affect plant physiological activity. The tryptophan was a precursor in auxin synthesis, and the phenylalanine was very useful in plant metabolism. The addition of amino acids had an effect on the appearance of shoots in olive plants by 33.33% [7]. The materials used for making amino acids in this training were a snail, moringa leaves, mushrooms, pineapple, and fish.

*Organic pesticides*

Pesticides were chemical substances and other materials used to control various pests. In the past, humans used organic pesticides to exterminate pests, but since the discovery of trichloroethane dichlorodiphenyl (DDT) in 1939, humans turned to chemical pesticides. The use of irrational chemical pesticides had a negative impact on the environment and humans health [8]. The use of pesticides by farmers had been very intensive, even exceeding safe limits. Vegetable farmers used two or more types of pesticides, which were often incompatible [9]. Materials for making organic pesticides in this training were some kinds of leaves, garlic, red chili, and tubers.

*Trichocompos*

Trichoderma was grown on rich media. After it was grown, it was mixed with organic fertilizers and fermented for seven days until it became trichocompost.

After being evaluated and analyzed, the use of trichocompos in the development of polyculture techniques was very beneficial, both in the production level and in the quality of the results. The results were far different from those produced through cultivation techniques using inorganic fertilizers. It means that this agricultural development using the tricholimtan approach (Trichoderma, agricultural waste and organic farming) had good quality results because it was free from chemicals residue, and friendly to the environment and public health. Most importantly, it improved topsoil [10].



Figure 3. Training of making organic fertilizer

### Production and sale of various products from organic farming

After the partners were competent enough in the production process, the activity was continued by mass production for use by farmer groups and for sale. The products sold were solid and liquid fertilizers. To support the fertilizer production process, Husk Fertilizer House and Liquid Fertilizer House were established.



Figure 4. Production of organic fertilizers

The selling since June 2018. Figure 5 shows the selling results of organic fertilizer.

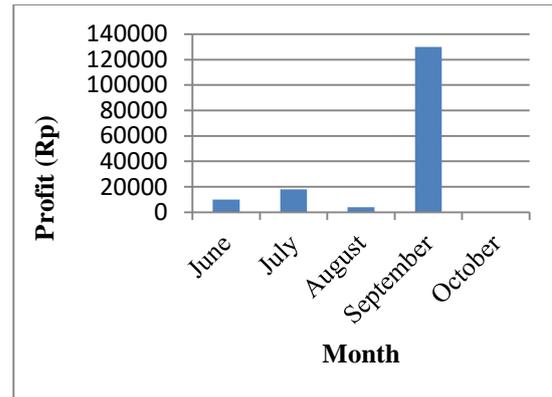
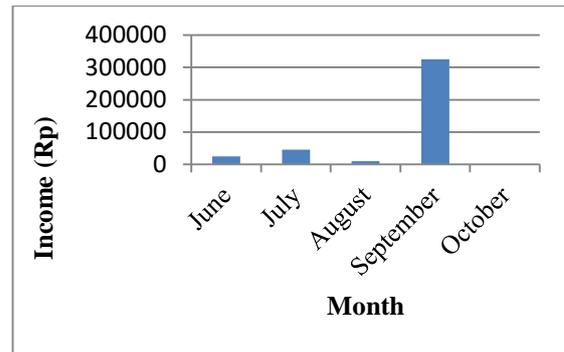


Figure 5. Income and profit earned from organic fertilizer selling

### Development of organic farming agrotourism parks

To support the development of agrotourism in Pokoh Kidul village, a tourist park based on organic agriculture was built. This tourist park was a place to take selfies and learn about organic farming. In the park, there were various organic plants, such as figs, grapes, and strawberries. Behind the park were vegetable gardens such as tomatoes and chili, which were grown using the organic farming method. The organic farming park was built in Norogo, Pokoh Kidul village with a size of about 30 m x 6 m. The park was not only for taking selfies but also for learning about organic farming. The process of making fig products and organic fertilizers were also exhibited in the park. The flow chart of the making process of each partner's products was displayed in a particular room along with photos of partner activities.

Some matters related to agrotourism potential include (1) objects of agrotourism, (2) specific agricultural culture, (3) facilities and infrastructure, (4) community support, (5) capacity building of human resources, community and institutions, (6) agrotourism program, (7) institutions that support/manage agro-tourism programs, (8) services for agrotourism activities, (9) government and related party support, and (10) cooperation with related parties [3].



Figure 6. Agrotourism Park with organic plants

### Evaluation of activities

An evaluation was carried out to determine the improvement of partner skills in producing and selling organic products. Also, an evaluation of the development of organic farming parks was carried out as a support for the formation of agrotourism in Pokoh Kidul.

### CONCLUSION

Sri Kuncoro Farmer Group in Pokoh Kidul village has successfully developed an organic farming system in the area. It was marked by the success of partners in producing fertilizers, PGPR, amino acids, trichocompos, and organic pesticides. Partners have also used these products for themselves. Besides, an organic farming agrotourism park has been developed as a pioneer of agrotourism in Pokoh Kidul village.

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### REFERENCE

- [1] A. Widiarta, S. Adiwibowo, and Widodo, "Analisis Keberlanjutan Praktik Pertanian Organik di Kalangan Petani (Analysis of Sustainability Organic Farming Practise on Farmer)," *J. Transdisiplin Sosiologi, Komunikasi, dan Ekol. Mns.*, vol. 5, no. 1, pp. 71–89, 2011.
- [2] G. A. J. Palit, I. G., Talumingan, C., Rumagit, "Strategi Pengembangan Kawasan Agrowisata Rurukan," *Agri-SosioEkonomi Unsrat*, vol. 13, no. 2, pp. 21–34, 2017.
- [3] T. Budiarti, Suwanto, and I. Muflikhati, "Pengembangan Agrowisata Berbasis Masyarakat pada Usahatani Terpadu guna Meningkatkan Kesejahteraan Petani dan Keberlanjutan Sistem Pertanian ( Community-Based Agritourism Development on Integrated Farming to Improve the Farmers ' Welfare and the Sustastai)," *J. Ilmu Pertan. Indones.*, vol. 18, no. 3, pp. 200–207, 2013.
- [4] R. Ardiansari, E. E. Nurlaelih, and K. P. Wicaksono, "Pengembangan Agrowisata di Desa Wisata Tulungrejo Kota Batu , Jawa Timur (Development of Agrotourism in Tulungrejo Village Batu City , East Java)," *J. Produksi Tanam.*, vol. 3, no. 5, pp. 383–390, 2015.
- [5] A. Mulyono, J. Basuki, S. Sukaryani, and Afriyanti, "Peningkatan Keterampilan Pembuatan Pupuk Organik oleh Kelompok Tani Sri Kuncoro Pokoh Kidul Wonogiri," *Pros. Semin. Nas. Pengabd. Kpd. Masy. Peningkatan Kualitas Pemberdaya. Masy. Menyongsong Revolusi Ind. 4.0 Univ. Slamet Riyadi Surakarta*, vol. 1, pp. 403–406, 2018.
- [6] M. Taufik, A. Rahman, A. Wahab, and S. H. Hidayat, "Mekanisme Ketahanan Terinduksi oleh Plant Growth Promotting Rhizobacteria ( PGPR ) pada Tanaman Cabai Terinfeksi Cucumber Mosaik Virus ( CMV )," *J. Hort.*, vol. 20, no. 3, pp. 274–283, 2010.
- [7] L. Niam, T. Rahayu, and A. Hayati, "Perlakuan Asam Amino dalam Partikulasi Asap dan Hormon terhadap Pertumbuhan Stek Pucuk Zaitun ( Oleo europaea)," *J. Ilm. Biosaintropis (Bioscience Trop.*, vol. 1, no. 1, pp. 54–60, 2015.
- [8] R. Ariyanti, E. Yenie, and S. Elystia, "Pembuatan Pestisida Nabati dengan Cara Ekstraksi Daun Pepaya dan Belimbing Wuluh," *J. FTeknik*, vol. 4, no. 2, pp. 1–9, 2017.
- [9] Supriadi, "Optimasi Pemanfaatan Beragam Jenis Pestisida untuk Mengendalikan Hama dan Penyakit Tanaman," *J. Litbang Pertan.*, vol. 32, no. 1, pp. 1–9, 2013.
- [10] S. Suandi, Jasminarni, Novita, "Pemberdayaan Masyarakat melalui Pengembangan Pertanian Organik Berbasis Trikolimantan di Kota Sungai Penuh Provinsi Jambi," *J. Pengabd. pada Masy.*, no. 52, pp. 13–20, 2011.