

Oyster Mushroom Cultivation Training as a Program for Empowering Students of the "Ar-Rohmah" Islamic and Social Education Foundation

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Abstract

Oyster mushroom is one of the horticultural commodities in Indonesia. This community empowerment program through oyster mushroom cultivation is designed as an effort to provide a sense of equality, partnership, and togetherness for the improvement of the community's economy. Islamic and Social Education Foundation "Ar-Rohmah" with its abundant natural and human resource potential, can be a part of the process of social change. Student empowerment at this foundation manages students to do something beneficial for the community, including through training programs and mentoring in oyster mushroom (*Pleurotus spp*) cultivation. Accompanied by the Institute for Research and Community Service (LP2M) Team at the University of Jember, this activity was carried out to the students of the "Ar-Rohmah" Islamic and Social Education Foundation in Suren village, Ledokombo District, Jember through the presentation of theory and field practice on cultivation mushrooms. This community service activity will form a small industry that is able to provide income for students of the "Ar-Rohmah" Islamic and Social Education Foundation in Suren Village, Ledokombo District, Jember. During the execution of program, students were showing high antusias toward prospect and cultivation technology of oyster mushroom by giving contributions, suggestions and creative ideas.

Keywords: Cultivation, Oyster Mushrooms, Empowerment, Students, Jember.

I. INTRODUCTION

Islamic and Social Education Foundation "Ar-Rohmah" Jl. KH. Sanhaji No. 57. Located in the village of Suren, Ledokombo District, Jember, East Java. This foundation is led by Saliman, S.Pd. as chairman of the Foundation and influential figures in the environment. Students at the "Ar-Rohmah" Islamic and Social Education Foundation have a high fighting spirit to pursue education but lack luck in terms of finances because the majority are students from poor families in the neighborhood of Suren village, Ledokombo, Jember. The existence of these limitations does not dampen the enthusiasm of students to learn. This is evident, one of which is the active participation of students in participating in non-academic and academic activities, including in the Jember district walking competition activities to the 2019 East Java student business plan.

Student involvement in schools is important because there is a tendency for the majority of students to feel bored, less motivated and not involved in learning activities, where this makes students break down from academic, non-academic and social aspects in school life. Furthermore, in their research, they also stated that it is important to have support from families, students, educators and researchers which is a strong attachment factor in the implementation of quality educational activities. Some researchers argue that engagement is a mediator between contextual influences (i.e. facilitators) and desired learning outcomes such as academic and non-academic achievement.^{1,2} Student involvement in learning activities can be supported by the application of experiential learning methods, where students are trained to carry out the learning process by combining knowledge, skills and values through experiences that are felt by students directly so that the learning process becomes optimal because of student involvement.³

However, the development of the school curriculum towards agriculture is still not deep, even though now various modern techniques and technologies have been developed in the field of agricultural crop cultivation. One of them is through students' mastery of agricultural technology. Agricultural technology is the implementation of science or modern tools in implementing and utilizing natural resources and agricultural resources to improve human welfare.⁴ Agricultural technology innovation plays an important role in increasing agricultural productivity, given that increasing production through land expansion (extensification) is difficult to implement in Indonesia, in the midst of the increasingly widespread conversion of productive agricultural land to non-agriculture.⁵

So far, students have only applied cultivation methods that were taught from generation to generation from their families who work as farmers. Along with the development of the world, institutions need to provide a special place to train students' skills and insights, for example by cultivating horticultural commodities, namely oyster mushrooms. Jember Regency is classified as superior in the agricultural sector because of the many sub-districts that are the base sector in the business field in agriculture. This sub-sector includes food crops commodities, namely rice, corn, cassava, sweet potato, peanuts, green beans, soybeans, tubers, vegetables, fruits, potatoes. The

¹ James J. Appleton, Sandra L. Christenson, and Michael J. Furlong, 'Student Engagement with School: Critical Conceptual and Methodological Issues of the Construct', *Psychology in the Schools* 45, no. 5 (2008): 369–86, <https://doi.org/10.1002/pits.20303>;

² Fikrie and Lita Ariani, 'Keterlibatan Siswa (Student Engagement) Di Sekolah Sebagai Salah Satu Upaya Peningkatan Keberhasilan Siswa Di Sekolah', *Seminar Nasional & Call Paper Psikologi Pendidikan 2019: Menjadi Siswa Yang Efektif Di Era Revolusi Industri 4.0*, no. April 2019 (2019): 103–10

³ Dyah Ayu Savitri, Rufiani Nadzirah, and Noer Novijanto, 'Pelatihan Hidroponik Sistem DFT Guna Menumbuhkan Jiwa Kewirausahaan Siswa Di Jember', *Jurnal Masyarakat Mandiri* 4, no. 5 (2020): 969–77, <https://doi.org/10.31764/jmm.v4i5.3112>.

⁴ Nur Askina, 'Teknologi Modern Terhadap Aktivitas Pertanian Masyarakat Perkampungan Bukkang Mata Kelurahan Paccarakang Kecamatan Biringkanayya Kota Makassar Skripsi', *Revista Brasileira de Ergonomia* 9, no. 2 (2016): 10.

⁵ Anna Fatchiya, Siti Amanah, and Yatri Indah Kusumastuti, 'Penerapan Inovasi Teknologi Pertanian Dan Hubungannya Dengan Ketahanan Pangan Rumah Tangga Petani', *Penyuluhan* 12, no. 2 (2016): 190–97

commodity plantation sub-sector covered is the result of cultivated plantation crops such as coconut, cashew, tea, coffee, cocoa, kapok, sugarcane, tobacco, cloves, pepper, castor, cotton, medicinal plants. The livestock sub-sector includes the production of large livestock, small livestock, poultry and livestock products such as fresh milk, eggs and slaughter products.⁶ Thus the ability to carry out agricultural commodity cultivation activities can provide broader and more tangible knowledge and skills for the students of the "Ar-Rohmah" Islamic and Social Education Foundation.

Oyster mushrooms are agricultural products that are easy to cultivate and are increasingly in demand by the public. Oyster mushrooms are rich in protein, minerals (P, Ca, Fe, K and Na) and vitamins (thiamine, riboflavin, folic acid and niacin). Oyster mushrooms contain all the essential amino acids so that the protein content is of superior quality. In addition, oyster mushrooms contain high potassium and have strong antioxidant activity.⁷ The nutritional content of oyster mushrooms compared to other types of wood mushrooms is higher. The content of 18 types of amino acids include isoleucine, lysine, methionine, cysteine, proline, tyrosine, threonine, tryptophan, valine, arginine, histidine, alanine, aspartic acid, glutamic acid, glycine, proline, and serine. Oyster mushrooms contain high enough vegetable protein, fat, and other elements such as vitamins, iron, phosphorus and so on and do not contain cholesterol.⁸

Oyster mushroom cultivation is carried out through several stages, namely making seeds, preparation of materials and tools, preparation of planting media materials, composting, bagging, sterilizing planting media, inoculation of planting media, incubation of planting media, mushroom house (kumbung) and harvesting. Oyster mushroom seeds are made through the inoculation process.⁹ Furthermore, the cultivation of oyster mushrooms requires the preparation of an appropriate planting medium. The manufacture of oyster mushroom growing media consists of sawdust which is waste from wood craftsmen and bran as nutrients and lime or dolomite to regulate the pH of the media. Sawdust contains lignin and nutrients that are needed for the growth of oyster mushrooms. The selection of sawdust is intended so that the nutrients contained in it can be used by fungi, for better growth of oyster mushrooms. Bran is an alternative growing medium for mushrooms because it contains protein, cellulose, fiber, nitrogen, fat, and P₂O₅ for nutrients for the growth of oyster mushrooms. Lime or dolomite serves to control the pH of the growing media, for optimal fungal growth. Media with a pH that is suitable for fungal growth can affect the availability of several elements needed for fungal growth. All raw materials in the

⁶ Nur Fefi Widjajanti and Nurul Fathiyah Fauzi, 'Karakteristik Komoditas Sub Sektor Pertanian Di Wilayah Jalur Lintas Selatan (JLS) Kabupaten Jember', *Agritrop Jurnal Ilmu-Ilmu Pertanian* 12, no. 1 (2014): 77–82, <https://doi.org/10.32528/agr.v12i1.708>.

⁷ Netty Widyastuti, 'Pengolahan Jamur Tiram (*Pleurotus* *Ostreatus*) Sebagai Alternatif Pemenuhan Nutrisi', *Jurnal Sains Dan Teknologi Indonesia* 15, no. 3 (2019): 1–7, <https://doi.org/10.29122/jsti.v15i3.3391>.

⁸ Zulfarina et al., 'Budidaya Jamur Tiram Dan Olahannya Untuk Kemandirian Masyarakat Desa', *Jurnal Pengabdian Kepada Masyarakat* 5, no. 3 (2019): 358–70, <https://doi.org/10.22146/jpkm.44054>.

⁹ Machfudi, Asep Supriyatna, and Henky Hendrawan, 'Budidaya Jamur Tiram Sebagai Peluang Usaha', *Community Development Journal* 2, no. 1 (2021): 127–35

manufacture of oyster mushroom growing media are cheap, environmentally friendly and relatively easy to obtain. Referring to this, the oyster mushroom agribusiness opportunity is very prospective to be developed at this.¹⁰

This oyster mushroom has health benefits including, it can reduce cholesterol and weak heart and several other diseases. This mushroom is also believed to have medicinal properties for various diseases such as liver disease, diabetes, anemia. In addition, oyster mushrooms can also be efficacious as antitumor and act as antioxidants, antivirals, antiviral anticancer (including AIDS), antibacterial, and can improve the immune system. In addition, oyster mushrooms are also believed to be able to help weight loss because they are high in fiber and help digestion.¹¹

Consumption mushroom cultivation in Indonesia shows encouraging developments. The intensive and commercial development of oyster mushrooms has very bright prospects. Currently, Indonesia is included as one of the world's main supplier of mushrooms. Not only to be sold in traditional markets and supermarkets, oyster mushrooms are also cultivated for export purposes. This description is just a market demand in the form of fresh mushrooms, both for household needs, restaurants, star hotels and for export needs. Whereas consumption mushrooms are not only marketed fresh, but can also be further processed into ready-to-eat processed products such as mushroom chips, mushroom shreds, mushroom nuggets, and other mushroom processed foods. These products in addition to increasing added value are also an expansion of marketing to attract more consumers.¹²

This service program aims to provide training on oyster mushroom cultivation as an empowerment program for the students of the "Ar-Rohmah" Islamic and Social Education Foundation. The first problem faced is that there does not appear to be a significant entrepreneurial spirit in students so that business activities have not been able to materialize. The second problem is that there is no knowledge and creativity of students and the foundation to carry out oyster mushroom cultivation activities which can be used as a superior product of the foundation and worth selling. The third problem is that they do not know and understand online marketing by utilizing social media. Therefore, this service program is expected to be able to solve these problems and provide students with the skills to enter the world of society with the skills they have. The students' self-confidence in broad knowledge and skills related to the potential of agribusiness commodities will support students to be ready to enter the world of work. The purpose of this service is to (1) provide training on oyster

¹⁰ time Zulfarina et al., 'Budidaya Jamur Tiram Dan Olahannya Untuk Kemandirian Masyarakat Desa'.

¹¹ Arif Rahman Zikri, Shorea Khaswarina, and Evy Maharani, 'Analisis Usaha Dan Pemasaran Jamur Tiram Putih (*Pleurotus Ostreatus*): Studi Kasus Di Kelurahan Tangkerang Timur Kecamatan Tenayan Raya Kota Pekanbaru', *Jom Faperta* 2, no. 2 (2015).

¹² Retno Dewi Shintia and Amalia, 'Analisis Usaha Tani Jamur Tiram Putih (*Pleurotusostreatus*) Di Kelurahan Simpang Baru Kecamatan Tampan Kota Pekanbaru', *Jurnal Ilmiah Pertanian* 13, no. 2 (2017): 38–49; Dewi Sekar Tanjung, Lutfi Aris Sasongko, and Shofia Nur Awami, 'Analisis Usaha Budidaya Dan Pemasaran Jamur Tiram Putih (*Pleurotus Ostreatus*) Di Kecamatan Ngaliyan Kota Semarang', *Jurnal Agrica* 11, no. 1 (2018): 15–27

mushroom cultivation activities to students of the "Ar-Rohmah" Islamic and Social Foundation, (2) provide stimulation so that students can be involved in the world of entrepreneurship, (3) develop marketing strategies for mushroom products. oyster.

II. IMPLEMENTATION AND RESULTS OF ACTIVITIES

The service team has discussed with partners the prospect of oyster mushroom cultivation that can be carried out by Ar-Rohmah Suren students, Ledokombo, Jember Regency. The location of service partners has cold weather so that it can relatively support the growth of oyster mushrooms for cultivation purposes. White oyster mushroom growth rate is higher in cold climates and high humidity. In addition, Ar-Rohmah Suren has a community assistance program by students. In this case, the students are members of the Suren Entrepreneurial Ambassador group whose job is to assist and guide people who are interested in doing a business so that the business can develop and be sustainable. The Suren Entrepreneurial Ambassador will disseminate the knowledge, skills and experience he has gained to the people who live in Suren Village. The success of this program is planned to be transmitted to the surrounding community. Generally, the surrounding community already has unused land or unused cages, so the land or cage can be renovated and used as a mushroom house to carry out oyster mushroom cultivation. Figure 1 shows the discussions carried out by partners and the service team during program implementation (October 3, 2020).



Figure 1. Discussion on the prospect of mushroom cultivation

After the discussion session was held, the service team concluded that the students of the Islamic and Social Foundation "Ar-Rohmah" did not yet know the process of oyster mushroom cultivation. However, students already know the characteristics and characteristics of oyster mushrooms and consumer interest in fresh oyster mushroom products and their products. This provides enthusiasm and

motivation for students to learn about the theory and practice of oyster mushroom cultivation. They expressed their hopes for the establishment of an oyster mushroom industrial center in Suren Village which is managed by the Suren Tourism Ambassador group. The Suren Tourism Ambassador is tasked with assisting and guiding people who are interested in doing a business so that the business can develop and be sustainable. In general, there are three things that the Devotion Team does to provide insight and skills to the students of the Ar-Rohmah Islamic and Social Foundation, namely the provision of material related to the theory of oyster mushroom cultivation, the practice of oyster mushroom cultivation and prospects for the development of oyster mushrooms.

A. Socialization of theories related to oyster mushroom cultivation

Breeding or cultivating oyster mushrooms is relatively simple, because it does not require a large area of land, low production costs and relatively few pests and diseases. Today's oyster mushroom market is growing wider, consumers are not only limited to the middle economy but also many upper-class people who like it. Moreover, now there are many processed foods made from oyster mushrooms, such as oyster mushroom meatballs, oyster mushroom crispy, and even star-rated hotel food. Oyster mushroom business opportunities will continue to grow considering the several advantages of oyster mushrooms and market developments that show positive trends.

Students need to understand the theory related to oyster mushroom cultivation where this supports the concept of student learning and learning at school. Students' learning activities are only possible in a learning process that can provide opportunities for them to learn well. On the other hand, the learning process can take place well if it gets a response from students. The link between learning and learning appears in the concept of learning and learning. In this oyster mushroom cultivation activity, students carry out learning activities, including learning skills, learning social skills, learning problem solving, learning rationally, learning habits and learning knowledge.¹³

Learning skills is learning by using motor movements, which are related to the nerves and muscles (neuromuscular) which aims to acquire and master certain physical skills. Social learning is basically learning to understand problems and techniques for solving social problems. Learning problem solving is basically learning to use scientific methods or think systematically, logically, regularly, and thoroughly to gain cognitive abilities and skills in solving problems rationally, straightforwardly, and thoroughly. Rational learning is closely related to learning problem solving, namely using the ability to think logically and rationally in order to have the ability to solve problems using common sense, logical, and systematic considerations and strategies. Learning habits is defined as the process of forming new habits or improving existing habits. Learning knowledge is learning by conducting in-depth investigations of certain objects of knowledge which aims to add information and understanding of certain knowledge

¹³ Muh Sain Hanafy, 'Konsep Belajar Dan Pembelajaran', *Lentera Pendidikan* 17, no. 1 (2014): 66-79.

which is usually more complicated and requires special tips in studying it, such as using laboratory equipment and field research.¹⁴

In this activity, the service team explained the introduction to oyster mushroom cultivation, oyster mushroom cultivation techniques to post-harvest handling. The team started the explanation by conveying the advantages of oyster mushrooms in terms of nutrition, productivity and business prospects. Oyster mushrooms are a source of protein such as thiamine (vitamin B1), riboflavin (vitamin B2), niacin, biotin and vitamin C and minerals. As for functional ingredients, mushrooms contain active ingredients consisting of polysaccharide compounds (glycans), triterpenes, nucleotides, monitol, alkaloids and others that are beneficial for body health.¹⁵

Mushroom production in East Java in 2017, 2018 and 2019 respectively were 951,539 kg, 8,071,803 kg, 8,605,789 kg.¹⁶ This informs that there is an eightfold increase in mushroom productivity in 2017 to 2018. The increase in mushroom production in East Java indicates an increase in consumer demand for mushroom commodities.

Some types of mushrooms that are in demand include straw mushrooms, white oyster mushrooms, gray oyster mushrooms, shiitake mushrooms, ear mushrooms, lingzhi mushrooms, morel mushrooms, campignon mushrooms. The types of mushrooms that are marketed the most widely throughout the world are edible mushrooms and campignon mushrooms, followed by shiitake mushrooms and oyster mushrooms. So the prospect of oyster mushrooms is very bright, as long as this business is handled seriously on an industrial scale.¹⁷

In the cultivation of oyster mushrooms or other edible mushrooms, several preparatory steps are required, including preparing the right location or suitable for placing the mushroom house, preparing mushroom seeds, preparing sterile growing media and other means of care. Mushroom cultivation does not require high technology, so it is quite simple. Mushroom growing media usually use organic materials that are often found in nature which are very easy to find and inexpensive. This organic media can be in the form of straw, sawdust, paper and other additives such as rice bran, quicklime, which are also easily available in the environment. For the cultivation of oyster mushrooms and other mushrooms, a mushroom house is needed which generally uses the main raw material of bamboo, which is also widely grown in Indonesia. The success of mushroom cultivation cannot be separated from the carrying capacity of an appropriate growing environment, for example for oyster mushrooms, the location temperature is 30-32°C, the optimum room temperature is 22-28°C and

¹⁴ Hanafy

¹⁵ Susilawati and Raharjo Budi, 'Petunjuk Teknis Budidaya Jamur Tiram (*Pleurotus Ostreatus* Var Florida) Yang Ramah Lingkungan', no. 50 (2018): 1-13

¹⁶ BPS, 'Produksi Tanaman Sayuran 2019', accessed 16 April 2021, <https://www.bps.go.id/indicator/55/61/1/produksi-tanaman-sayuran.html>.

¹⁷ Jegadeesh Raman et al., 'Current Prospects of Mushroom Production and Industrial Growth in India', *Journal of Mushrooms* 4, no. 16 (2018): 239-49; Jenita Nongthombam et al., 'A Review on Study of Growth and Cultivation of Oyster Mushroom', *Plant Cell Biotechnology and Molecular Biology* 22, no. 5 (2021): 55-65.

room humidity, the pH of the media which generally leads to acid, the water content of the media is around 60%.¹⁸

Ar-Rohmah Suren's students showed high enthusiasm when discussing cultivation theory, post-harvest handling and business prospects for oyster mushrooms. This is shown by the active participation of students in discussions, especially regarding the care of baglog of oyster mushrooms, marketing prospects for oyster mushroom harvests and further processing. Students also often communicate online if they find obstacles and problems in the implementation of oyster mushroom cultivation activities. The service team through this program facilitates partners to carry out oyster mushroom cultivation so that students master and are proficient in oyster mushroom cultivation.

B. Oyster Mushroom Cultivation Practice

Mushroom house or in other terms kumbung is a place to store planting media so that mushroom growth can grow well and produce quality mushrooms (both in terms of weight and shape). Materials for making mushroom houses are obtained from materials that are easily available around the site, cheap and strong. The service partners initially had kumbung for oyster mushroom cultivation. However, after going through the consideration between the service team and partners, renovations were carried out on the mushroom kumbung so that it could be maximized for a cultivation capacity of at least 1000 mushroom baglogs. This kumbung is made using quality petung bamboo that grows in Suren Village. Bamboo can be an alternative environmentally friendly building material, which can replace wood, because bamboo is easy to cultivate, can live well in almost all types of soil, from lowlands to highlands, and is relatively short to be harvested and afterwards can be harvested commercially.¹⁹ Bamboo is a strong and lightweight material and can often be used without processing or finishing. The bamboo construction is easy to build, resistant to earthquake forces, and easy to repair in the event of damage. With its fast growth, good adaptability to most climatic and soil conditions, bamboo is emerging as a very suitable alternative.²⁰ The location of the mushroom kumbung is located in the Ar-Rohmah Suren field laboratory where this allows students to more easily carry out learning activities through hands-on practice. For the next stage, after the kumbung is finished, the practice of oyster mushroom cultivation will be carried out along with baglog care until harvest.

¹⁸ Siti Umniyatie et al., 'Budidaya Jamur Tiram (*Pleurotus Sp*) Sebagai Alternatif Usaha Bagi Masyarakat Korban Erupsi Merapi Di Dusun Pandan, Wukirsari, Cangkringan, Sleman DIY', *Inotek* 17, no. 2 (2013): 162-75

¹⁹ Abito Bamban Yuuwono, 'Pengembangan Potensi Bambu Sebagai Bahan Bangunan Ramah Lingkungan', *Jurnal Teknik Sipil Dan Arsitektur* 18, no. 22 (2016)

²⁰ Ni Komang Ayu Artiningsih, 'Pemanfaatan Bambu Pada Konstruksi Bangunan Berdampak Positif Bagi Lingkungan', *Media Komunikasi Rekayasa Proses Dan Teknologi Tepat Guna* 8, no. 1 (2012): 1-9



Figure 2. The process of arranging the oyster mushroom baglog on kumpang

In this program, the service team purchased 1000 baglogs from reputable baglog producers in Jember. Then, the 1000 baglogs were transported and moved for care and maintenance to the mushroom kumpang belonging to the Ar-Rohmah Foundation. Before being transferred to the kumpang, baglog goes through various processes ranging from sterilization, inoculation of seeds to the ripening process (placing the inoculated planting media) in certain room conditions in order to allow fungal mycelia to grow in order to obtain mycelia that grow simultaneously. Generally, the growth temperature of fungal mycelia is between 28-30°C. The incubation process is carried out until the entire surface of the growing media in baglog is evenly white after 20-30 days.



Figure 3. Harvesting oyster mushrooms

Then the preparation of kumpang is carried out, namely by disinfecting kumpang as a storage place for baglog to grow mycelia using 2% formalin. After the kumpang is ready, baglog is placed on shelves arranged transversely along 12-14 baglogs, stacked 2-4 baglogs upwards alternately. The kumpang is closed as tightly as possible so that the sunlight is minimal with room temperature controlled at 28-30°C. This condition was maintained for up to 30 days in order to obtain the growth of mycelia that propagated to fill the growing media bag (baglog). The condition of the kumpang room must be considered so that the temperature, humidity, light and air

circulation are appropriate. After 4-7 days, the baglog lid is opened, mushroom primordia will appear (mushrooms). If there are primordia that do not develop, they are immediately removed by pulling them out, then allowing healthy primordia to develop.

Maintaining the humidity of the kumbung is necessary, namely by spraying using clean water placed in the sprayer. Watering is done since the baglog lid was opened. Spraying is directed to all corners of the kumbung, including the floor where baglog is not directly exposed to water. Watering is done every day, ie morning after harvest and afternoon or evening. To prevent crop failure, pest and disease control is carried out. Pests and diseases in oyster mushrooms include rats and the fungus *Neurospora* sp. (oncom fungus), *Trichoderma* sp. (green fungus), and *Aspergillus* sp (soot fungus). It is better to use mouse traps and destroy baglogs that are overgrown with fungi. After being old enough, the oyster mushroom fruiting bodies were picked, which was thirty days after inoculation or a week after baglog was opened or 2-3 days after the emergence of primordia.²¹ The average weight of oyster mushrooms harvested per day is 2 kg. The mushrooms are then sold at a price range of Rp 10,000-Rp 15,000 per kilogram. Mushroom sales are carried out through collectors who come directly to the kumbung or directly, namely by selling oyster mushrooms in the market and serving delivery messages to consumers' homes. This delivery service is carried out with the help of online media, for example through WhatsApp and Instagram.

C. Oyster Mushroom Development and Marketing Prospect

Oyster mushroom is a wood mushroom that has been widely cultivated in Indonesia. The name of the oyster mushroom is taken from the shape of the hood which is curved, oval, and rounded to resemble a clam or oyster shell with a wavy edge. There are five types of oyster mushrooms, namely white oyster mushrooms, pink oyster mushrooms, *Pleurotus fissilis*, *Pleurotus anas* and brown oyster mushrooms. White oyster mushroom is the most widely cultivated species in Indonesia.²²

Mushroom cultivation in terms of business is very profitable, especially the mushroom harvest time is relatively short, which can be harvested at the age of 1-3 months after inoculation (sowing seeds into growing media). Then harvesting can be done every day so that the turnover of capital occurs quickly, while the required business capital is relatively small. The limited yard of the house can also be used as a kumbung. So mushroom cultivation has many advantages, namely easy to obtain raw materials, cultivation does not require large land, cultivation techniques are easy to learn and low risk of failure.²³

This white oyster mushroom cultivation business can improve the economic level of the community because it is based on a people's economy with relatively small capital and can be done by involving all levels of society. Cultivation of white oyster

²¹ Kementerian Pertanian, 'Standar Operasional Prosedur (SOP) Budidaya Jamur Tiram', 2010.

²² Tetty Yulawati, *Pasti Untung Dari Budi Daya Jamur* (Agromediapustaka, 2016)

²³ Yulawati.

mushrooms can be chosen by the community as an alternative agricultural production because the community can easily obtain the raw material for propagation of white oyster mushrooms which is abundantly available in the form of sawdust for propagation of white oyster mushrooms. The production of white oyster mushrooms is currently only able to meet 50% of domestic consumer demand, so there is still a wide opportunity to develop this agribusiness. This situation is a good prospect for white oyster mushroom production business. With good guidance and assistance, the production of white oyster mushrooms can become a prospective agribusiness to be developed.²⁴

Marketing strategy is the marketing logic used by a business to create customer value and achieve profitable customer relationships.²⁵ Today's marketing can be carried out both face-to-face and online. Ar-Rohmah students have mastered information technology well, so that the procurement of marketing strategies both face-to-face and online can also be implemented in order to expand marketing reach.

Ar-Rohmah students belong to generation Z. Generation Z is the generation born in the range of 1995-2010 who was raised by generation X (born in the range of 1965-1976) in the midst of world challenges and has concern for the environment through the dissemination of information on their social network. Gen Z is predicted to prefer an entrepreneurial spirit over Gen Y (born in the range of 1977-1998). Generation Z has some real differences with Gen Y in several ways, including access to knowledge about resources (internet) which is more than Gen Y at the same age, Gen Z, who mostly have parents with a Gen X parent, will get more stress in life. they are both in terms of academic achievement and behavior, Gen Z has more time in their youth to find some kind of mentor who will influence their way of thinking.²⁶ The characteristics of Generation Z are expected to later support the success of Ar Rohmah students in conducting cultivation activities as well as oyster mushroom entrepreneurs and their products.

Online marketing during the current COVID-19 pandemic is very promising compared to direct marketing. Face-to-face face-to-face inevitably has to be limited in order to break the chain of spread of COVID-19 so that many businesses take advantage of online media promotion and marketing strategies. This also encourages the motivation of Ar-Rohmah students to intensify online marketing when the oyster mushroom harvest has been obtained. Online marketing facilitates fast, widespread transactions, minimizes contact with customers and can be done relatively at any time. Marketing strategies can be done using social media such as Facebook, WhatsApp and

²⁴ Yenny Sariasih, 'Pengembangan Budidaya Jamur Tiram Putih Sebagai Agribisnis Prospektif Bagi Gapoktan Seroja I Kandang Limun Bengkulu', *AGRISEP* 13, no. 1 (2013): 11-18

²⁵ Dyah Ayu Savitri, Herlina Herlina, and Noer Novijanto, 'Financial Feasibility Analysis of Chocolate Spread with Coconut Ingredients as Agroindustrial Product', *Journal La Bisecomana* 2, no. 2 (2021): 14-24, <https://doi.org/10.37899/journallabisecomana.v2i2.353>.

²⁶ Ishak Fadlurrohman et al., 'Memahami Perkembangan Anak Generasi Alfa Di Era Industri 4.0', *Jurnal Pekerjaan Sosial* 2, no. 2 (2019): 178-86

Instagram then the product is delivered directly to consumers. The capital needed is the internet so that product marketing efforts can use internet media.

Online marketing activities certainly cannot be separated from promotional activities. There are three steps in the promotion strategy, including developing the expected response from customers through the use of the concept of attention, interest, desire and action, developing themes and promotional content, creating and modifying promotional content so that have elements of introducing themselves, persuading, modifying and shaping behavior and reminding consumers to return to the products being marketed.²⁷

In addition to reviewing the aspects of promotion and marketing, the mentality and motives of students in entrepreneurship must be strengthened with motivation and assistance from both teachers and the service team. Mental is a basic thing that is owned by a person. Mental definition is a person's attitude in behaving. Humans who have an entrepreneurial mentality have the hard ability to achieve their goals and needs in life. The motivation is the willingness to do something, while the motive is encouragement. A person's motivation depends on the strength of his motives. Entrepreneurial mentality is the courage to try to determine prosperity, success and fulfill physical and spiritual needs that are obtained from one's own abilities, thoughts and efforts. Entrepreneurial mentality can be seen from how a prospective entrepreneur faces a new challenge, and faces a risk that will be accepted when he becomes an entrepreneur. The knowledge about entrepreneurship that has been described can be a motivation and foster a mental attitude that affects the interest in entrepreneurship.²⁸

III. CONCLUSION

The Oyster Mushroom Cultivation Training Program as an Empowerment Program for the Islamic and Social Education Foundation "Ar-Rohmah" Jember provides a stimulus for students to build self-quality and become initiators/pioneers in developing local potential and the surrounding community. Students showed high enthusiasm to master the method of mushroom cultivation. This oyster mushroom cultivation training activity requires continuous monitoring and support in the hope of continuity of oyster mushroom cultivation activities. Furthermore, the service team plans to carry out further mentoring activities to make baglogs independently because in this activity the baglogs used are still obtained through purchases from leading baglog producers in Jember. Making baglog independently can help cut capital to carry out oyster mushroom cultivation. In addition, the service team will assist to expand the marketing reach of oyster mushroom products, both in the form of fresh products and

²⁷ Noer Novijanto et al., 'Kewirausahaan Bagi Pemuda : Pengembangan Keahlian Dalam Pembuatan Dan Pemasaran Produk Kreatif Entrepreneurship for Youth : Development of Experience in Creative Producing and Marketing' 5, no. 1 (2020): 15–18.

²⁸ Alvian Dhian Agung and Sumaryanto Sumaryanto, 'Pengaruh Motivasi Dan Mental Berwirausaha Terhadap Minat Mahasiswa Akuntansi Untuk Berwirausaha Studi Pada Mahasiswa Universitas Ahmad Dahlan', *Jurnal REKSA* 4, no. 1 (2015): 39–54.

processed oyster mushroom products. The existence of processed oyster mushroom products will help increase consumer acceptance and will indirectly increase the added value of oyster mushrooms.

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