

Processing Of School Garden Products With Vacuum Frying Technology And Marketing Digitalization In Growing Entrepreneurship And Food Security At The Students Of The Al-Mua'aawanah

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Abstract

Several Islamic boarding schools in Indonesia have begun to transform to enable students to live independently through entrepreneurship. The pesantren curriculum, which used to only focus on studying, is currently coupled with an entrepreneurial curriculum. One Islamic Boarding School that has developed entrepreneurship is the Al-Mu'aawanah Islamic Boarding School, Ciamis Regency, by implementing entrepreneurship in Prakarya and entrepreneurship (PKWU). PKWU is one of the subjects with the hope that students can produce and create more creative and innovative, increase the value of sensibility to the progress of the times while appreciating technology and local wisdom. In addition, students are expected to be able to become entrepreneurs after producing products that have been made. One of the Prakarya and Entrepreneurship learning activities studied at the Al-Mu'aawanah Islamic Boarding School is cultivating kale plants. Santri Pondok Pesantren Al-Mu'aawanah had the idea to process kale into chips. The priority problem of Pondok Pesantren Al-Mu'aawanah after successfully growing kale plants is excessive harvest but not supported by maximum processing and marketing. Kale processing is still carried out traditionally, not utilizing machine technology in production activities, causing production results to be low. Furthermore, the marketing of kale chips is still manual, namely that it has yet to utilize digitalization technology, so the production results cannot be distributed optimally. The rapid development of technology can be used to support kale processing activities, namely using Vacuum Frying technology and digitalization technology for marketing processed kale products online, one of which is through e-commerce. The methods used in the training activities are lecture methods, question-and-answer discussions then continued the practice of making an e-commerce system. This activity is expected to help the students of The Al-Mu'aawanah Islamic Boarding School in growing entrepreneurship and food security. Activities are planned to run for seven months, starting from preparation, implementation of counseling and training, and reporting.

Keywords: e-commerce, spinach, Vacuum Frying

INTRODUCTION

Situation Analysis

Islamic boarding schools are educational institutions that grew up several centuries ago. Islamic boarding schools have three main functions that are always carried out, namely: first, as a center for the generation of religious thinkers (Center of Excellence); second, as an institution that produces human resources (Human Resources), thirdly as an institution that has the power to empower the community (Agent of Development). Islamic boarding schools are also part of the process of social change (Social Change) amid changes that occur (Halim et al., 2005).

In the past, Islamic boarding schools only studied religious science, where students were not taught to be too *Hubuddunya* (worldliness). Still, with the development of the times, the Islamic boarding schools had entered a new chapter where education not only focused on religious science, but general sciences began to be applied, such as educational, social, and economic aspects. Islamic boarding school allows them to play a role as an agent of development in solving the financial problems of rural communities. In addition, after leaving the Islamic boarding school, students have the skills to set up their businesses without having to apply for jobs everywhere and even be able to open job opportunities for others.

Several Islamic boarding schools in Indonesia have begun to *transform* to enable students to live independently through entrepreneurship. Changing the pesantren curriculum, which used to only focus on studying today, is coupled with the existence of an entrepreneurial curriculum. One of the Islamic Boarding Schools that has developed entrepreneurship is the Al-Mu'aawanah Islamic Boarding School, Ciamis Regency, by implementing entrepreneurship in the subjects of Prakarya and entrepreneurship.

Craftsmanship and entrepreneurship or commonly referred to as PKWU, is one of the new subjects that emerge to be learned by students. With the hope that students can produce and create more creative and innovative, increase the value of sensibility to the progress of the times while appreciating technology and local wisdom that has been able to. In addition, students are expected to be able to become entrepreneurs after producing products that have been made. One of the Prakarya and Entrepreneurship learning activities studied at the Al-Mu'aawanah Islamic Boarding School is cultivating kale plants. Kale (*Ipomoea* sp.) is a type of plant that is a type of vegetable that is grown as food. Kale can be grown in lowlands and highlands. Long kale leaves, whitish-green are a source of vitamin pro-vitamin A. Nutritional content in 100 gr of fresh kale consists of 29.00 calories, 3.00 g of protein, 0.30 gr fat, 5.40 g of carbohydrates, 73.00 mg of calcium, C 32.00 mg of vitamins and 89.70 gr of water. Because of its nutritional content, kale is one of the foods with many fans; in addition to its savory taste, the kale plant is easy to get, and how to process it is easy.

Most people, especially Indonesians, usually process kale only as a side dish. Therefore, the students of Pondok Pesantren Al-Mu'aawanah have the idea to process kale into chips. Processed chips are one of the most popular food products in all circles. Chips are snacks classified as a type of cracker food that is dry, crispy, and high-fat (Lestari, 2015).

The priority problem of Pondok Pesantren Al-Mu'aawanah after successfully cultivating kale plants is excessive harvest but not supported by maximum processing and marketing. Kale processing is still carried out traditionally, not utilizing machine technology in production activities, causing production results to be low. Furthermore, the mascara of kale chips is still done manually, namely that it has yet to utilize digitalization technology, so the production results cannot be distributed optimally. The rapid development of technology can be used to support kale processing activities, namely using Vacuum Frying technology.

Using Vacuum Frying is a process that can maintain the nutritional value of vegetables. Vegetables are dehydrated without a browning reaction, or the product becomes charred (Setyawan & Widaningrum, 2013). According to Lastriyanto (1997), products produced using vacuum frying technology have a better texture and color, low oil absorption, and low vitamin damage, so the product has good quality and health levels. In addition, vacuum frying technology is one of the efforts to reduce the oil in the products produced (Andasuryani, Chandra, & Putri, 2018). The conventional vegetable and fruit frying process will have low quality because the frying is carried out at a relatively high temperature ($\pm 160-180^{\circ}\text{C}$), namely at the boiling point temperature of the oil. Suppose the process of processing vegetables and fruits is done conventionally. In that case, the taste and aroma will change, meaning that they are not by the taste of the original fruit, and the resulting product is not homogeneous (Setyawan & Widaningrum, 2013).

The development of information technology can also be used for marketing processed kale products based online, one of which is through e-commerce. E-commerce is a breakthrough in the world of information because it can provide information in a more attractive, fun, and online form at any time without a time limit (Sugeng, 2017). Furthermore, e-Commerce is buying and selling products, services, and information carried out electronically by utilizing a computer network. One of the networks used is the internet (Mumtahana, Nita, & Tito, 2017). It can be concluded that e-Commerce is part of Electronic Business where products in the form of goods and services can be sold online. In general, potential customers or customers can read, view, order, and pay for products in the company online.

Starting an online business today is very easy; relying on a smartphone or laptop and an adequate internet connection, people can have an online business by utilizing e-commerce and marketplaces, such as Shopee, Lazada, Bukalapak, and Tokopedia. People can also use social media such as Instagram and Facebook as product marketing media (Hariansyah, Winarti, Handayani, & Faozi, 2022). The difference between the buying and selling process in the e-commerce system and the traditional one is that all processes, from finding information about the necessary goods or services and placing orders to payments, are made electronically through the internet media (Maulana Susilo, & Riyadi, 2016).

Based on these conditions, it is necessary to carry out service regarding the Processing of School Garden Products with Vacuum Drying Technology and Marketing Digitalization in Growing Entrepreneurship and Food Security at the Santri Pondok Pesantren Al-Mu'aawanah, Ciamis Regency. This service activity aims to provide solutions to crop marketing problems by increasing knowledge and technology through creating an e-Commerce system, training on its use, then providing regular training to improve community skills independently.

Based on the priority problems stated, the solution offered to these problems is by increasing the capacity of production products through the addition of appropriate technology machines for the production of chips, then growing knowledge and technology through the manufacture of e-Commerce systems, along with training on their use in increasing entrepreneurship and food security. Then the provision of regular exercise to improve the skills of students independently.

Partner Problems and Solutions Offered

Based on the description of the analysis of the condition of partners, the priority problem at the Al-Mu'aawanah Islamic Boarding School after successfully cultivating kale plants is the abundant harvest but not supported by sound marketing processing. Visible problems:

- There is no technological touch in the chip production process, so production results are still low.
- Need to utilize information technology in marketing. Cryptic marketing activities are carried out through word-of-mouth promotions, school entrustment services, and marketing to the guardians of students who go home.
- Many transactions are carried out in a non-digital manner with limited circumstances and reach. So online transaction activities are needed to make it easier to purchase transactions anytime and anywhere through e-commerce.

The solutions offered in this community service activity focus on using Vacuum Frying machine technology and providing training on increasing knowledge and digitization technology for marketing through the creation of e-Commerce systems, along with training on their use. Furthermore, exercise regularly grows entrepreneurship and food security and improves the community's skills.

The objectives of the service that is related to the Main Work Indicators (IKU) of Siliwangi University carried out are:

- Providing training on the use of technology in crop processing with the relationship between the Higher Education IKU, namely lecturers activities outside the campus to provide knowledge that can be applied to the creative industry in the field of technology
- Providing training on the use of online-based marketing technology (e-commerce) on processed chips with the relationship between IKU Perguruan Tinggi, namely lecturers who are outside the campus, to provide knowledge that can be applied to the creative industry in the field of technology.
- Encouraging students to gain experience outside the campus by providing direction in the world of work to enable them to become an entrepreneurial spirit in the field of technology.
- Creating opportunities to create star-ups to capture the peace of mind of skilled workers in multimedia.
- Fostering the spirit of entrepreneurship and food security of students of The Al-Mu'aawanah Islamic Boarding School, Ciamis Regency.

METHOD

Based on the analysis of issues and problems faced by partners, the top priority to be resolved is how to use machine technology in school garden product activities and how to use digitalization technology in marketing processed school garden products. The solutions offered in this community service activity focus on using Vacuum Frying machine technology and providing training on increasing knowledge and digitization technology for marketing through the creation of e-Commerce systems, along with training on their use. Furthermore, exercise regularly grows entrepreneurship and food security and improves the community's skills.

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To achieve the expected target, the implementation of this partnership program starts from the preparation stage, the activity plan, to the performance of activities. Each such step is described as follows:

Preparatory Stage

The preparatory stage is planning the service program, which includes: (a) coordination with related parties and (b) Preparation of training materials. Coordination with related parties is carried out to synchronize the schedule of training to be held. The synchronization of this training schedule is carried out jointly by both partners and proposers and other related parties (in this case, Siliwangi Tasikmalaya University as the provider of the training place as well as the party that has the facilities needed to support training activities. The result of this institutional coordination is to obtain agreement on the timing of the implementation of training activities and the list of prospective trainees submitted by the partners. Furthermore, the preparation of training materials is arranged based on the materials that will be offered in community service activities. The proposing team carries out the preparation of this training material. The result of preparing this training material is the training material that will be used for participants during the training.

Implementation Phase

The implementation stage is in the form of counseling activities and training on processing school garden products with vacuum frying technology and marketing digitization given to the Santri of Al-Mu'aawanah Islamic Boarding School, Ciamis Regency. Implementation of activities is carried out by the time specified at the coordination with related parties. The number of participants from each partner will be limited by the rules and conditions applicable in the region where the service is carried out. The implementation of the training uses the method of lectures, discussions (question and answer), and continued practice (learning by doing).

Table 1 The Relationship Between the Material and The Method of Implementation Used

No.	Material	Method	Forms of Activity
1	Introduction of vacuum frying technology	Lectures	Lectures: <ul style="list-style-type: none"> • components of vacuum frying technology • how to vacuum frying technology works
2.	Imooji platform introduction	Lectures and discussions	Lectures and discussions about the imooji platform that can be used as a means or means of communication in creating interactive digital brochures, product catalogs, and product promotions

No.	Material	Method	Forms of Activity
3	Practicing account creation and opening a store on the shopee platform	Practice (learning by doing)	Training (learning by doing): <ul style="list-style-type: none"> • shopee account creation • store creation on shopee account • product upload stages at shopee store
4	Healthy school explanation	Lectures and discussions	Lectures and discussions on healthy schools to support product hygiene

Reporting Phase

The reporting stage is the preparation of reports and scientific publications. Preparation of reports and publications, used as a form of accountability of the proposer in the proposed Community Service Program. The stages of implementation that will be carried out can be seen in the following figure.

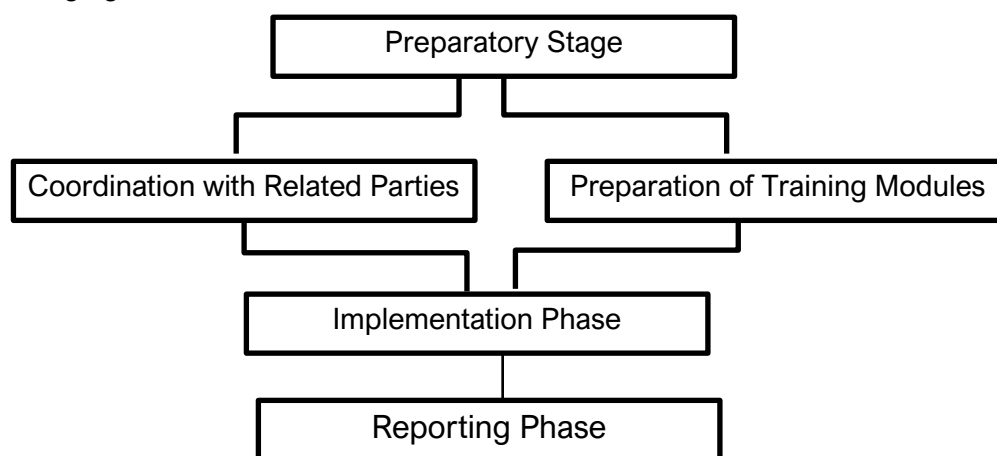


Figure 1. Stages of Implementation of PbM-KP Activities

RESULTS AND DISCUSSION

This community service activity can be described through two stages of training, namely the preparation and implementation stages. The preparatory stage is the planning stage of the service program, which consists of the following:

Coordination with related parties

Coordination with related parties is carried out to synchronize the schedule of training to be held. The synchronization of this training schedule was carried out jointly with partners, namely the head of the Al Mu'aawanah Islamic Boarding School Foundation and the Head of Al Mu'aawanah High School, Ciamis Regency. The result of this institutional coordination is to obtain an agreement on the timing of the implementation of training activities, namely Sunday, October 16, 2022, as well as 30 training participants.

Preparation of training materials

The results of the preparation of the training materials are the introduction of vacuum frying technology, the introduction of the imooji platform, the creation of an account and opening a store on the shopee platform, and the explanation of healthy schools.

After the preparatory stage, it is followed by the implementation stage. The activity began with lectures and discussions and continued with practice (learning by doing). This activity will be held one day, on Sunday, October 16, 2022, from 09.00-14.00 WIB. The participants of the movement were 30 students of The Al-Mu'aawanah Islamic Boarding School. The training was held in the classroom of Al-Mu'aawanah High School.

The implementation of this training activity was carried out by 4 (four) service teams with the subjects presented, namely:

Introduction of vacuum frying technology

Vacuum Frying is a frying technique carried out using a Vacuum Fryer tool. A vacuum frying machine, namely Vacuum Fryer, is a system that consists of 3 main parts, namely a frying tube, a vacuuming device, and a heating and temperature control device. What distinguishes the Vacuum Frying method from other frying forms is that the oil used is much less, and the fryer's temperature is low, only around 70°-80°C. The use of low temperatures and little fat is intended to get the result of a frying pan that does not contain much fat, does not change color, does not change the taste, and does not lose its original content.

Imooji platform introduction

Imooji is a digital platform as a communication tool for creating interactive digital brochures, product catalogs, product promotions, and so on. Using Imooji, students can easily target buyers through social media such as Facebook and Twitter through the share feature and chat applications such as WhatsApp and Line. In addition, a QR Code is also available to make it easier for targeted buyers. With the various features offered by Imooji, students or novice entrepreneurs can carry out interactive marketing activities independently at an affordable cost and even for free. Not only in the form of images and text, but Imooji also provides song and video features to provide a more memorable experience.

Practicing account creation and opening a store on the shopee platform

This third material consists of creating a shopee account. Students are taught how to create a shopee account and then introduced to creating a store on a shopee budget. After that, knowledge is given about how to upload products and features on the shopee platform.

Healthy school explanation

The last material is about healthy schools. The provision of this material aims to create a clean and healthy school environment. This material seeks to create healthy schools and clean and healthy products.

All these materials can be delivered by the speaker clearly and very well. The training activities show that students are enthusiastic and have not mastered digitalization technology for marketing. After the presentation of the material, it was followed by a question and answer session. In the question and answer session, participants asked several questions, including why digitalization of marketing is necessary and how to manage finances on the shopee platform, such as money and expenses.

Overall, the training activities "training on processing school garden products with vacuum frying technology and marketing digitization given to Santri Pondok Pesantren Al-Mu'aawanah Ciamis Regency" can be said to be excellent and successful. This can be seen from the achievement of the number of trainees, the achievement of training objectives, the achievement of training materials that have been planned, and the achievement of improving the ability of the training participants to utilize technology in the processing of garden products and the use of technology in marketing.

CONCLUSIONS AND RECOMMENDATIONS

Conclusion

Overall, training on School Garden Product Processing with Vacuum Frying Technology and Marketing Digitalization in Growing Entrepreneurship and Food Security at The Santri Pondok Pesantren Al-Mu'aawanah, Ciamis Regency, can increase students' knowledge about the use of technology in processing garden products and the use of technology in marketing as well as fostering an entrepreneurial spirit and meeting food security.

Recommendations

This service program is expected to be followed up elsewhere in the following year to support novice entrepreneurs, especially students, in developing their business ideas through digital platforms and can foster an entrepreneurial spirit.

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