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Improving Fish Cultivation Skills Through Making Independent Fish Food for Fish Cultivation Group in Parangargo Village

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ABSTRACT

Fish food is one of the factors that play an important role in the growth process of fish. Fish growth can run optimally if the amount of food, food quality and nutritional content are met properly. For this reason, it is necessary to improve fish farming skills through the manufacture of independent fish food for fish cultivators. This activity is carried out based on partner problems, namely the fish cultivator group in Parangargo Village, Wagir District, Malang Regency. This activity uses multiple methods, namely observation, interviews, lectures and discussions. This activity is equipped with indicators of achievement to facilitate evaluation. This activity was carried out in stages in two locations. The first location was carried out in the Edu Park Hall, Faculty of Agriculture and Animal Husbandry, University of Muhammadiyah Malang and the second was carried out in food processing and fish farming, Probolinggo Regency. The result of this activity is an increase in the knowledge (cognitive) aspect of partner communities about self-fooding, which has increased. In addition, participants also experienced an increase in fish fooding management. In terms of skills in processing alternative foods, an increase of 50%, as measured by the active participation of participants in fish food processing practices.

1. Introduction

Abundant biological natural resources are the leading commodity of the Indonesian nation. Indonesia is a maritime country with an area of around 5.8 million km2 of waters [1]–[3]. This shows the great potential of both marine and freshwater fisheries. The diversity of fish can also be seen from the large number of fish species [4]–[10]. The fishery sector is one of the agricultural sub-sectors that has an important role in improving the quality and quantity of fishery production which is directed at increasing the income and standard of living of the community [11]–[13]. On the other hand, the fisheries sector can also produce animal protein to fulfill food and nutrition, supply industrial raw materials, expand employment opportunities, and open up business opportunities. This is also supported by the increase in the world's population, the community's need for animal protein from fish is also increasing. Through fish farming, it can be used as a potential asset for the fulfillment of nutrition in the community.

To achieve maximum fish, intensive maintenance is needed by providing additional food [14]–[16]. Basically, artificial food is divided into 3 based on their needs, namely supplementary food, supplementary food and main food [16], [17]. The function of the food is to support the survival and increase fish production. Fish production has been pursued through fish farming in East Java. One of the developing areas is in Parangargo Village, Wagir District, Malang Regency. The form of fish farming in the partner village is still developing technology. But until now the use of food still relies on food from the factory (pellets) as the main food of the cultivated commodities that are kept. Pellets are a form of artificial food made from several kinds of materials that we mix and make into a dough, then we print them so that they become small bars or spheres. The size ranges from 1-2 cm. So the pellet is not in the form of flour, not in the form of granules, and not in the form of a solution [18].

The intensity of providing artificial food (pellets) continuously throughout the maintenance period with the price of artificial food being quite expensive and the selling price of the harvest being relatively cheap is the calculation of the profit of the cultivator Fish farmers complain that the need for expensive fish pellets makes little profit and requires high business capital [19], [20]. In addition, the partner's condition is that there is no real profit calculation from the innovations carried out,

A good pellet composition contains at least fat, minerals, vitamins and protein [21], [22]. From the contents of the pellets, there are ingredients for making pellets, namely bran, fish meal and other supplements. If fish food can be produced independently by farmers, it will have an impact on factory food dependence. Independent production can reduce production costs and increase the quantity, quality and selling price of fish. The problem that often becomes an obstacle is that the provision of artificial food requires a relatively high cost, even reaching 60-70% of the production cost component [19].

One of the efforts to overcome partner problems is by educating them on making independent fish food. The manufacture of independent fish food can come from materials that are around partners [23]. Of course, the raw materials used must contain good nutritional value, namely those that are easy to obtain when needed, easy to process and process, contain the nutrients needed by fish in accordance with Indonesian National Standards.[24]. Fish food is one of the factors that play an important role in the growth process of fish. Fish growth can run optimally if the amount of food, food quality and nutritional content are met properly. For this reason, it is necessary to improve fish cultivation skills through the manufacture of independent fish food for groups of fish farmers in Parangargo Village, Wagir District, Malang Regency.

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2. Methods

Various methods in this activity are carried out to achieve the target of understanding and experience of partners towards alternatives in making independent food. This training location is carried out in stages. The first stage was carried out in the Edu Park Hall, Faculty of Agriculture and Animal Husbandry, University of Muhammadiyah Malang. In the first stage of activity as a stage for stimulus and equalization of perceptions of the importance of independent food for fish farmers. The second stage is carried out in Probolinggo Regency as a place for previous partners who have been able to develop fish farming independently. This activity involves various parties, namely a service team consisting of four lecturers, two administrators, presenters and also the Probolinggo Regency fisheries office. Several communities in Parangargo Village, Wagir District, Malang Regency as partners were actively involved in this activity. This activity was carried out in February 2021. With new normal conditions, this series of activities still pays attention to health protocols and carries out health procedures. The selection of this method takes into account the topic of the material used in this activity. The topics discussed in this activity are materials, tools and methods of processing food. The methods used in this activity are lectures, interviews, discussions, and direct observation. The following is an explanation of the method used:.

A. Lecture

Lectures are carried out in the delivery of material on training and introduction of independent food. This lecture method provides explanations and oral narratives by the speaker to the participants, while the participants listen carefully to the main points using various media that have been prepared by the presenters.

B. Interview

The interview method in this activity was carried out to collect data through direct question and answer from the data source, namely the participants. This interview activity aims to obtain information that is relevant to the topic of the material and also the implementation of activities.

C. Discussion

The discussion method is carried out to solve problems, answer questions and understand the knowledge that has been given by the presenter to the participants. The discussion method involves the trainer communicating two-way with the trainees, and the trainees communicating with each other. As active participation is encouraged, the discussion method gives trainees the opportunity to obtain foodback, clarifications and various points of view.

D. Observation

Observation is a data collection activity carried out by systematically recording findings of potential fish food processing potensi.

3. Results and Discussion

The diversity of the community in Parangargo Village, Wagir District, Malang Regency is a form of activity based on the many potentials that can be developed in this village. This activity is carried out through the *Program Pengabdian Masyarakat Internal* (PPMI), which is a program of the Directorate of Research and Community Service Unit. Observations showed that the participants, namely the community partners of Parangargo Village, Wagir District, Malang Regency were very interested in developing independent food innovations. This is due to the high dependence on food manufacturers. The high price of fish food and an obstacle, the use of waste materials for fish food is not widely known, especially the technique of making fish pellets is still lacking, therefore knowledge transfer is needed about procurement and fooding [25]–[27]. The service team

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and partner groups discussed designing follow-up activities to develop independent food product innovations as solutions to partner problems. The most important step in service activities is implementation or application. Not only limited to theories but partner communities need clarity and understanding in an applied manner. The following is the implementation of activities as an effort to improve fish cultivation skills through the manufacture of independent fish food for groups of fish cultivators in Parangargo Village, Wagir District, Malang Regency in table 1.

Table 1. Implementation of Activities

Time	Activities
1st week	Preparation of Phase I Activities a. Identify problems and resources for service activities. b. Collecting data about partner participants who will participate in this activity c. Conditioning of the place of introduction
2nd week	The implementation of the first activity with the title of Extension and Introduction of Fish Food Making in Fish Cultivation
3rd week	Preparation of Phase II Activities a. Defining resources for activities b. Collecting data about partner participants who will participate in this activity c. Preparation of administrative completeness for presenters and also the Probolinggo Regency Fisheries Service d. Conditioning of the activity place.
4th week	Implementation of training activities and also the practice of making independent food in a simple way

This activity is equipped with indicators and achievement of activities to support fish farming

Table 2. Indicators and Educational Achievements of Food Making in Fish Cultivation

Num	Activities	Success Indicator
1.	Extension and Introduction of Making Fish Food in Fish Cultivation	a. Knowledge transfer for cultivators b. Increased understanding of the importance of making food as a support for fish farming
2.	Independent Food Production Training in Fish Cultivation	a. There is a change in knowledge and skills in making food using bulk fish. b. Institutional improvement

Based on the activity design and achievement indicators, the activities that have been carried out in this service are as follows:.

A. Extension and Introduction of Fish Food Making in Fish Cultivation

This activity is the first step in improving fish farming skills through the manufacture of independent fish food for groups of fish cultivators in Parangargo Village, Wagir District, Malang Regency. The activities participated by the participants, namely community partners, service teams and administrative staff were carried out in the Edu Park Hall, Faculty of Agriculture and Animal Husbandry, University of Muhammadiyah Malang. This activity is carried out during the new normal. This series of activities consists of:Menghimpun dan memilih keputusan yang relevan untuk kegiatan.

1) Prepare extension aids such as LCD projectors, material in video shows and power points.

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2) Prepare tools and materials for the manufacture of fish pellets, namely a small/simple scale pellet making machine (meat grinder), winnowing, and food raw materials.
3) Conditioning the place of activity in accordance with the health protocol.

Before carrying out the activity, all participants were sterilized to continue to comply with the health protocol. Here's picture 1 of the activity of checking body temperature.

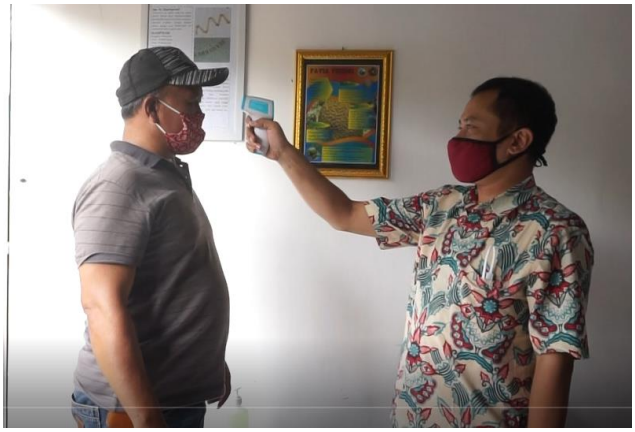

Figure 1. Body Temperature Check

Conditioning the place of activity that complies with the health protocol is a form of commitment from the service team in carrying out activities offline / outside the network. So the various preparations must be well designed. In addition to preparing tools and materials for the manufacture of food, also preparing props, namely examples of how to mix ingredients for food needs. This outreach activity is complemented by demonstrations of processing food ingredients and making pellets. In addition, participants are actively involved in activities. This can be seen from the enthusiasm of the participants by asking questions and also observing the process of making pellets in a simple way. The following is a picture of 2 outreach activities.

Figure 2. Extension of Food Making

B. Independent Food Production Training in Fish Cultivation

The second activity in an effort to improve fish farming skills through the manufacture of independent fish food for groups of fish farmers in Parangargo Village, Wagir District, Malang Regency was carried out in Probolinggo Regency. This activity involved the Probolinggo District Fisheries Office to provide a strengthening

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understanding of making fish food independently. This activity is carried out through the following stages:

1) Collect and select relevant decisions for activities.
2) Prepare administrative completeness
3) Conditioning the activity location
4) Checking tools and materials as well as tools used in the manufacture of fish food.

This activity was held in the last week of February 2021. The activity which was attended by various parties went smoothly. The participants were very enthusiastic because this activity was carried out directly at the location where the independent food was made. The following is a picture of 3 training activities for making fish food.

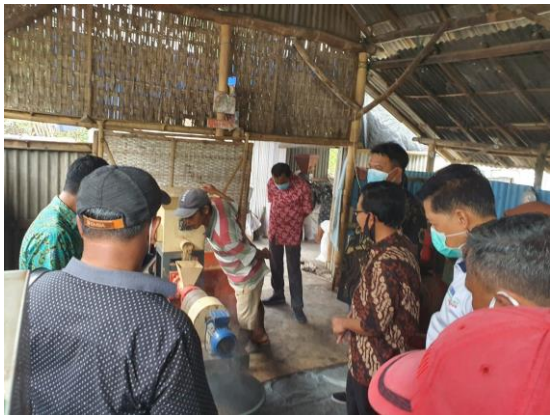

Figure 3. Fish Food Making Training

Based on the results of interviews with participants, this activity showed that participants were very enthusiastic, because participants experienced firsthand the introduction of the materials used, the various tools used and the process of making food. The success of these activities is evaluated by looking at the responses given by the activity participants, which is measured through:

1) Knowledge transfer for cultivators
2) Increased understanding of the importance of making food as a support for fish farming
3) There is a change in knowledge and skills in making food using bulk fish

This activity to improve fish cultivation skills through the manufacture of independent fish food for groups of fish farmers in Parangargo Village, Wagir District, Malang Regency is said to have received a very positive response from the participants. This activity is supported by the active participation of partners. Active participation is not only seen during activities, but active communication about food outside of activities is still being carried out.

One of the most interesting aspects of this activity, according to participants, is that the presence of independent food production provides efficiency in production costs. So that in the aspect of knowledge (cognitive) the partner community about self-fooding has increased. In addition, participants also experienced an increase in fish fooding management. In terms of skills in processing alternative foods, an increase of 50%, as measured by the active participation of participants in fish food processing practices.

4. Conclusion

This fish-making activity is carried out through the transfer of knowledge about the importance of fish food in fish farming. The activity to improve fish farming skills

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through the manufacture of independent fish food for fish cultivators is carried out through two activities. These activities are counseling and introduction to the manufacture of fish food in fish farming and training on independent food production in fish farming. This activity is designed in stages to construct participants' knowledge in a deep and meaningful way. This activity uses multiple methods, namely observation, interviews, lectures and discussions. This activity provides participants with cognitive and skills in processing fish food in fish farming.

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