

Increasing the competitiveness of corn into healthy noodles for Rantau Bengkayang village, West Kalimantan

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ABSTRACT

Rantau village is a village that is not yet food secure in the Bengkayang district. Corn is one of the main village products but still uses conventional cultivation methods and has not implemented farming management, so its utilisation is not optimal. The crop yields in the form of shelled corn are sold to Singkawang at a price of IDR 4000 per kg. Lack of knowledge and skills, including corn diversification technology, is the reason why this village is not yet developed. The impact is that the use of corn to increase household food consumption patterns has not been carried out. One of the partners of this service program is the dissemination of technology to the community, one of which is PKK. The purpose of this service is to increase the knowledge and skills of PKK members so that they are able to improve food consumption patterns and initiate new income for families. The solution is to transfer processed diversification technology that is applied to food products, namely healthy noodles from corn and vegetables. Implementation methods include socialisation, technology dissemination, evaluation and monitoring. The target of this service is for at least 50% of PKK members to increase their knowledge of healthy noodles, apply noodle menus for social events, at least 3 PKK members and application for family food security, and at least 1 PKK member initiates commercialisation around the village.



KEYWORDS

Rantau
Corn
Noodle-healthy



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1. Introduction

One of the government's efforts to achieve food security is a program to utilize local food through diversification technology. The local food program is an old program but the results have not been tangible until now, including the success of its implementation at the family level. One of the villages that has not been seen its activity in local food diversification is Rantau village. According to Fixsen et al., community service is one of the technology dissemination programs to empower communities [1]. Rantau village is one of the villages located in the district of Monterado, Bengkayang district. The location of this village is closer to Singkawang, which is about 1 hour and 30 minutes compared to going to the city center of Bengkayang Regency which takes 3 hours. The result of the author's field orientation when heading to the village location is that the signal is difficult or even non-existent in this area. Besides that the pattern of food consumption for energy intake is still under ideal conditions. This was conveyed by the local village midwife when the author conducted a discussion to collect existing problems. When we discuss village problems, it is known that one of the causes is that human resources (HR) are not yet skilled enough and the knowledge is still low, especially the diversification technology problem. This situation can be seen in the corn harvest, which is the main commodity of this area, which is only sold in the form of cobs and shelled corn. The strategic role of local food for food diversification has been carried out in other areas. This local food potential is strategically related to increasing family income and food self-sufficiency. According to Nasution et al. one form of downstream research from universities is through community service [2]. The partner of this activity is a social organization for Family Welfare Development, known

as PKK. Community service through the Technology-to-Community Dissemination Program (PDTM) scheme can be one of the collaboration programs for downstream technology from universities to address community problems.

The competitiveness of the target partner community is one of measure toward the success of technology dissemination impact. According to Greenhalgh, the process of spreading innovation and technology to the public is intentionally called technology dissemination [3]. Dewi et al. (2017) has accelerated Lingga village to become food independent through local food diversification [4]. One form of diversification of processed corn is in the form of noodles where the corn flour is nicstalized first [5]. Consideration of the products to disseminate noodles because noodles are a type of processed food favored by the community regardless of age and technology, the process is very simple and practical and noodle products are one of the products that are worth selling. According to Indrianti, noodle products in the form of wet noodles, dry noodles, and instant noodles have now become the second main food ingredient in Indonesia [6]. Dissemination of corn noodle processing technology has been carried out in the form of a previous community empowerment program [7]. The conveniene technology and materials used turns out to have an impact on use in daily consumption and for social activities such as during social gatherings or religious events such as Christmas. Diversification of corn into noodles is a technology that has been widely used considering the high substitution capacity of wheat. Corn diversification can be done on wet noodles or dry noodles. Wet noodle diversification has been carried out.

2. Method

The target audience for this program is the PKK in Rantau Village, which consists of 20 definitive members. The PKK in Rantau village is not yet active. The implementation of this PDTM service is from 4 months. The method used in the implementation of this dissemination activity is the preparation of materials and tools, field orientation, licensing, socialization, dissemination of technology through the stages of demonstration, training, mentoring, while the next stage after technology dissemination is monitoring, and evaluation. The socialization aims to introduce the program, while in this activity the emphasis is on diversification knowledge and its implementation in family consumption patterns and the initiation of commercialization. Dissemination of Diversification Technology is carried out through the stages of training, demonstration, and production technology assistance. The material provided in this service is in the form of counseling about increasing corn competitiveness through food diversification, dissemination of corn flour production technology, healthy noodle formulations from wheat-maize composite flour. The method of making corn noodles uses the results of research by Afifah and Ratnawati which is modified by the service implementer [8]. In addition, this service program also provides training on standard standards for packaging and labels and their application to dry noodle products in relation to quality and market as well as improving governance. Participants' ability to accept this program is measured by the results of the answers to the questionnaire before and after the activity takes place which is then represented in the form of a percent. The impact of this activity was seen in its progress after one month of training and during mentoring through question and answer and in person at the partner's place. The aspect that is measured in seeing the impact of success is based on the methodology developed by Oke Anandika Lestari [9].

3. Results and Discussion

The results of the Rantau village field orientation are presented in Figure 1. Figure 1 (a) Rantau Village Office; Figure 1 (b) Rantau Village Settlement Center; Figure 1 (c) Corn Field Along the way. The initial visit of this activity was a field orientation so that the partners' final conditions were known and at the same time carried out the processing of permits with the village head. Maize is resource based food in population of the world, many people like in Africa's food made from maize and also some countries in Asia like China, India, Indonesia maize become one the special food. In the other hand maize is not only resource of food for human kind besides it's the resource of food for animals [10]. Corn in Indonesia is a local commodity that can be used to support regional food security. The competitiveness of maize products can be created to food processed able to fulfill the daily needs consumption. Maize is a second

carbohydrate source commodity after rice, which is very important for food security and an important role in the husbandry of feed industry and the food industry. In addition to analog rice foods, maize can also be processed for various products such as maize flour the which is known as maize starch, and noodles. Corn is one of the superior products of Rantau village and currently the harvest is only sold in shelled form so that the competitiveness of the product and its economic value is low. Therefore, it is necessary to increase the competitiveness of maize in the Rantau village through the dissemination of diversified technology. Developing corn-based innovations for Rantau villages into processed products is an effort to support the community for government programs, especially food diversification. Suarni et al. said that efforts to develop food diversification need to socialize the corn cultivation and processing technology package to the wider community, especially farmers, food craftsmen, and food product businesses [11].



Fig. 1.Environmental Conditions of Mitra Village

The technology dissemination program is carried out based on several stages, namely socialization, technology dissemination through demonstrations, training and mentoring. This activity is continued with regular monitoring and evaluation so that partner difficulties can be overcome immediately. After preparing both tools or demo products, the next step is socialization. Socialization aims to deliver programs to solve problems in accordance with the agreement of partners. Therefore, the initial step is to determine the level of understanding of knowledge before and after socialization. The atmosphere of the socialization is presented in Figure 2. Figure 2 (a) Preparation for Socialization; Figure 2 (b) implementation of Socialization. The contribution of partners to the socialization activities is the making of invitations and the preparation of the location.



Fig. 2. Implementation of Socialization

At the time of public socialization, corn noodle products were introduced to find out how much public knowledge about this product was through a questionnaire. According to Oke Anandika Lestari, it is

necessary to observe the improvement of its capacity, both knowledge and skills, from the stages of socialization, application of science and technology, mentoring and evaluation with expect that the impact of empowerment activities will be real [9]. During the socialization of partner communities, participants were given briefing on the importance of corn competitiveness by carrying out further processes. This is in accordance with the results of previous studies. According to Halid, in increasing the competitiveness of maize processed products, it is necessary to pay attention and make raw material costs and labor costs efficient [12]. The description of the knowledge of the participants in the socialization about the knowledge of corn noodles is presented in Figure 3.

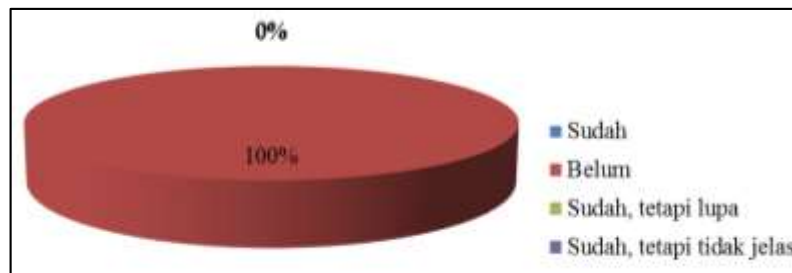


Fig. 3. Participants Opinions on Disseminated Technology Activity

According to the participants, the target audience was because they had never received similar training. The results of community knowledge before and after counseling showed that it increased by 100%. Basically, technology dissemination is carried out based on the consideration of the objectives of (1) developing technological innovation, (2) institutional development, and (3) increasing the availability of facilities and infrastructure [13]. Furthermore, it was concluded that the increase in perceptions, attitudes and knowledge of partners was an indicator of measuring the success of dissemination as was done for corn farmers in Sigi Regency. In this service activity, the level of understanding was measured through questionnaires and direct questions and answers so that the understanding of the material given to the target audience was also carried out to measure the level of usefulness of the material according to the target audience. The level of understanding is a measurement of the understanding of the material given to the target audience, in addition to measuring the level of usefulness of the material according to the target audience. The results of measuring the level of material understanding and usability according to the target audience are shown in Figure 4.

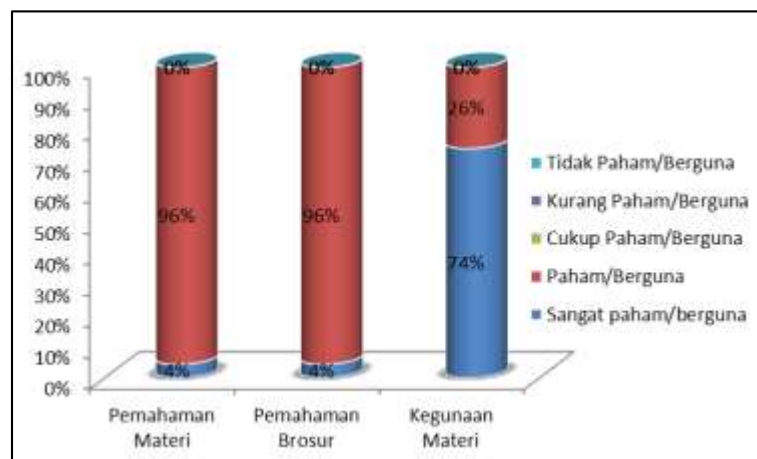


Fig. 4. Convenience level of Understanding Technology

The level of understanding the usability is measured by 5 levels, namely not understanding / useful, not understanding/useful, quite understanding/useful, understanding/useful, and very understanding/useful. These results indicate that the understanding of material at the level of quite understanding is thought to be due to the availability of material brochure tools and also the

understanding of brochures provided according to 96% of the target audience at the understanding level. Based on this it can be said that the materials and brochures provided can be understood by the target audience at least 70% of the target has understood the material. As a summary of the material made short and concise. This is supported by the results of Kurniawan's research [14], that the use of brochures can be used as a learning resource by getting user responses of 4.3 or very good. According to Adimihardja there are 4 factors that influence society in accepting technology, namely; (1) community readiness in accepting technology; (2) community mindset which is difficult to change or not; (3) Assistance or facilities provided by companions are given wholeheartedly, and; (4) The program provided is complete or not, sustainable or not [15]. The atmosphere of the dissemination of corn noodle technology is presented in Figure 5.



Fig. 5. Diversification of Corn into Wet Noodles and Kremes Noodles

The success of implementing the technology was evaluated using the questionnaire presented in Figure 6.

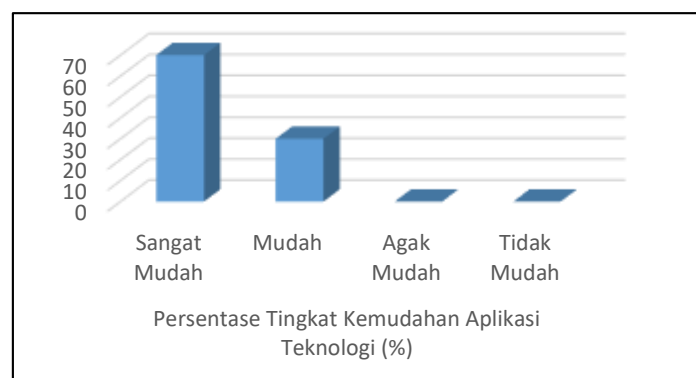


Fig. 6. Convenience level of Technology Application

Figure 6 provides an illustration of how the community perceives how difficult the technology is to implement. This dissemination was followed by packaging and labeling assistance and their sincerity after

the mentoring, there were 2 PKK members who started a business to sell Kremes noodles. The choice to sell mie Kremes because it is more durable and can be sold to school children in the village. Based on Figure 6, it can be seen that 70% of the target audience partners said that the application of noodle processing technology was very easy and 30 percent said it was easy. According to Gulia et al. instant noodles are divided into two groups, namely dry instant noodles containing 8-12% water content and fried instant noodles containing 2-5% water content [16]. Each implementation of training and mentoring ends with how to label and package and is given skills on how to guarantee the quality of each product. This knowledge is important, especially for non-halal products that will be traded. The results of the corn noodle logo are presented in Figure 7. The logo is one of the important identities in commerce.



Fig. 7. Corn Noodle Logo

Likewise, evaluation and monitoring are carried out for starting new activity and evaluating previous activities by asking questions and using a questionnaire.

4. Conclusion

Activities to increase the knowledge and skills of human resources for villages can be the initiation of accelerating the achievement of food security and prosperous communities. This is related to improve organizational understanding and economic concepts based on local culture.

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Declarations

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