

Skill improvement of tea bags processing from moringa, gotu kola (*Centella asiatica L.*), and cocoa leaves

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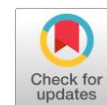
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ABSTRACT

Agricultural's potential sometimes have not maximally utilized because of several plants that have health effects such as moringa, pegagan/gotu kola, and cocoa. Communities in Padukuhan Gunungasem, Salaran, and Soka, Ngoro-oro, Patuk, Gunung Kidul still have limited knowledge and skills related to processing these plants. The purpose of this community service were to give counseling about food safety Good Manufacturing Practice (GMP), train the the making of tea bags healthy drinks, and train the packaging and labels of tea bags. The method used was training and hands-on practice. The program implementation team consisted of UAD Food Service Industry UAD's lecturer and Public Health students. The activity was held in one of the residents' house or the village head's house. The results of community service were the knowledge about food safety increased, skills in making Moringa, "pegagan", cocoa leaf teabags and in packaging and making tea bag labels also increased.



KEYWORDS

Cocoa
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Training



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1. Introduction

The leaves of gotu kola, moringa, and cocoa have more nutritional content and can be used as an alternative to functional healthy drinks. Moringa leaves contain various amino acids such as aspartic acid, glutamic acid, alanine, valine, leucine, isoleucine, histidine, lysine, arginine, vinyllalanine, tryptophan, cysteine and methionine [1]. Active ingredients that affect health such as alkaloids, saponins, tannins, flavonoids, steroids, and triterpenoids are found in gotu kola. Triterpenoid antioxidant groups, steroids, and saponins are included in the raw materials of traditional medicines as appetite enhancers, maintaining vitality, weak nerves, anti-senile, antistress, fever, bronchitis, diabetes, psychoneurosis, hemorrhoids, and high blood pressure. In addition, the content of mineral such as potassium, sodium, magnesium, calcium, and iron, phosphorus, essential oils, pectin, amino acids, B vitamins, and the bitter substance, vellarine, are also beneficial for the body [2]. While cocoa leaves also contain active ingredients that are no less important. Cocoa leaves contain theobromine, caffeine, anthocyanins, leucoanthocyanins, catechol, flavonoid glycosides, tea polyphenols, catechins, and tea pigments [3], Osman et al. (2004) in [3] mentions that the polyphenols in cocoa leaves consist of epigallo catechins (EGCG), epigallo catechins (EGC), epi catechin errors (ECG), and epi catechins (EC). In addition, cocoa leaves also contain Se (selenium) which is higher than tea leaves, which is a microessential element for growth and development for animals, plants and humans. (Thiowijaya, 2001) in [3].

The huge potential health of moringa, gotu kola, and cacao has not been utilized properly. These three plants have low economic value because they are only used as animal feed in the Gunungasem, Salaran, and Soka Villages, Ngoro-oro Village, Patuk District, Gunung Kidul. In addition, people do not know that these plants can be used as herbal drinks taken from the leaves of the plant and they do not have the knowledge and skills in processing these leaves into tea bags. The purpose of this community service was to provide information on food safety in Good Manufacturing Practice (GMP) [4], [5], train processing

of plants into health drinks in the form of tea bags, and train to package gotu kola tea and make labels on packages of moringa leaf tea, gotu kola, and cocoa [6].

2. Method

This empowerment used counseling methods and direct practice through training. The participant were women in the Gunungasem Village, Salaran, and Soka, Ngoro-oro Village, Patuk District, Gunungkidul. They studied about Good Manufacturing Practice (GMP) for food safety implementation. The practical activities given to them were training on leaves processing into health drinks tea bags and training on packaging and labeling of health drinks. This activities were held on 10-12 February 2020. Evaluation of this empowerment used short interviews with several participants to assess the result of the programs.

This community development was carried out by food service industry's lecturer who have competency in local food processing. Besides lecturer, this activity also involved several undergraduate students at Universitas Ahmad Dahlan. The training activities were held in several residents' houses in Padukuhan Gunungasem, Salaran, and Soka, Ngoro-oro Village, Patuk District, Gunungkidul.

3. Results and Discussion

The empowerment began with Good Manufacturing Practice (GMP) food safety education by delivering material on the application of GMP in Food Processed SMEs using power point media (Fig. 1). It aimed to provide knowledge for the participants to have the good habit in maintaining food safety during food processing, which was applied when processing gotu kola, moringa, and cocoa leaves into tea bags. One of the impacts of this education was the gloves usage when carrying out the production process.



Fig. 1. Good Manufacturing Practice (GMP) Education

With the food safety knowledge that they had, the participants, namely women in Padukuhan Gunungasem, Salaran, and Soka, Ngoro-oro Village, Patuk District, Gunungkidul received training on leaves processing into healthy tea bags (Fig. 2) and training on packaging and labeling (Fig. 3). These two activities began with the exposure of education material followed by the practical activity of making gotu kola, moringa, and cocoa leaf tea, packaging, and labeling practices [7].

Food safety has a real impact on the consumers health. Around 2 million people, mostly children, died due to digestive diseases from contaminated water and food and poor sanitation [8], [9]. Other facts were related to food safety in the world include 77 million people in America experiencing food-related illness, some of which consisted of children under the age of 5 years. Around 600 million people, with a ratio of

1 in 10 people in the world, got sick after eating contaminated food and 420,000 of them died [10]. Several incidents of food poisoning had also been found in Indonesia, especially the Special Region of Yogyakarta [11], [12] which showed that food safety standards are still not optimally implemented in the food production process. Unsafe food does not only have an impact on health aspects, but also affects aspects of socio-economic development, tourism, and trade. Therefore, this food safety education should be delivered to the community.



Fig. 2. Leaves Processing Into Healthy Tea Bags

The participants made tea bags using gotu kola, moringa, and cocoa leaves which were manually dried using sun drying process. After drying, the leaves were mashed using a blender (Fig. 2). Healthy drink tea were served in the form of tea bags using tea papers. The women's group in Padukuhan Gunungasem, Salaran, and Soka also practiced preparing tea bags by measuring, cutting tea paper, and then gluing on both sides with the hand sealer. The tea powder then was put into a tea bag and the top was sealed with a hand sealer. In the top of package, a food grade rope was also added as a handle to serve in brewing tea as a healthy drink.



Fig. 3. Training on Tea Bag's Packaging and Labeling

The finished tea bags were then packaged in a standing pouch made from a combination of aluminum foil and paper so that they have a long shelf life. The resulting product is given product information by adding a label on the packaging. The label contained the brand, product weight, composition, production location, manufacturing date, and expiry date information.



Fig. 4. Tea Bags From Gotu Kola, Moringa, And Cacao Leaves

This community development was able to improve the knowledge and skills of the participants from Gunungasem, Salaran, and Soka Padukuhan. Participants' knowledge in food safety and the usage of gotu kola, moringa, and cacao leaves increased as indicated by the results of short interviews with several participants. Meanwhile, the improvement of skills in processing plants into health drinks and skills in packaging and labeling health drinks could be seen from the products that produced by these community groups (Fig. 4). These are the indicators for the successful empowerment programs.

The results of this program are in line with empowering results in rural independent communities in Nogosaren Village, Getasan District, Semarang Regency. The entrepreneurship training provided benefits, both social and economic, as well as the benefits of the entrepreneurial training learning process that resulting the changes in knowledge, attitudes, and entrepreneurial skills [13]. Studies conducted by Nurhasah showed that food safety aspects have an indirect influence on consumer purchasing decisions [14]. In line with this study, the Lubis' study showed the similar view that food safety aspects have a small influence on consumers' purchase intentions in purchasing organic food products in Bandar Lampung [15]. On the other hand, providing safe food must always be done by the food industry because food safety is an important aspect that involves many things.

4. Conclusion

Education and training on the usage of gotu kola, moringa, and cocoa leaves into healthy drinks tea bags can increase the food safety knowledge of the community and improve skills in making tea bags from gotu kola, moringa, and cocoa leaves. The participants had also been able to package and give label to the tea bag products according to the characteristics of their community groups.

Declarations

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