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Training of Spicy Salted Eggs Making in Tanjung Kesuma Village, Purbolinggo Subdistrict, East Lampung Regency

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ABSTRACT

Tanjung Kesuma Village is one of the cultivation centers of egg-laying hens. The product generated from this cultivation is chicken eggs. Eggs contain complete nutrients, such as carbohydrates, fats, proteins, minerals, and vitamins. However, eggs exhibit a drawback, which makes them cannot be stored for a long time. Salted eggs are one form of processing to increase the shelf life of eggs without reducing their nutritional content. The purpose of this community services activity was to conduct training in making salted eggs. The implementation of this activity was expected to increase the selling value of eggs and their shelf life. Eggs that have been processed into salted eggs have an increased selling value and a longer shelf life. The methods used in this activity were socialization and extension, training, and practice of making salted egg. This activity was conducted on 3 January 2023. The practice of making spicy salted eggs used the basic ingredients, consisting of chicken eggs, salt, and condiments (garlic, red pepper, and lemongrass) with 10–14 days of soaking. The results of the training have generated a good responses from the Family Welfare Program (PKK) housewives participants, in the form of quite interesting discussions, and all participants were involved in the practice of making spicy salted eggs. This community services activity is expected to help participants to better understand the innovation of making salted eggs using the brine and condiments marinade method.

1. Introduction

Eggs are a source of animal protein that has a delicious flavor, is easily digestible, and highly nutritious. In addition, eggs are easy to obtain and relatively cheap. Eggs can be utilized as side dishes, ingredients for various foods, egg flour, medicine, and so on. Eggs consist of 13% protein, 12% fat, also vitamins and minerals. The highest value of eggs is found in the yolk. The yolk contains essential amino acids needed for body growth, as well as minerals, such as iron, phosphorus, a few calcium, and vitamin B complex. Egg yolk contains the majority of the protein and all of the fat (Ramli & Wahab, 2019). Despite their high nutritional value, eggs are perishable, either due to natural, chemical, or microbes attack through the pores of the eggshell. Therefore, preservation is essential to maintain the quality of eggs. The technique of salting eggs has been conducted since long ago with the aim to extend the shelf life of eggs while improve their flavor (Samudera et al., 2015).

Eggs are commonly consumed and traded in both fresh and processed forms. In fresh form, eggs have a short shelf life. Eggs can only last 10–14 days at room temperature and 14–30 days if stored in the refrigerator. Therefore, eggs need to be preserved, and the usual preservation of eggs is by salting. The business of making salted eggs has been growing nowadays. This is because salted eggs are indeed widely favored by society. Processed products made from duck eggs are often used as side dishes or just snacks. Generally, salted eggs made or marketed to date only have one flavor, namely salty, so it can cause consumer boredom. Salted eggs on the market are usually produced from duck eggs, but that does not mean eggs from other types of poultry cannot be salted, such as purebred chicken eggs. It's just that the making of salted eggs using chicken eggs must be conducted more carefully; this is because the thickness of the chicken eggs shell is thinner than that of duck eggs. There are two most commonly known methods of salting eggs, namely by soaking and wrapping (Indriastuti et al., 2013). Salted eggs are one of the egg preservation products to prevent eggs damage during storage. In addition to generating a distinctive salty flavor, the addition of table salt (NaCl) in the making of salted eggs is also beneficial owing to its bacteriostatic and bactericidal properties (Winarno, 2002).

New innovations to make salted eggs of various flavors can at least open up new promising business opportunities. Making salted eggs of various flavors is intended to add new variations to the existing salted egg products. The use of garlic as one of the salted egg flavor enhancers is possible due to its nature as a natural preservative and flavor enhancer. According to Faridah (2017), antioxidant and antimicrobial properties in garlic can function as a natural preservative. The use of garlic in making salted eggs is a layered preservation way, also an effort to diversify the flavor of salted eggs so that it can increase salted egg enthusiasts, also increase the business opportunities among salted egg traders.

Groups of housewives in Tanjung Kesuma village mostly only utilize duck or chicken eggs to be consumed in fresh form. Duck or chicken eggs can be processed into salted eggs so that they are more durable and can increase their selling value. Duck eggs are a good source of nutrition (Wibowo, 2011), with a protein content of 13.1%, also with higher calories and fat content than chicken eggs.

Salted eggs provide many benefits, ranging from forming and maintaining both the density and strength of bones and teeth. Besides being good for preventing osteoporosis, calcium contained in salt also plays a role in accelerating the blood clotting process. Calcium is also a hunger suppressant, making it a good alternative for those who want to diet in a healthy and natural way. In addition, calcium can help stabilize a person's blood pressure as it helps control the movement of the heart muscle and the likes. Based on this background, community services activity were carried out in Tanjung Kesuma Village, Purbolingo Subdistrict, East Lampung Regency by conducting training in salted egg making for a group of housewives in Tanjung Kesuma Village.

2. Methods

This community services activity was conducted on January 3, 2023 in Tanjung Kesuma Village, Purbolinggo Subdistrict, East Lampung Regency. The target participants of this program were 30 housewives who are members of the Family Welfare Program (PKK) of Tegal Yoso Village. This activity was carried out in several stages as follows:

Extension. This activity was implemented in the form of delivering material about the stages of making spicy salted eggs from duck and chicken eggs, which ended with a discussion. The expected output of this activity is that participants are able to understand how to make spicy salted eggs and are able to process duck and chicken eggs into spicy salted eggs so as to extend the shelf life of eggs and increase the selling value of these eggs.

Practice of making salted eggs. This activity was a follow-up of extension activity. Participants who previously attended extension were involved in this practice. The materials used include chicken eggs, duck eggs, coarse salt, garlic, red pepper, cayenne pepper, and lemongrass. The tools used include pots, jars, sandpaper, cutting boards, stoves, and plastic.

Stages of making salted eggs were conducted as follows: a) the eggs were cleaned gently; b) the salt was dissolved in hot water; then was strained and waited for cooling; c) the garlic was minced, and the cayenne pepper was sliced; d) the minced garlic, the sliced cayenne pepper, and the brine were put into the egg container; e) the eggs were covered with a 1 kg of plastic bag filled with water; f) the container was covered, then let aside for 10–15 days; g) the container was stored in a dark place; h) after all the processes were finished, the eggs were boiled for 30 minutes, then were lifted from the pot and leaked through.

2. Results and Discussion

This community services activity was implemented in Tanjung Kesuma Village, Purbolinggo Subdistrict, East Lampung, and was attended by 30 participants who were residents of the village. Extension activity (Figure 1) was carried out at a resident's house in Tanjung Kesuma Village, which was attended by 30 participants who were PKK housewives and the general public. The material of extension activities included 1) types of eggs, 2) various methods of preserving eggs, and 3) processing salted eggs. Extension participants were introduced to various types of eggs, such as native chicken eggs, purebred chicken eggs, duck eggs, as well as various kinds of egg preservation methods, one of which was salting eggs, and introduced to how to process salted eggs through soaking method using brine and condiments.



Figure 1. Extension on making salted eggs.

Food processing innovation is currently one of the methods used to add economic value to food ingredients and also increase the shelf life of a product. Making salted eggs is one form of food processing innovation. Salted eggs will become more durable in storage. In addition, salted eggs also exhibit a better flavor. Eggs salted using iodized salt have increased their iodine salt content so that they can be safely consumed as iodine source. The making of salted eggs by soaking method usually requires approximate duration of 10–14 days.

The most commonly recognized salting methods include soaking and wrapping (Indriastuti et al., 2013). The soaking method uses a saturated salt solution, while the wrapping method uses a mixture of salt, red brick powder, and scouring sand. Making salted eggs with the soaking method is easier and more practical. The advantage of making salted eggs with the soaking method is that the process is shorter, while the wrapping method is more complicated. As a chosen alternative to making salted eggs, this training applied the soaking method using brine with the addition of condiments.



Figure 2. Practice of making salted eggs.

The results of the questionnaire (both pre-test and post-test) reveal that there has been an increase in the participants' knowledge after extension compared to before extension; this can be seen from the increased questionnaire score. Pre-test was conducted to find out the extent of participants' knowledge in making salted eggs. A total of 78.57% of housewives stated they knew how to make salted eggs and had experience in making salted eggs, while 21.42% of them have not yet known how to make salted eggs in detail, only knowing the making method. After the pre-test results were revealed, the training of salted egg making was continued. The practice of making salted eggs (Figure 2) was conducted in the yard of a resident's house in Tanjung Kesuma Village, Purbolinggo District, East Lampung after the extension activity was finished. The practice of making salted eggs began with a direct explanation during the implementation. The process of making salted eggs is presented in Figure 3.

The training of salted egg making was closed by filling out a questionnaire or post-test containing questions to evaluate how the participants responded to the training conducted, how their level of knowledge in making salted eggs, and how they responded to the flavored salted egg processing innovation. All participants (100%) stated that the training was very interesting and wanted this kind of training to be conducted regularly because it can increase their knowledge in processing foodstuffs. The participants housewives were also interested in the flavored salted egg innovation, as there were several housewives who disliked salted eggs due to fishy smell of the eggs.

Salted egg is one of the egg preservation products with aim to minimize egg damage during storage. In addition to producing a distinctive salty taste in eggs, the addition of table salt (NaCl) is also beneficial, owing to its bacteriostatic and bactericidal properties. This is because sodium from salt can increase osmotic pressure that causes plasmolysis in microbial cells, reduces the solubility of oxygen needed by microbes, and inhibits the activity of proteolytic enzymes that play a role in the process of

protein decomposition (Winarno, 2002) The type of microbes that contaminate eggs are usually *Salmonella* bacteria, as well as *Escherichia coli* (*E. coli*) bacteria, which can grow all over the places and commonly emerge from poultry farms. These microbes can enter the egg when there is a crack in the eggshell, or there is no longer a thin layer protecting the pores of the eggshell (Yuniati, 2011).

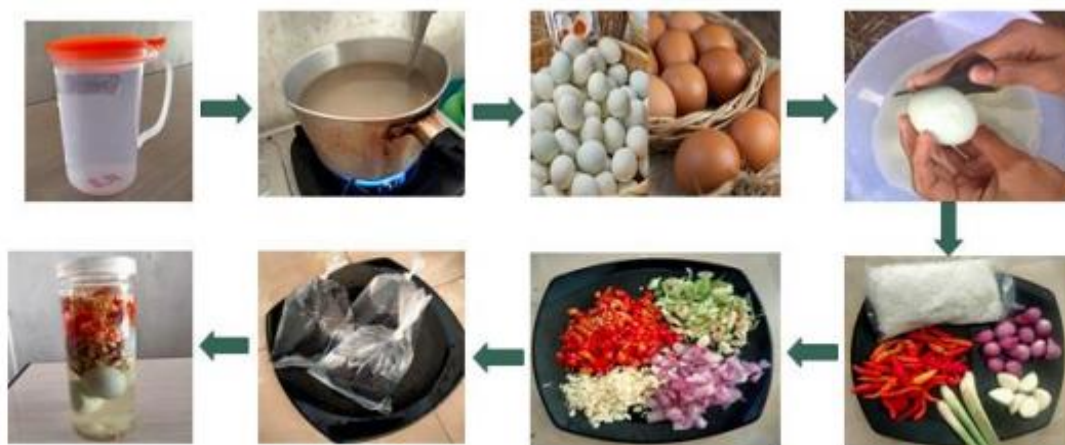


Figure 3. Salted eggs production steps.

When eggs are stored for a long duration in the room temperature, they are susceptible to microbial damage. Egg damage caused by bacteria occurs because bacteria enter the egg, starting when the egg is still inside of the parent's body, until it is outside of the parent's body. The alterations that can occur in eggs include weight loss, eggshell alteration, also mould and blood stains inside of the egg. The main causes of reduced egg freshness are the entry of microbes through the pores of the eggshell and the evaporation of water through the egg surface. To prevent these alterations, one method of processing eggs is by preserving them. Making salted eggs is one method of preserving eggs. Either the eggs are soaked in saturated salt solution, or wrapped with a mixture of salt, scouring sand, and red brick powder, the salt will enter the egg through the pores of the eggshell (Warsono, 2005).

Salt is the main ingredient in the eggs salting process, which has an important function as a preservative to prevent eggs spoilage, thus increasing their shelf life (Prihantari et al., 2010). One of the main advantages of salt is that it can inhibit the development of microbes so that eggs can be stored in longer duration. The purpose of the salting process is to prevent damage and spoilage of eggs and to generate distinctive flavor in eggs (Sirait, 1986). In addition, salting is also beneficial, including being easy to apply, low cost, practical, and can increase the level of consumers preference (Sarwono, 1994). Overall, this community services activity is expected to help participants to better understand how to process purebred chicken eggs to produce salted eggs by soaking method using brine with the addition of condiments.

4. Conclusions

Based on the results of this activity, it can be concluded that salted eggs are a form of preservation to prevent egg damage during storage. Making salted eggs aimed to preserve eggs, as well as to improve their flavor and selling value. The results obtained from this activity show that the making of salted eggs can be conducted by soaking the eggs using brine with the addition of condiments for 10–14 days to produce salted egg products that are ready for consumption.

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6. Authors' note

In writing this community services article, the authors declared that there were no elements of coercion or internal conflict. The authors also confirmed that the production of this article was free of plagiarism.

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