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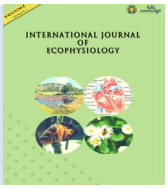

The Production of Salted-Egg With Low Levels of Sodium and Cholesterol

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ABSTRAK. The specific aim to be achieved is the production of salted eggs low-sodium and low cholesterol. Spices for making 30 salted duck eggs are coconut fiber ash 1 kg, green tea in two tablespoons, 15 gram of bay leaves, 15 gram of reed root, 15 gram of leaves of mahkota dewa, 15 gram guava leaves, and 1/2 kg palm sugar. The method in the experiment is a complete randomized method with five treatment groups namely; five treatments (days) and five replications. K = first day, P1 = fourth day, P2 = eighth day, P3 = twelfth day, P4 = sixteenth day. The main ingredients are duck eggs taken randomly and used as research samples. Each treatment consisted of five duck eggs. The parameters measured in each treatment (observation day) were organoleptic tests, cholesterol and sodium content from salted eggs. The results obtained were salted egg organoleptic test, cholesterol content in salted eggs, and better sodium content in salted eggs at the incubation until day 14.

Keyword: *salted-egg, sodium, cholesterol, organoleptic.*

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1 Introduction

Duck egg salts that circulate in the community have a fairly salty taste with a level of mixing salt to make salted duck eggs containing sodium reaches 529 mg per 100 grams.

Figure 1. Salted eggs contain higher levels of salinity due contain higher salts in the community

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Meanwhile, 100 grams of salted egg yolk contains 955 mg of cholesterol and a salted duck egg contains around 260 mg of cholesterol. The issue of community priority in the social aspect is indicated by the existence of people who lack expertise, especially in expertise in making salted eggs with low sodium and low cholesterol levels. So it does not interfere with the health of the people who eat them. The short-term solution to the problem is training to improve knowledge and expertise in making salted-eggs sodium salts and low cholesterol.

Making salted eggs with low sodium levels and low cholesterol can be done by 3-4 housewives. Solution: gather housewives who want to increase their knowledge and expertise in making salted eggs with low levels of sodium and cholesterol.

- making salted eggs is estimated to finish 3-4 days, but previously provided the necessary theories so that when the practice is carried out it can be carried out as expected.
- Solution: Housewives have been collected and given training in making salted eggs
- All materials and equipment will be provided by the training provider completely and clearly. Solution: equipment and materials for training will be carried out by the community service when the training is conducted.

Problems The housewives are having specific, concrete priorities and are truly in accordance with the needs of the partners because most of the people are middle to lower education and lack expertise, especially in making salted eggs. Solution: provide new knowledge and skills, namely how to make salted eggs low in sodium and cholesterol. Duck eggs are wrapped in coconut husk ash for 2 days. The use of ash from coconut fiber is agricultural waste for wrapping eggs during ripening, no need for salt addition, because in the ash contains more potassium than salt which is 25.67%. This process will also make salted eggs will eliminate the fishy smell of duck eggs that are not liked by some people (Widjaja, 2003). Duck eggs sold in the form of salted eggs can increase the economic value of eggs. Making low-sodium salted eggs has not been popular in the community, so counseling, demonstration and training for making low-sodium salted eggs is needed to improve the nutrition and economy of the communit in Kotamatsum IV Medan Area Medan.

Normally mixing this salt makes salted duck eggs containing sodium (sodium) up to 529 mg per 100 grams. Meanwhile, 100 grams of salted egg yolk contains 955 mg of cholesterol and a salted duck egg contains around 260 mg of cholesterol. Sebagi tujuan produk akhir dari pengabdian As the goal of the end product of this service is to get the condition under the

conditions above, both in sodium and in cholesterol (Murtidjo, 1988; Winarno, 1994; Astawan, 2004).

2 Materials and Methods

The use of ash from coconut husk, which is agricultural waste to wrap eggs during ripening, does not need to add salt, because the ash contains more potassium than salt, which is 25.67%. This is very good for a salt diet because it uses a little more salt in its manufacture and the potassium content of the ash that seeps into the egg causes the egg to treat ulcer disease. The process of making salted eggs will eliminate the fishy smell of duck eggs that are not liked by some people. Duck eggs sold in the form of salted eggs can increase the economic value of eggs. Making low-sodium salted eggs is not yet popular in the community, so counseling, socialization, demonstration and training on making low-sodium salted eggs is needed to improve the nutrition and economy of the community in Kotamatsum IV Medan Area - Medan.

One hundred good quality duck eggs are collected. Step 1: To get salted eggs with good quality, make sure we use good quality duck eggs. The characteristics of the yellow egg are reddish and do not smell fishy if it has become a salted egg. Step 2: How to know duck eggs of good quality and not fishy, usually the ones produced by ducks fed organic food and shrimp food so that the eggs are not fishy and yellow are reddish-colored eggs. Another case is if the duck is fed with fish and it can be ascertained that the salted egg produced will be fishy and not orange. Step 3: to determine whether duck eggs are still eligible for processing. Put the egg in a container filled with water. If the egg sinks, it means that the egg is still suitable for consumption and also make sure if the egg is not cracked. Step 4: clean the dirt from the egg then dry it with a cloth. Step 5: As much as enough ash comes from the coconut husk that is burned. Step 6: Red Brick Powder 1 kg from the destruction of red coal. Step 7: Seasoning Mixes namely; ash from coconut fiber 1 kg, green tea 2 spoons, 15 gram bay leaf, 15 gram of reed root, 15 gram of leaves mahkota, 15 gram of guava leaf, 1/2 kg palm sugar.

Methods: Boil all the above seasoning concoctions by adding 1½ liters of water. Boil until boiling then cool. Make sure the spice mixture is appropriate and appropriate. Because it will affect the reduction of cholesterol in salted eggs that will be produced. Equipment needed: Buckets / Wooden Boxes or Tubs to accommodate (Recommended wooden boxes). How to make it: Clean duck eggs by using a sponge or coconut fiber slowly. This cleaning is done with the aim that the dirt that sticks to duck eggs is really clean because it can cause failure in salting. Drain duck eggs. Mix the red brick powder with the cold seasoning mixture. Mix enough ash and stir until smooth. Apply the mixture to the duck egg to form a certain thickness of 2 mm. The final step, put the duck egg in the container / place that has been prepared. Arrange the egg in a standing

position so it doesn't break ea sily. Let stand for 15 days. After 15 days, wash again. Cook the salted egg by boiling it in boiling water for 1 hour. Can also be steamed with the same duration.

3. Result and Discussion

Based on the method that has been done on community service to housewives about making low sodium salted eggs and cholesterol can be explained as shown below.

The content of sodium in salted eggs

Making salted duck eggs is done the same as making eggs in general. The production of salted eggs with lower sodium (Na +) levels is carried out by the administration of low odium and replacing salted egg lubricants from batubata mud into coconut husk ash with sufficient water added. Coconut husk ash contains potassium (K +) which can replace sodium but with very little salt or acidity. So giving sodium is only a quarter of the amount used to marinate duck eggs (Figure 1).

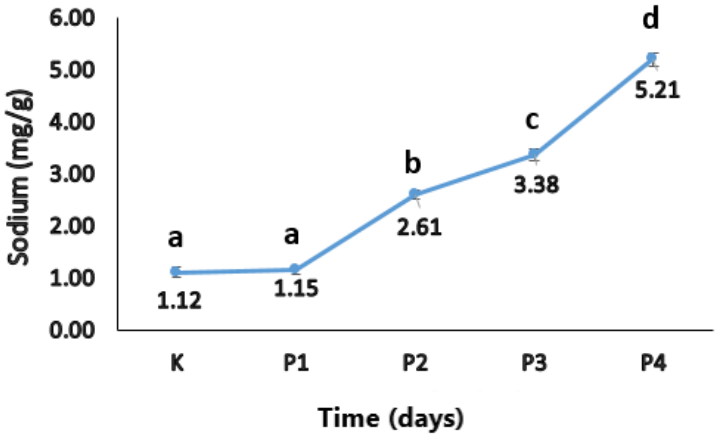

Figure 1. Salted egg sodium content based on treatment (days). K = first day, P1 = fourth day, P2 = eighth day, P3 = twelfth day, P4 = sixteenth day. a,bp<0.05.

The yield of nata

Cholesterol content in salted eggs

Making low-cholesterol salted eggs is often another hope for consumers.

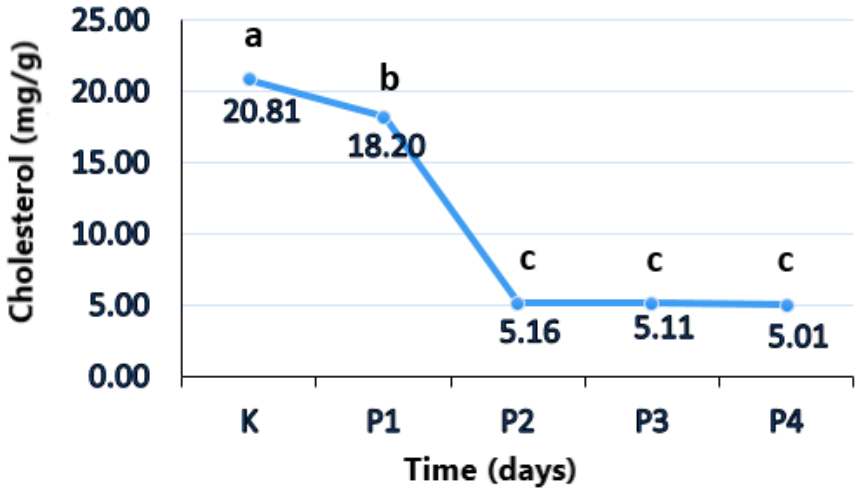

Figure 2. Cholesterol content of salted eggs based on treatment (days). K = first day, P1 = fourth day, P2 = eighth day, P3 = twelfth day, P4 = sixteenth day. [a,b]$p<0.05$.

Salted duck eggs that are too salty are feared to boost blood pressure. In addition, salted eggs contain a high enough cholesterol level and are endeavored to maintain the cholesterol level of the salted egg. The results of making salted duck eggs using special spices and mixed with coconut husk ash significantly decreased cholesterol levels in incubation on day four (P1), eight (P2), twelve (P3) and sixteenth (P4) (Figure 2).

Salted egg with organoleptic test

Salted egg organoleptic test results can be seen in Tables 4, 5, 6, 7, 8, 9, 10, and 11, respectively depicting the texture, taste, color, and smell of white salted eggs, as well as texture, yellow, taste, color and the smell of yellow salted eggs.

Table 1. Description of teture of whiteEgg in salted egg

		Groups					
		K	P1	P2	P3	P4	Amount
texture of egg white (%)	Hard	100.0	40.0				28.0
	Soft		60.0				12.0
	chewy			100.0	100.0	100.0	60.0
Notation		a	a	b	b	b	

Description: K = incubation 1 day, P1 = incubation 4 days, P2 = incubation 8 days, P3 = incubation 12 days and P4 = incubation 16 days; different letters notation is significantly different between treatment groups ($p<0.05$).

Table 2. Overview of the Taste of White Salted Eggs

		Groups					
		K	P1	P2	P3	P4	Amount
Taste of white egg (%)	Ordinary	100.0	80.0				36.0
	Salty		20.0	100.0	40.0		32.0
	Very salty				60.0	100.0	32.0
Notation		a	a	b	b	c	

K = incubation 1 day, P1 = incubation 4 days, P2 = incubation 8 days, P3 = incubation 12 days and P4 = incubation 16 days; different letters notation is significantly different between treatment groups ($p<0.05$).

Table 3. Description of color in white salted egg

		Groups					
		K	P1	P2	P3	P4	Amount
Color of white egg (%)	White	100.0	100.0	100.0	100.0	100.0	100.0
Notation		a	a	a	a	a	

K = incubation 1 day, P1 = incubation 4 days, P2 = incubation 8 days, P3 = incubation 12 days and P4 = incubation 16 days; different letters notation is significantly different between treatment groups ($p<0.05$).

Table 4. Description of smell of white Egg in salted egg

		Groups					Amount
		K	P1	P2	P3	P4	
Smell of white egg (%)	Fishy	100.0	100.0				40.0
	Not fishy			100.0	100.0	100.0	60.0
Notation		a	a	b	b	b	

K = incubation 1 day, P1 = incubation 4 days, P2 = incubation 8 days, P3 = incubation 12 days and P4 = incubation 16 days; different letters notation is significantly different between treatment groups ($p<0.05$).

Table 5. Description of teture of yellow Egg in salted egg

		Groups					
		K	P1	P2	P3	P4	Amount
Texture of yellow egg (%)	runny	100.0	100.0				40.0
	Somewhat runny			100.0	100.0	100.0	60.0
Notation		a	a	b	b	b	

K = incubation 1 day, P1 = incubation 4 days, P2 = incubation 8 days, P3 = incubation 12 days and P4 = incubation 16 days; different letters notation is significantly different between treatment groups ($p<0.05$).

Table 6. Overview of the Taste of yellow Salted Eggs

		Groups					
		K	P1	P2	P3	P4	Amout
Taste of yellow egg (%)	Ordinary	100.0	100.0				40.0
	Salty			100.0	40.0		28.0
	Very salty				60.0	100.0	32.0
Notation		a	a	b	bc	c	

K = incubation 1 day, P1 = incubation 4 days, P2 = incubation 8 days, P3 = incubation 12 days and P4 = incubation 16 days; different letters notation is significantly different between treatment groups ($p<0.05$).

Table 7. Overview of the color of White Salted Eggs

		Groups					
		K	P1	P2	P3	P4	Amout
Color of yellow egg(%)	yellow	100.0	100.0				40.0
	the middle of the yellow and the edges are maroon			100.0	20.0		24.0
	maroon				80.0	100.0	36.0
Notation		a	a	b	c	c	

K = incubation 1 day, P1 = incubation 4 days, P2 = incubation 8 days, P3 = incubation 12 days and P4 = incubation 16 days; different letters notation is significantly different between treatment groups ($p<0.05$).

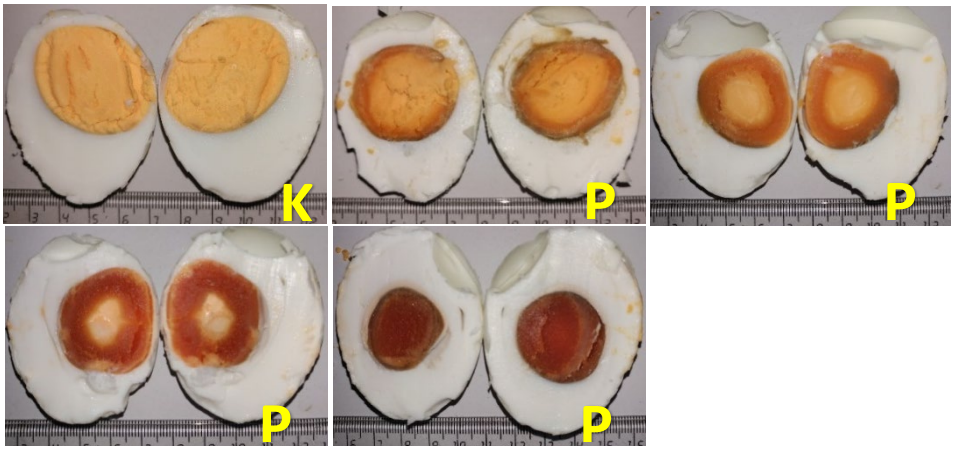

Figure 1. Salted egg yolk based on treatment (days). KE = first day, P1 = fourth day, P2 = eighth day, P3 = twelfth day, P4 = sixteenth day.

Table 8. Overview of the smell of yellowSalted Eggs

		kelompok					
		K	P1	P2	P3	P4	Total
Smell of yellow egg (%)	fishy	100.0		100.0	100.0	100.0	80.0
	Not fishy		100.0				20.0
Notation		a	b	a	a	a	

K = incubation 1 day, P1 = incubation 4 days, P2 = incubation 8 days, P3 = incubation 12 days and P4 = incubation 16 days; different letters notation is significantly different between treatment groups ($p<0.05$).

Evidence shows that the use of simulations in education (formal / informal) significantly increases knowledge, skills and self-confidence. The framework for improving the quality of the five components of direct practice is the best for applications in educational or research simulations. Future research / education uses high-quality research designs that focus on the practice of question and answer, the application of interprofessional education, outcome measure validation, student satisfaction, and long-term information retention will contribute to the growth of literature that supports best practice for simulation training in various fields of science [1].

Increased saline egg sodium levels in the production of salted eggs along with the increasing incubation period of duck eggs after being coated with coconut husk ash. The highest salinity at the incubation period of 16 days while the lowest during one day of incubation. This is due to the presence of the pores of the egg shell which can be gradually entered by KCl and a little NaCl. There are reports that K2O contained in coconut husk dust is 10.25%. Dust or coconut fiber ash contains high potassium which increases the potassium content of other substrates [2] [3] [4].

A longer incubation period (16 days) can cause absorption of more salt into the egg white and yellow egg. So that excessive saltiness will be felt and the color darker without a butter-like layer in the middle of the yellow salted egg (Figure 3). There is information that salted eggs are produced by marinating eggs in saturated salt solution (dyeing method) or by coating eggs with soil paste mixed with salt (coating method) for 20–45 days [5].

The description of the texture, taste, color, and smell of white salted eggs, and the texture, yellow, taste, color and smell of yellow salted eggs are generally significantly different when compared between treatments. The organoleptic test results illustrate that the respondent's eight-day incubation period was the best and recommended. These results can be influenced by a combination of herbs or spices combined with coconut husk ash. In the egg quuning there is a clear picture and can be associated with the level of salinity of the egg. Figure 3 shows the yellow color of the egg which has been directed at reddish brown at the incubation period of 16 while the incubation of 8 days is only the yellow edge of the egg which is reddish brown while the middle part is yellow.

Information on the research, that the addition of spices did not significantly affect the egg yolk index, but increased the quality of salted duck eggs. Compared with salted egg duck without spices, the addition of Chinese aniseed and biduri ash removes the fishy smell of salted duck eggs and enhances the quality of the aroma. However, egg white and yellow eggs are slightly more brownish to enhance the taste of salted duck eggs. If the color is too dark, the appearance of salted duck eggs will be bad. Therefore, the amount of spices must be controlled, with the optimal amount in 0.05% -10.10% [6]. Scanning electron microscopy (SEM) revealed that the salted egg

yolk consisted of spherical granules and embedded flat porosity. It was concluded that the salt treatment induces yellow egg freezing, accompanied by higher oil exudation and the development of a sandy texture. Different salt concentrations indicate yellow salted egg differences [7].

4. Conclusion

Based on the results and discussion of community service about housewives about making low sodium salted eggs and cholesterol can be explained as shown below.

- Knowledge, abilities and skills of housewives about making low-sodium salted eggs and cholesterol increased to 100%.
- In the salted egg organoleptic test, the cholesterol content in the salted egg, and the sodium content in the salted egg were better at making which was incubated until day 14.

Acknowledgement

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