

Acceptability Innovation of Low Poultry Egg Abon (EBELABON) with Addition Roasted Shallots for Overweight Z Generation

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Abstract

Introduction: Being overweight due to lifestyle and dietary habits may lead to non-communicable diseases such as heart disease, stroke, and diabetes in the future. Generation Z is the generation born in 1995-2010. Use of shallots has antiobesity effects because it can reduce body fat and body weight

Methods: The poultry eggs used in the acceptability of shredded are chicken eggs and this study was conducted by 25 moderately trained panelists with hedonic quality test. Data processing using Kruskal Wallis test to determine the real difference of ebelabon (egg shredded level delicious) with the addition of roasted onions 0%, 5%, 10% and 15% of the total poultry egg shredded served, shredded Data processing and analysis using SPSS software and presented in the form of tables, graphs, and narrative text.

Results: The results showed that there was no significant difference in the acceptability of shredded poultry eggs. Based on the results of statistical analysis of four parameters on moderately trained panelists that the most preferred taste and overall were in formula 4, namely the addition of roasted onions 15% of the total shredded poultry eggs.

Conclusion: As for the selected formula, formula 4 will be further tested by testing the content of macronutrients such as calories (energy), protein, fat and carbohydrates and carried out interventions for overweight students or generation Z who are currently studying.

Keywords: Acceptability¹, Poultry Egg Shredded², Overweight³

Introduction

One of the health-related problems in the world is obesity, which is often considered an excessive and abnormal condition of fat accumulation in adipose tissue. One indicator to determine the problem of obesity by knowing the nutritional status of individuals. Nutritional status is a basic reference for whether an individual's body experiences nutritional problems or not by measuring BMI (Supariasa 2016). Overnutrition is an important aspect as the beginning of degenerative diseases such as diabetes, coronary heart disease and stroke. Factors that influence overnutrition are unhealthy lifestyles and eating habits that are not balanced with physical activity, causing fat deposition in adipose tissue (Al Hammadi and Reilly 2020).

If left unchecked, it will risk causing obesity due to bad food habits and excessive nutritional intake which is not balanced by a decrease in energy expenditure in individual daily activities Bautista (2019). According to Harahap et al, (2018) states that obesity can be influenced by environmental factors so that it is at risk of causing endocrine and genetic disorders such as diet, work patterns, and even persistent stress. This condition is associated with an increased risk of non-communicable diseases such as hypertension, dyslipidemia, diabetes and even cardiovascular disease. (Antonio, Lorenzo and A, 2021). The high level of

overweight according to the World Health Organization (WHO) in 2016, namely in the American region, around 39.8% of adults aged 40-59 years and 18.5% of young adults aged 20-39 years are obese, while according to (Harahap et al. 2018) overweight in Indonesia reached 13.5% aged 18 years and over, while 28.7% were obese (BMI \geq 25), and according to the 2015-1019 *Rapat Pembangunan Jangka Menengah Nasional (RPJMN)* indicators there were 15.4% at risk of obesity (BMI \geq 27).

Balanced Nutrition intake is an important part of gaining ideal body weight. A balanced diet is part of the daily diet and contains nutrients in types and amounts that are adjusted to the body's nutritional needs. The principle of balanced nutritional intake pays attention to safety, food diversity, the importance of daily activity patterns and exercise. Even in Agista's research (2022), the benefits of understanding the importance of balanced nutrition show a relationship between body image ($p=0.000$) and daily activities ($p=0.004$) in adolescent girls, so that these girls have a positive perception of body image. In addition, nutritional intake is obtained from macronutrients such as carbohydrates, fat protein and micronutrients in the form of vitamins and minerals (Diniyyah and Nindya 2017)

Generation Z is the generation born in 1995-2010. The health condition of Generation Z is a transitional generation from adolescence to adulthood and affects body image and mental health (Rajashri, 2023). Students aged 18-22 years enter early adulthood whose average daily consumption needs reach 2100 (two thousand hundred) kcal per individual. The average daily protein intake for Indonesians is 57 (fifty seven) grams per individual (Permenkes RI, 2019).

The recommended consumption of individual meals into 3 parts a day, namely breakfast with a need of about 20%, lunch and dinner with a need of 30%, and the rest is a snack that can be consumed 2 times a day in the morning and evening with each 10% of the daily calorie needs of each individual body. In addition, the importance of consuming vegetables and fruits is important because of the content of vitamins and minerals in physical activity and affects individual needs the World Food and Agriculture Organization (FAO) recommends consuming fruits and vegetables regularly as much as 75 kg / per capita/year and 3-5 servings a day or as much as 500 grams along with the food pyramid that recommends serving vegetables 3-5 times a day and fruit 2-4 times in adults.

The daily need for animal protein, one of which is eggs, which is easy to digest, tastes delicious and is easy to obtain, makes eggs, which are rich in high nutrition, so popular with the public. In addition, eggs are cheap and easily available food ingredients for Indonesians, especially for generation Z. In research conducted by Abdu (2021) states that every 100 grams of eggs contains 150 kcal and more than 85% is protein with details of egg yolks containing fat, calcium, phosphorus, iron, zinc, and vitamins B6, B12, A and folic acid, thiamine while egg whites contain half the nutrients, namely protein and riboflavin. Based on the weight of chicken eggs the yolk has a percentage of 30%-32%, 58%-60%, albumin around and 10%-12% contains eggshells. Egg white or albumin substance has the highest protein, but in addition to having enormous benefits for the human body, albumin has allergenic properties in humans (Dona and Suphioglu, 2020). in the process of cooking shredded eggs, it is necessary to add herbs and spices such as shallots. Roasted shallots contain low fat content because they do not use oil, have antiobesity effects because they contain high quercetin compounds, especially in shallot skin, which can reduce fat levels and adipokine production in mice given a high-fat diet, (Lee et al. 2016)

Egg preparations that are diverse and have a long-lasting aspect for consumption are shredded. Shredded is a dry food with a distinctive aroma that is usually made from boiled meat cut and sliced small to facilitate the cooking process, seasoned, fried and finally pressed to remove the remaining oil so that it has a long shelf life Bulkaini (2020). The innovation of shredded eggs has previously been researched and made using preservation technology by Hijriah, and I Putu Artawan, 2020 which utilizes natural resources from the leading sectors in Sidrap Regency-South Sulawesi but in the manufacturing process refers to the Indonesian National Standard which usually uses excessive oil for frying without paying attention to the fat in it. Addition, in a study conducted by (Emrani et al. (2023) mentioned that whole egg consumption can increase Body Mass Index and body weight for more than 12 weeks ($P < 0.05$) for respondents with unhealthy conditions and egg consumption can significantly reduce Body Mass Index ($P < 0.05$) which is accompanied by calorie restriction, receiving food, and consumption of supplementation even in his research from 1117 respondents did not show a significant effect of egg consumption on body weight [weighted mean difference (WMD) = 0.234, 95% CI = - 0.207-0.675, $P = 0.299$] (Emrani et al. 2023). Moreover in a study conducted by (Lee et al. 2016) mentioned that cholesterol in eggs can improve nutritional health in children and adolescents.

Modification of shredded innovation to meet daily protein intake according to the eating habits of generation Z can be the main approach in supporting the diet process to lose weight (overweight) balanced with balanced nutrition and eating habits behavior. Therefore, further research is needed, especially the acceptability of shredded eggs (EBELABON) so that generation Z is liked as a support for low-fat protein intake for overweight.

Methods

This research is experimental research, the type of quantitative research according to Sugiyono, 2017 states that this research is used to find and determine the effect of the treatment used on other things with the conditions. Then this type of research uses quantitative research. Quantitative research is a research method that can be used to examine certain populations and samples through data collection supported by research instruments and quantitative data analysis that aims to test existing hypotheses. Data processing using the Kruskal Wallis Test, The stages of making shredded EBELABON are as follows.

- a. Prepare boiled chicken eggs then grate with grated cheese
- b. Blend the spices consisting of coriander, shallots, garlic and enough brown sugar to produce a browning reaction on the shredded meat.
- c. Saute the ground spices with olive oil and add bay leaves, lemongrass stalks, salt, and mushroom broth, liquid coconut milk

- d. Roasted to dry so that the shredded can be preserved and produce shredded without preservatives
- e. Chicken egg shredded packed into 4 formulas by adding roasted shallots to reduce the use of oil and excess fat. the use of roasted shallots in the formula is an effort to lose weight in generation Z who are overweight. The content of active substances such as quercetin is able to reduce body weight, body fat and adipokine production on a high-fat diet, as for the formula as follows.

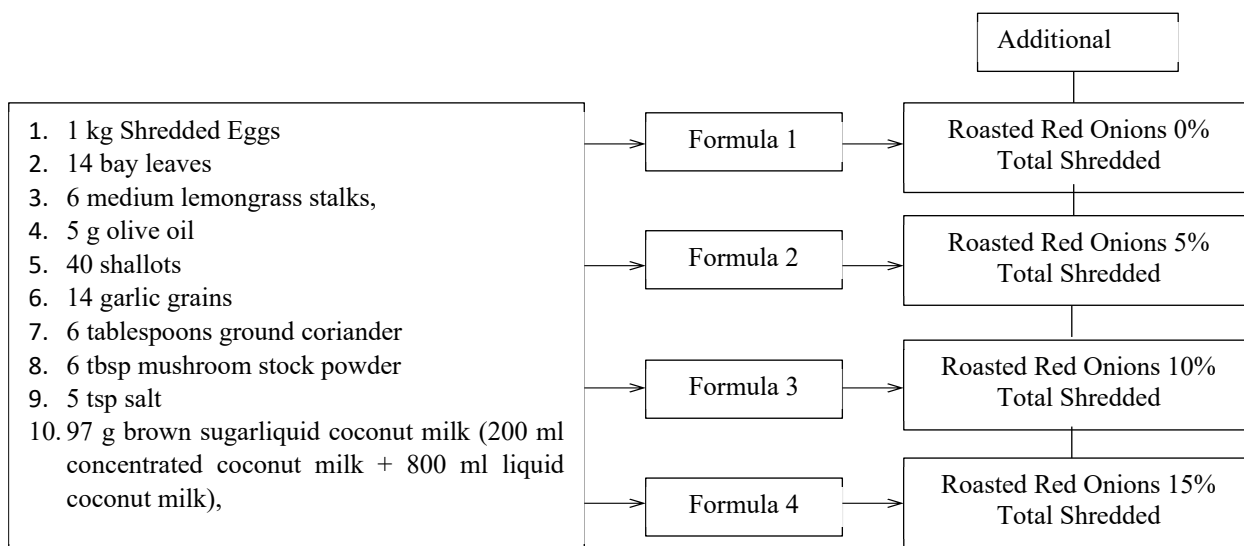


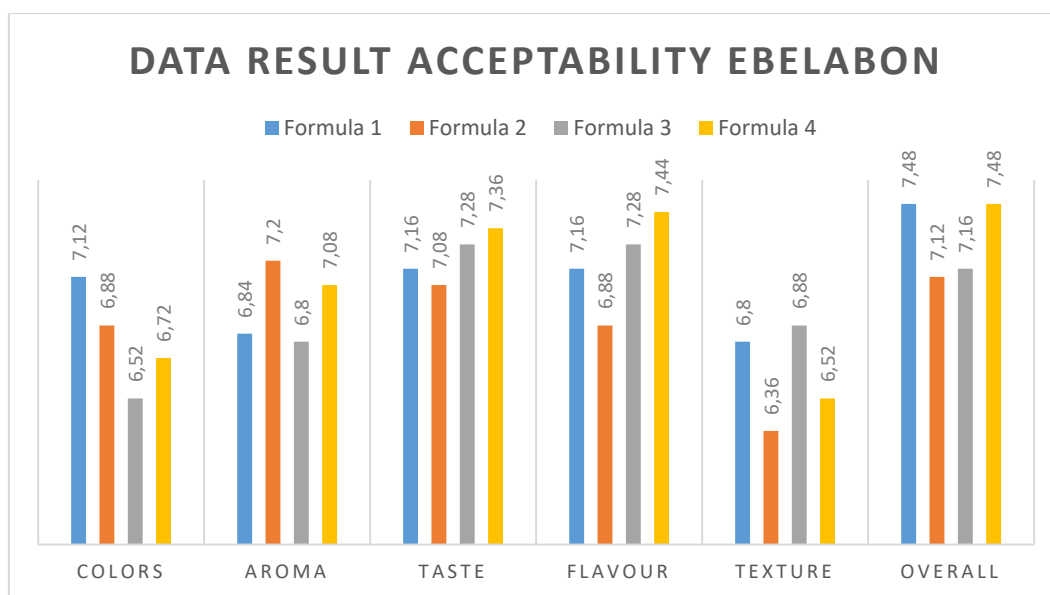
Table. How to make ebelabon ingredients Formula

Results

The results of the research that has been done that there is no significant difference between the effect of shredded ebelabon with roasted onion substitution 0%, 5%, 10% and 15%. Using ordinal data scale on ebelabon acceptability, for data collection techniques and tools using Hedonic Scale Test

Parameter	Mean Value of Hedonic Test Sample			
	F1	F2	F3	F4
Color	7.12 ± 1.236 ^a	6.88 ± 1.269 ^a	6.52 ± 1.503 ^a	6.72 ± 1.671 ^a
Aroma	6.84 ± 1.344 ^a	7.20 ± 1.258 ^a	6.80 ± 1.080 ^a	7.08 ± 1.320 ^a
Taste	7.16 ± 0.943 ^a	7.08 ± 1.256 ^a	7.28 ± 0.891 ^a	7.36 ± 1.186 ^a
Flavour	7.16 ± 1.068 ^a	6.88 ± 1.236 ^a	7.28 ± 1.370 ^a	7.44 ± 1.261 ^a
Texture	6.80 ± 1.080 ^a	6.36 ± 1.524 ^a	6.88 ± 1.201 ^a	6.52 ± 1.418 ^a
Overall	7.48 ± 0.653 ^a	7.12 ± 0.833 ^a	7.16 ± 1.028 ^a	7.48 ± 1.122 ^a

Description: 1 = Extremely Dislike 2 = Extremely Dislike 3 = Dislike 4 = Somewhat Dislike 5 = Neutral 6 = Somewhat Like 7 = Like 8 = Extremely Like 9 = Extremely Like, a,b = similar letter notation means there is no significant difference in the Mann Whitney test letter, has a value of 5%.



Based on research using moderately trained panelists, there is no significant difference (>0.05) with the color, aroma, taste, texture and overall of formula 1 (5% roasted onions) and formula 2 (10% roasted onions), formula 3 using the addition of 10% roasted onions from the total shredded served, and formula 4 using the addition of 15% roasted onions from the total shredded served. In addition, the above explanation regarding the overall preferred result is formula 4 using a dose of 15% grilled onions from the total EBELABON served.



Primer Data. Ebelabon with Addition of roasted onions

In addition, for the most preferred color with an average, there is formula 1, which does not use the addition of roasted onions or 0%, while in terms of aroma, the most preferred is formula 2 with the addition of 5% roasted onions, for the most preferred taste from the average results of somewhat trained panelists, namely shredded poultry eggs using the addition of 15% roasted onions as well as flavors, while for the most preferred texture, formula 3 with the addition of 10% roasted onions. Because the roasted shallots in addition to processing do not use oil or fat on the other hand because the characteristics of shallots have a stimulating aroma when smelled during the cutting process for food cooking as a flavoring spice due to the enzyme allinase and contains sulfur-like properties.

Onion content such as flavonols, allisin, quercetin, and keursetin glycosides which are useful as antibacterial, anticoagulant, anticancer, some studies have found to have anticancer properties due to the enzyme activity in it Afa, (2016) Research conducted (Skerget, 2019) states that consuming around 150 to 350 grams of shallots consistently can be quite useful as a protector from cancer cells, in addition to the content of shallots such as saponins, flavonoids, to essential oils so that they can support health for individuals and prevent infectious diseases because they inhibit the growth of bacteria and essential oils that can kill bacteria in the mouth of individuals because the chemical structure contains sulfide compounds (Kuswardhani, 2016). In addition, it has pharmacological properties due to alliin and allisin compounds which are useful as antiseptics and are able to control bacteria so that they do not develop.

Conclusion

Based on the results of this study, it can be concluded that all formulas of shredded poultry chicken eggs (EBELABON) can be accepted by and liked by panelists as a whole is formula 4 as well as the taste. As for the selected formula that will be further tested with the macronutrient content test or proximate test is formula 4 by considering the results of the moderately trained panelists, so

it is hoped that there will be further research based on EBELABON. In addition, the selected formula 4 will be carried out further research related to interventions for generation Z who are overweight or in college students.

Discussion

Shallots affect taste and aroma because the glutamic acid content serves as a natural flavor enhancer in cooking, especially in shredded eggs for panelists. Panelists' acceptance of shredded onion eggs used was 15% of the total shredded eggs served, which was 15 g in 100 g shredded eggs so that the ideal proportion served was 115 g which the panelists liked overall.

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