

PAPER NAME

2022 Instan Oyster Mushroom Instant Porridge for the Elderly.pdf

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WORD COUNT

7410 Words

CHARACTER COUNT

39044 Characters

PAGE COUNT

17 Pages

FILE SIZE

1.1MB

SUBMISSION DATE

Feb 8, 2023 3:15 PM GMT+8

REPORT DATE

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Instant Oyster Mushroom Congee

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ABSTRACT

This research is an experimental study that aims to determine: (1) The process of making instant oyster mushroom congee; (2) Panelists acceptance of the organoleptic of instant oyster mushroom congee, which includes color, aroma, texture, taste, and overall (overall assessment); (3) Potassium Nutritional Value of instant oyster mushroom congee. There were 38 panelists, consisting of 3 trained panelists, 25 semi-trained panelists, and 10 untrained panelists. The data collection techniques used are questionnaires and documentation. The data analysis technique used is descriptive analysis and ANOVA. The research was conducted at the Kitchen Laboratory Politeknik Pariwisata Makassar and the Makassar Health Laboratory Center. The results showed instant oyster mushroom congee products started from preparation, weighing, cutting, grinding, drying, storage and packaging. The panelists acceptance of the instant oyster mushroom congee with the F1 formulation with a yield of 1.5 grams of dry oyster mushrooms is equivalent to 15 grams of fresh oyster mushrooms. In terms of color, aroma, texture, and taste assessment, it is better than other formulations with a rating of 4.18, aroma, texture, and taste of 4.82, and overall, 5.42. The change in the nutritional value of potassium in instant oyster mushroom congee was 225.75 mcg, and the nutritional value of iron was 14.72 mcg.

KEYWORDS: *Congee; dried oyster mushroom; instant congee*

INTRODUCTION

Food is a physiological need and is the primary need for every human, potentially the most. It is for all the fulfillment of the above needs because it is a requirement for human survival, growth, and development. Humans will ignore or suppress all other conditions until physiological needs are satisfied. As we age, our food needs will also increase.

Following the principle of balanced nutrition, a diet based on the 'Nutrition Guidelines' to their respective conditions, each age group, health status, and physical activity require different 'Nutrition Guidelines' [1].

There are several classifications of age categories, including adolescents, adults, and the elderly. The elderly (elderly have reached sixty years or more). It is an Indonesian regulation in Law number 13 of 1998. Elderly is a natural process that occurs continuously in humans. When aging, a person will experience several changes that will eventually affect the whole body's state of function and ability [2].

Physical conditions for individuals who are elderly are different from adults. The decline in physical condition often occurs in the elderly.

It decreased organ function. One of the problems that often occurs is a disturbed digestive system, affecting psychological, physiological, and socio-economic conditions. All age classifications, including the elderly, should avoid eating unhygienic processed foods. Fresh and uncured food is very recommended. Also, avoid consuming foods that are too much seasoned (either spicy, salty, or sour), considering the digestion of the elderly is also more sensitive.

Healthy food is a need in a variety of foods. Diverse foods consist of at least four food sources: staple foods, side dishes, vegetables, and fruit. The more diverse and varied types of food consumed, the better. Vegetables and fruit are very good for consumption, and it recommended five servings per day [2]. The recommended composition of vegetables and fruit per day is 220 grams per person. This figure is adjusted for daily consumption and varies by country [3]. It Program was also launched at The National Cancer Institute of the United States and the Produce for

Better Health Foundation under the 5th-day program to educate the elderly that consuming fruits and vegetables can meet their fiber and mineral needs [4].

The need for food in the elderly is not as much as for ordinary people. The eating pattern of the elderly does not follow the diet in general, but what needs to be considered is that the texture of food that enters the body must be soft, considering that the arrangement of teeth in the elderly is no longer perfect. The food often intended for the elderly is congee; congee is regarded as the right food for consumption because its smooth texture and preparing process does not take long.

Soft food is also called puree food [5]. Puree food is highly recommended for the elderly who have problems chewing and swallowing food to pass through the digestive system. Puree food that is usually served to the elderly is congee. According to (Indonesian Dictionary), congee is a soft and semi-thick food made from boiled rice, beans, Etc. The congee is a general term to refer to a mixture of solids and liquids, with a composition of more fluid than solids and a state of dispersed solids.

Congee is considered the right food for consumption because of its soft texture; preparing it does not require long. However, the nutritional composition of congee has not been able to meet the dietary needs needed.

The need for variations in the use of congee-making materials consumed for the elderly adds taste, especially the nutritional value needed, so it is necessary to develop congee products. One food ingredient that has nutritional value and can create congee is an oyster mushroom. Oyster mushroom is one type of mushroom that is very often found and easy to get. Mushrooms are foods with good nutritional value, several species of mushrooms are useable as medicine or supplements, and some have both of these properties [6].

Since ancient times, mushrooms have been used as a particular food, where the Roma believed mushrooms were the food of the gods by calling it 'Food of the God,' the Chinese thought mushrooms to be a health food and called it 'Elixir of Life,' the Greeks consumed mushrooms before competing on the battlefield. The Mexican Indians put mushrooms in magic rituals and called them 'Hallucinogen Food' [6]. Oyster mushrooms belong to the Basidiomycota family and have the Latin name *Pleurotus Ostreatus*. The oyster mushroom is named because of the shape of the umbrella, and the smell is similar to oysters. Oyster mushrooms grow in the tropics on tree trunks that are still alive. Frequently, oyster mushrooms are useable in various cooking preparations around the world.

Oyster mushrooms are foodstuffs that contain high potassium; this can be seen in the Indonesian Food Composition Table 2017, where the potassium content in oyster mushrooms reaches 227mg/100gr [7] compared to rice, only 38gr/100gr.

In the Harvard Public Health article 'The Importance of Potassium,' potassium is one type of electrolyte needed by our bodies. The function of potassium can stretch the tension in the blood vessels to lower blood pressure or what we know with hypertension. In addition, foods containing potassium can break down the excess salt content of these foods in the body by removing it through urine. High blood pressure or hypertension is a significant risk factor for stroke and complications from other diseases. This condition is very vulnerable to being suffered by the elderly caused by natural elements, namely when get older, blood pressure increases.

So important is the role of potassium in the body, especially for the elderly, so it is necessary to develop food products, namely instant oyster mushrooms congee. Research objectives are as follows; (1) To find out how the stages of making instant oyster mushrooms congee; (2) To determine the level of preference for instant oyster mushroom congee.

METHODS

The type of research used is development research. In doing so, the researcher manipulates a stimulant treatment or experimental conditions, then observes the effect caused by the therapy or manipulation, Yatim Riyanto in [8]. The development referred to in this study is the development of congee with oyster mushrooms.

RESULTS

Stages of Making Instant Oyster Mushroom Congee

Based on the research, the production process may be explained through different stages, starting with preparing materials and types of equipment - utensils and following the execution until storage stages. The scheme of the research stages can be seen in Figure 1. Below

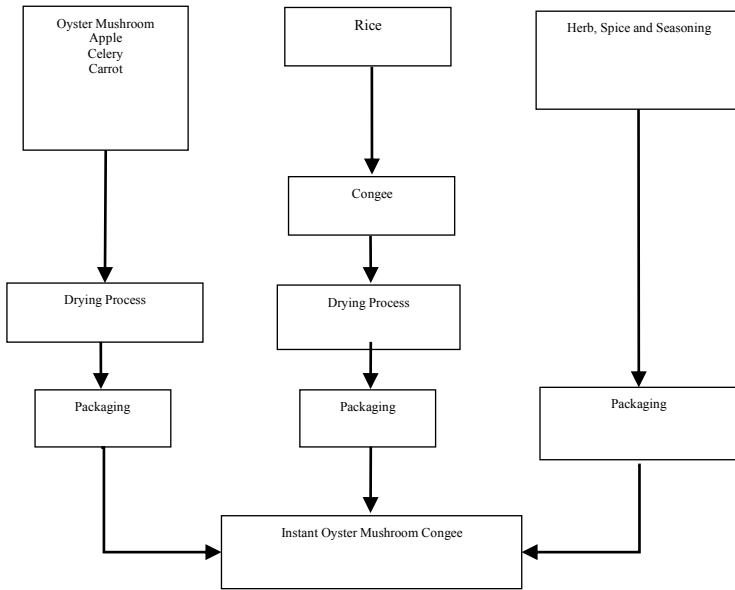


Figure 1. Research Scheme

Rice

Rice is the main ingredient in making congee. Make congee using clean rice from lice, so the absorption is still good. In this study, congee was made from 1 kg of rice. The process begins with soaking the rice with 1 kg of water at room temperature for 10 minutes so that the water content of the rice increases to 30%. Then proceed with boiling with 1 kg of water for 8-10 minutes so that the water content becomes 65-70%.

The cooling process is carried out for 1-2 minutes after the rice absorbs all the water during the boiling process. Indicator water absorption in the rice is indicated by the increase in the weight of the rice to 2.65 kg.

Instant Congee

Making instant rice is done by drying the cooled rice using a rotary oven. Using a rotary range maximizes the spread of temperature in the rice to dry evenly. The temperature used to dry the rice is 140°C, about 70 minutes. Dry indicator of the rice will be indicated by weight loss of rice to 368 g, the yield of 13%, or the shrinkage of 87%. The process continues by grinding the dried rice using a chopper.

The final stage in making this instant congee is the packaging. The congee is packed using a container made of aluminum foil and closed using a packaging machine.

Oyster mushroom

Oyster mushroom is the main subject ingredient for this research. The oyster mushrooms used are fresh condition. The fresh condition is a character by the aroma of mushrooms that do not have a bad smell, the color of the mushrooms is white, the moisture average in the mushrooms, not slimy, with the skin not wrinkled.

The process is continued by weighing the ingredients. Oyster mushrooms were considered using a digital scale. Oyster mushrooms needed as much as 1 kg. The following procedure is washing the oyster mushrooms using the blanching technique. Oyster mushrooms are blanch at a temperature of 100°C for 5 seconds, and then the oyster mushrooms will be cooled and drained in a basket container.

The drying process is carried out under the sun (sun drying method). The temperature used to dry ranges from 30°C-35°C for 10-12 hours. Dry indicators on oyster mushrooms will be marked by a decrease in the weight of oyster mushrooms to 100 grams, a yield of 10%, or shrinkage of 90%.

The final stage in making this instant oyster mushroom is the packaging. Oyster mushrooms are packaged using a container made of aluminum foil and closed using a packaging machine.

Apple

Apple is a complimentary ingredient in making instant oyster mushroom congee. The type of apple used is a Malang green apple. The preparation process was carried out by weighing 200 grams of apples, washing apples, cutting into fine brunoise, and soaking apples in a salt solution. The apple drying process is carried out under the sun (sun drying method). The temperature used to dry apple ranges from 30°C-35°C for 8-10 hours. The dry indicator on apples will be marked by a decrease in apple weight to 50 grams, a yield of 25%, or shrinkage of 75%. The final stage is the packaging. It is packed in a container made of aluminum foil and closed using a packaging machine.

Celery

Celery is a complementary ingredient for this instant oyster mushroom congee. The celery used is fresh green in color and has a strong aroma. The preparation process was carried out by weighing 150 grams of celery, washing, and cutting into fine brunoise. The celery drying process is carried out under the sun (sun drying method). The temperature used to dry ranges from 30°C-35°C for

5-6 hours. The dry indicator will mark a decrease in weight to 12.5 grams, an 8% yield, or a shrinkage of 92%. The process is continued by grinding using a chopper. The final stage is put in the packaging. We used a container made of aluminum foil and closed it using a packaging machine.

Carrot

Carrot is a complementary ingredient for this instant oyster mushroom congee. The carrots used are fresh orange, flavorful, and not slimy. The preparation process was carried out by weighing 200 grams, washing, peeling, and cutting into fine brunoise. The drying process is carried out under the sun (sun drying method). The temperature used to dry ranges from 30°C-35°C for 7-8 hours. The dry indicator will be marked by a decrease in weight to 60 grams, a yield of 30%, or shrinkage of 70%. The final stage is the packaging. Packed in containers made of aluminum foil and closed using a packaging machine.

Herb, Spice, and Seasoning

Herbs, Spices, and Seasoning are the ingredients that will flavor the instant oyster mushroom congee. It used in this study was dry in the form of powder. The weighing of herbs, spices, and seasoning is carried out with a ratio shown in the table below.

Table 1. Standardization of *Herb, Spice, and Seasoning*

No	Ingredients	Unit	Ratio
1	Instant Mushroom Bouillon	gr	1
2	Instant Chicken Bouillon	gr	0,5
3	Salt	gr	2
4	Pepper	gr	0,25
5	Oregano	gr	0,125
6	Onion Powder	gr	0,5
7	Garlic Powder	gr	0,25

All the ingredients that have gone through the weighing process will be mixed in a bowl container and stirred until evenly distributed using a spoon. The final stage in compounding this instant seasoning is the packaging. Packaged using a container made of aluminum foil and closed using a packaging machine.

Panelists Preference on the Instant Oyster Mushroom Congee

Based on the research results that have been done, the resulting product is given to the panelists through organoleptic to determine the hedonic quality (level of preference) and hedonic test (level of acceptance) of the panelists on this product. The following can explain the panelists' assessment quality of the instant oyster mushroom congee product.

The first aspect for assessment in instant oyster mushroom congee product is color. Determining the quality or degree of acceptance of food ingredients that determine food quality generally depends on the color. Based on the results of the panelists' assessment, it can be seen as follows:

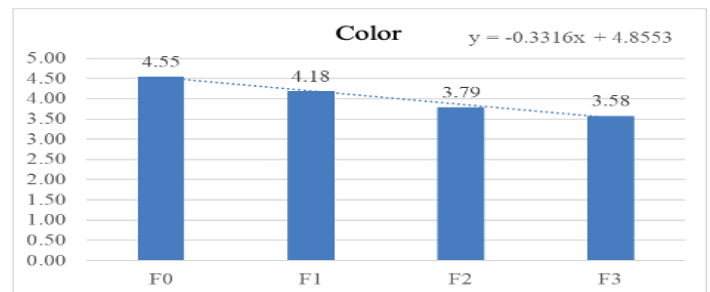


Figure 2. Color Graph of Instant Oyster Mushroom Congee

Based on Figure 2, it can be concluded that the color acceptance of instant oyster mushroom congee with formulations F0, F1, F2, and F3. The highest average score is F1 with an average of 4.18, F2 with an average of 3.79, and F3 with an average of 3.58. Furthermore, to see the differences between each formulation can be seen in the following Table 2:

Table 2. Analysis of ANOVA on Color Aspect

Formula	Mean (±) Std. \Deviation	P (Value)
F0	(4,55 ± 1,751) ^b	0,044
F1	(4,18 ± 1,291) ^{ab}	
F2	(3,79 ± 1,398) ^{ab}	
F3	(3,58 ± 1,884) ^a	

p<0,05= Different

The results of the ANOVA for color aspect acceptance showed a difference, so it could be concluded that the addition of oyster mushrooms gave a dark color

percentage to the congee color.

The second aspect is about the aroma, which is very instrumental in a food product that will be liked by someone who will eat the food, with a fragrant, someone will be interested in trying it. Below is a table and graph of the panelists' assessment aroma of instant oyster mushroom congee as follows.

Figure 3. Aroma Graph of Instant Oyster Mushroom Congee

Based on Figure 3, the aroma aspect acceptance of instant oyster mushroom congee with formulations F0, F1, F2, and F3 can be concluded. The highest average value is F3 with 6.24, then F2 with 5.26, F1 with 4.66, and F0 with 3.08. Furthermore, to see the differences between each formulation can be seen in the following table 3:

Table 3. ANOVA Analysis on Aroma Aspect

Formula	Mean (±) Std. Deviation	P (Value)
F0	(3,08 ± 1,761) ^a	0.000
F1	(4,66 ± 1,300) ^b	
F2	(5,26 ± 1,309) ^b	
F3	(6,24 ± 1,051) ^c	

P<0.001 = Very different

The results of the ANOVA for aroma aspect acceptance showed a significant difference, so it can be concluded that the addition of oyster mushrooms in each formulation will add an aroma to the congee product result.

Third, the texture is the primarily important aspect that can determine whether the quality of the instant oyster mushroom congee is good or not; the texture of the congee must be achieved in that the texture must be chewy. With a soft texture to the pulp, panelists will be interested in trying it. Below is a table and graph of the panelists' assessment texture of the instant oyster mushroom congee as follows.

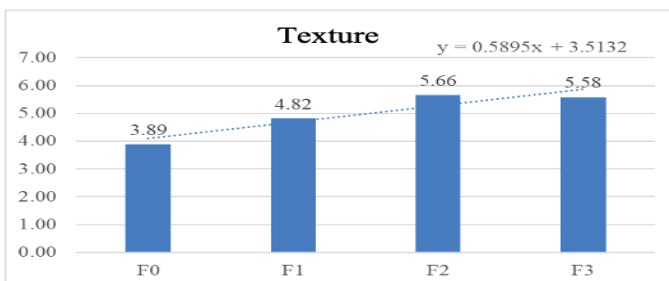


Figure 4. Texture Graph of Instant Oyster

Mushroom Congee

Based on Figure 4, the texture aspect acceptance of instant oyster mushroom congee with formulations F0, F1, F2, and F3 can be concluded. The highest average value is F2 with an average of 5.66, then F3 with 5.58, F1 with 4.82, and F0 with 3.89. Furthermore, to see the differences between each formulation can be seen in the following table 4:

Table 4. Analysis of ANOVA on Texture Aspect

Formula	Mean (±) Std. Deviation	P (Value)
F0	(3,89 ± 1,521) ^a	0.000
F1	(4,82 ± 1,136) ^b	
F2	(5,66 ± 1,122) ^c	
F3	(5,58 ± 1,287) ^c	

P<0,001 = Very different

The results of the ANOVA for texture acceptance showed a significant difference, so it can be concluded that the addition of instant oyster mushrooms congee in each formulation will change the texture of the congee.

Fourth is the taste aspect which is most important in determining the quality of instant oyster mushroom congee after color, aroma, and texture. The taste must be achieved to have a savory taste. Below is a table and a graph of the results of the panelists assessment taste of instant oyster mushroom congee as follows:

Based on Figure 5, the taste acceptance of instant oyster mushroom congee with formulations F0, F1, F2, and F3 can be concluded. The highest average value is F3 with an average of 5.26, then F1 with 5.24, F0, and F4 with 4.95. Furthermore, the differences between each formulation can be seen in the following Table 5.

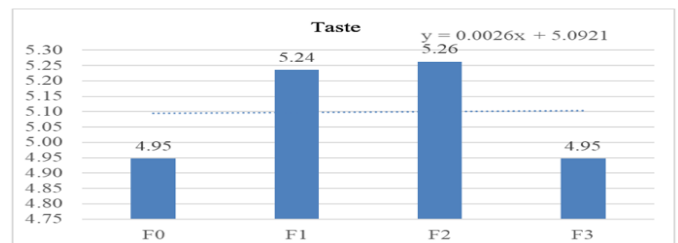


Figure 5. Taste Graph of Instant Oyster Mushroom Congee

Table 5. Analysis of ANOVA on Taste Aspect

Formula	Taste Mean (\pm) Std. Deviation	P (Value)
F0	(4,95 \pm 1,089) ^a	0,557
F1	(5,24 \pm 1,051) ^a	
F2	(5,26 \pm 1,245) ^a	
F3	(4,95 \pm 1,692) ^a	

p>0,005 = No different

The results of the ANOVA for taste aspect acceptance showed no significant difference, so it can be concluded that the addition of oyster mushrooms in each formulation did not change the taste of the congee.

Aspect OverAll

Over it is an overall assessment of the hedonic quality. Below is a table and graph of the results of the panelists assessment of overall instant oyster mushroom congee as follows:

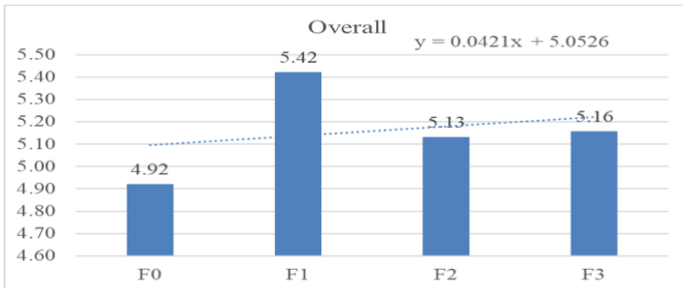


Figure 6. Overall Graph of Instant Oyster Mushroom Congee

Based on Figure 6, the color acceptance of instant oyster mushroom congee with formulations F0, F1, F2, and F3 can be concluded. The highest average value is F1 with an average of 5.42, then F3 with 5.16, F2 with 5.13, and F0 with 4.92. Furthermore, to see the differences between each formulation can be seen in the following Table 6:

The final results of the ANOVA test for overall acceptance showed no difference.

Table 6. Analysis of ANOVA on Overall Aspect

Formula	Mean Overall (\pm) Std. Deviation	P (Value)
F0	(4,92 \pm 1,282) ^a	0,430
F1	(5,42 \pm 1,081) ^a	
F2	(5,13 \pm 1,398) ^a	
F3	(5,16 \pm 1,462) ^a	

p>0,005 = No different

Hedonic Test

The assessment of instant oyster mushroom congee was carried out by organoleptic through the hedonic test with 11 (eleven) categories, ranging from (1) totally dislike; (2) much strongly dislike; (3) strongly dislike; (4) dislike; (5) somewhat dislike; (6) normal; (7) somewhat like; (8) like; (9) enormously like; (10) much enormously like, and; (11) totally enormously like.

Below is a table and graph of the results of the panelists assessment hedonic test of instant oyster mushroom congee as follows:

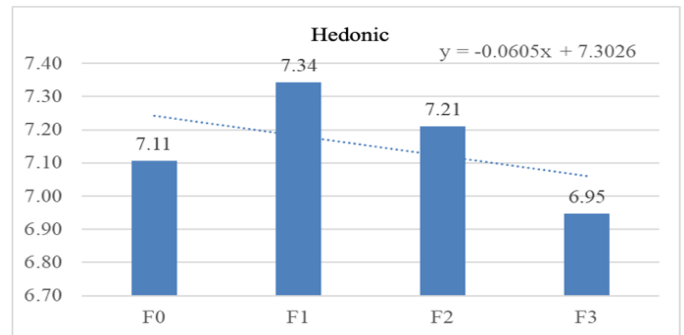


Figure 7. Hedonic Graph of Instant Oyster Mushroom Congee

Based on Figure 7, it can be concluded that the hedonic test acceptance of instant oyster mushroom congee with formulations F0, F1, F2, and F3. The highest average value is F1 with an average of 7.34, then F2 with 7.21, F0 with 7.11, and F3 with 6.95. The test results using the frequency table can be seen below.

Table 7. Frequency of Hedonic Test

No	Hedonic Respon	F0	F1	F2	F3
1	Totally dislike				
2	Much strongly dislike	1	1	1	1
3	Strongly dislike				
4	Dislike	1			5
5	Somewhat dislike	3		4	4
6	Normal	9	7	9	3
7	Somewhat like	4	12	6	8
8	Like	13	12	9	8
9	Enormously like	7	5	7	7
10	Much enormously like		1	1	1
11	Totally enormously like			1	1
	Total Panelists	38	38	38	38

Based on Table 7, the hedonic test acceptance of instant oyster mushroom congee with formulations F0, F1, F2, and F3 can be concluded. A total of 30 panelists chose the F1 formula with the range 'somewhat like' until 'much enormously like' with the percentage of 79%. These results are the same when juxtaposed with the average test on the hedonic or favorite aspects.

Furthermore, to see the differences between each formulation can be seen in the following table:

Table 8. Analysis of ANOVA on Hedonic Test

Formula	Mean (\pm) Std. Deviation	P (Value)
F0	(7,11 \pm 1.607) ^a	0.775
F1	(7.34 \pm 1.361) ^a	
F2	(7.21 \pm 1.727) ^a	
F3	(6.95 \pm 2.013) ^a	

$p > 0,005$ = No different

The results of the ANOVA test for hedonic acceptance showed no difference.

DISCUSSION

Stages of Making Instant Oyster Mushroom Congee

Based on the research, it can explain instant oyster mushroom congee production in several stages on the materials used, namely material preparation, material drying, congee making, and packaging—the serving of oyster mushroom congee with an instant form.

Oyster Mushroom Preparation

The selection of fresh condition material on mushrooms significantly affects the drying time process. The mushroom in the fresh condition is characterized by an aroma that does not have a bad smell; the color is white, the moisture is still in normal condition, not slimy, the texture is fresh with the skin not wrinkled. If the mushrooms to be processed have a foul smell, the drying process will inevitably take a long time and produce a pungent mushroom aroma.

The blanching process is carried out to clean the mushrooms from dirt to be safe for consumption. The drying process is carried out under the sun (sun drying method). The temperature used to dry ranges from 30°C-35°C for 10-12 hours. This temperature was chosen after the first and second drying tests. The temperature was used at 60°C and 80°C on the dehydrator machine and produced mushrooms dark colors, and the rehydration

power was not optimal.

Additional Vegetable Ingredients Preparation

Carrot

Vegetables that will be used in making instant oyster mushroom congee. Carrots contain beta carotene, fiber, potassium, and antioxidants [4]. These nutrients can support heart health. The preparation process begins with washing and peeling to get whole carrots; After that, we will wash with running water to clean the dirt attached to the carrots.

Next, the carrots will be cut into fine brunoise with a size of 3x3x3 mm. Determination of the minor size pieces greatly facilitates the drying process, after which the blanching process is carried out. The blanching process aims to sterilize. The drying process is carried out in the sun. This process was chosen because it can maintain the bright color pigment, and the material still has good rehydration power.

Celery

Celery is a vegetable with a solid aroma to add to the congee. Celery contains potassium and phosphorus [5]. These nutrients can support heart health. The preparation process begins with washing the celery using running water to clean the dirt attached to the celery.

After washing, cut it into fine brunoise. The type of cut can help the drying process and facilitate the grinding process of celery so that it easily dissolves in the congee.

Apple

Ripe apples will have a strong aroma and a sweet and sour taste. An apple is a pome fruit, around fruit consisting of dense, juicy flesh covered by a thin, edible skin and surrounding a cartilaginous core. Apples are used in almost all courses, from appetizers to desserts, and can even be the main ingredient in sauces and drinks, neutralizing the pungent aroma of the ingredients [5].

The preparation process begins with washing with running water to clean the dirt attached to the apple. Next, it will be cut into small fine brunoise with 3x3x3 mm. Determining the small size pieces great facilitates the drying process, after which the saltwater soaking process is carried out. The apple soaking process aims to maintain a bright color before drying.

The drying process is carried out under the sun. This

process was chosen because it can retain the color pigment, and the material still has good rehydration power.

Seasoning Preparation

Making herbs and spices as seasoning is done by preparing ingredients, namely instant chicken bouillon, onion powder, instant mushroom bouillon, salt, pepper, and oregano. Critically weigh the ingredients in a ratio of 2:1:1:1/2:1/4:1. Then the ingredients are mixed and stirred until evenly mixed. Spices are stored in tightly closed and light-tight containers.

Instant Congee Preparation

The process begins with soaking the rice in water at room temperature; this process is carried out to increase the rice's water content and soften the rice's surface so that when boiled, the rice quickly becomes mush. The method of cooking rice is carried out for 8-10 minutes. During this time, the water will ultimately seep and prevent the congee from over-cooking, which will burn the sugar into caramel. After that, it was cooled for 1-2 minutes and continued with the dehydrating process. The drying chamber must have a relatively high temperature with air flowing evenly. Rotary ovens are used in the drying process because the rotating motion of the baking pan will transfer heat evenly to the surface of the rice. The temperature used is 150°C, about 70 minutes, which is a medium temperature for oven heat which will have an evaporation effect on the rice so that the water content is lost without changing the white color of the rice.

After that, the process of cooling the rice, which has been removed from the baking pan, serves to re-release the hot steam to prevent condensation, which results in being wet and easily contaminated. Grinding the rice into small grains facilitates rehydration during the brewing process. Panelists acceptance of instant oyster mushroom congee based on the panelists assessment organoleptic tests on 2 (two) categories, namely Lecturers of the food production management, Politeknik Pariwisata Makassar, and the student food production management study program; the following are the results of the quality level of instant oyster mushroom congee. Consumers have expectations regarding the color, aroma, taste, and texture of food products, and, as such, these sensory properties are the main drivers of product acceptance. In this study, the organoleptic carried out was a hedonic quality test consisting of color, aroma, texture, taste, and hedonic. Instant oyster mushroom congee product organoleptic with 3 (three) formulas consisting of 1.5 gram F1, 3 gram F2, 4.5 gram F3.

Color

Color is the first observation in assessing a food product. Because color has an image of quality factors such as freshness, maturity, and food safety, its primary role is irrefutable for consumer acceptance of food product results of the sensory attributes test. The color of the instant oyster mushroom congee product on the four sample products showed that the more oyster mushrooms, the quality of the coloring the resulting congee showed the color was not bright because the color of the dried oyster mushrooms turned brown. The color change occurs as a result of the Maillard reaction. The Maillard reaction is between the amino groups of essential amino acids such as lysine and reducing sugars with proteins [9]. This reaction affects the percentage of color in the congee according to the amount in each formulation. In line with the results of research from Slamet Widodo and Gawarti, which stated that the more the number of ingredients added, the more affected the color of the resulting product [10].

Aroma

The aroma of food is enormously influential in determining whether the food is delicious or not when someone tastes a dish. Strong aroma affects us physically, psychologically, and socially. For the most part, we breathe in the scents that surround us without realizing their importance to us [1]. It can be seen from the organoleptic results in terms of the aroma of instant oyster mushroom congee; panelists prefer sample F3 with 70% oyster mushrooms, the addition of 4.5 grams of dried oyster mushrooms to the congee dramatically adds to the aroma that will arouse the taste buds, due to the pungent aroma of dried oyster mushrooms. The glutamate content in dried oyster mushrooms creates a distinctive aroma, affecting the aroma of the congee according to the amount in each sample formula.

Texture

The texture is an essential property of food products that can affect consumer acceptance. The texture of the food is very influential in determining whether the food is delicious or not. Textures are intricate and connected to the material's structure, such as versatility, oily, liquid. Texture has been defined as the manifest structure of food and how these structures react to the senses; the specific substances involved sight, kinesthetic, and hearing [3]. It can be seen from the sensory attributes test results in terms of instant oyster mushroom congee; panelists prefer F2 with the addition of 3 grams of dried oyster mushrooms because panelists highly favor the texture of the congee in

the F2 formulation. After all, their surfaces are delicious as desired, namely, thick texture, because the dried oyster mushrooms have moisture absorption in the congee, thus changing the texture. The more dried oyster mushrooms added to the congee, the more viscous the texture of the congee will be.

Taste

Taste is essential in determining the quality of instant oyster mushroom congee after color, aroma, and texture. Taste is a sensory perception that results when food or other substances interact with taste receptor cells on the tongue or other areas of the oral cavity. At the same time, humans can perceive a wide variety of chemical entities in general. However, not universally, it is accepted that there are only five basic taste modalities: sweet, sour, salty, bitter, and umami (glutamate) [3]. Taste can support a food product that someone can accept.

The taste of instant oyster mushroom congee must be achieved to have a savory taste. With a savory taste, panelists will be interested in tasting. It can be concluded that the acceptance of panelists who tasted the instant oyster mushroom congee showed that the sample F3 formula was the most favored by the panelists with the addition of 4.5 g of dried oyster mushroom.

Over All

Overall is an overall assessment of the hedonic quality in terms of color, aroma, texture, and taste. Panelists level preference for instant oyster mushroom congee products ranged from 4.92 (somewhat reasonable) to 5.42 (good). Panelists level preference for the whole was highest in the F1 formulation. It is greatly influenced by color, aroma, taste, and texture.

Hedonic Test

The hedonic or preference test on oyster mushroom substitution congee is a preference assessment that uses 11 (eleven) scales ranging from 'totally dislike' to 'totally enormously like'. It can be seen that the organoleptic results in terms of the hedonic test of instant oyster mushroom congee, panelists prefer F1 with the addition of 4.5 g of dried oyster mushroom. Therefore, instant oyster mushroom congee is categorized as acceptable.

Based on this research, it can be concluded that in terms of color, panelists preferred formula F0 or control sample, which produced a bright color of congee; in terms of aroma, panelists preferred formula F3, which was the addition of 4.5 grams of dried oyster mushroom to the

congee and produced a strong mushroom aroma. Regarding texture, panelists preferred formula F2, which added 3 grams of dried oyster mushrooms and made congee with a chewy; nature, in terms of panelists preferred the F3 formula, which was adding 3 grams to the congee and savory taste.

In the hedonic test, panelists preferred the F1 formula, which was the addition of 1.5 grams of dried oyster mushrooms to the congee and produced an excellent congee product; from the calculation of the hedonic test data in the percentage frequency of each formulation, the highest was in F1 of 79%. These congruent results strengthen the acceptance of instant oyster mushroom congee.

CONCLUSION

Based on the data analysis and discussion of the research results, the following conclusions can be drawn; (1) stages of making instant oyster mushroom congee. Based on the research carried out, it can be concluded that making instant oyster mushroom congee for each ingredient is different. The difference occurs during the drying process of the material. For vegetables and fruit, the drying process is carried out by drying in the sun, while for the main ingredient, rice, the drying method is carried out using a rotary oven. The packaging of instant oyster mushroom congee is done separately for each ingredient and uses heat pack packaging for serving the congee; (2) preference level of instant oyster mushroom congee. Based on the organoleptic tests, including hedonic tests and hedonic quality with the addition of 1.5 grams, 3 grams, and 4.5 grams of dried oyster mushrooms. The best formula in terms of color F1 formula with of 1.5 grams dried oyster mushrooms (average 4.55 relatively light), in terms of aromas, the F3 formula with 4.5 grams dried oyster mushrooms (average of 6.24 mushroom-scented), from in terms of texture, F2 formula with 3 grams of dried oyster mushrooms (average 5.66 thick-texture), in terms of taste, F2 formula with the addition of 3 grams of dried oyster mushrooms (average 5.26, in terms of overall), the F1 formula with 1, 5 grams of dried oyster mushrooms, and in terms of the hedonic test, the formula is F1 with the addition of 1.5 grams of dried oyster mushrooms. The best formula for the best quality organoleptic is the F1 formula with 1.5 grams of dried oyster mushrooms.

ACKNOWLEDGEMENTS

We wish to express our profound thanks to all the

members' Food Production Management study program and Research and Community Service Center, Politeknik Pariwisata Makassar, for their conduct and help finish this research.

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