

## Innovation in Making Meatballs, Pempek, and Sate Lilit with Snow Mushrooms (*Tremella Fuciformis*)

I Made Purwa Dana Atmaja

Politeknik Pariwisata Bali, Jl. Dharmawangsa, Benoa, Kec. Kuta Sel., Kabupaten Badung, Bali 80361, Indonesia

\* Corresponding Author. E-mail: [purwadanaatmaja@ppb.ac.id](mailto:purwadanaatmaja@ppb.ac.id) (I Made Purwa Dana Atmaja)

### ABSTRACT

Snow mushrooms are typically served directly, such as sautéed or fried with flour coating. More variations on the snow mushrooms-based food is expected to provide new experiences for people who want to enjoy mushrooms with the home flavor foods, particularly for people who do not eat meat. The purpose of this study is to determine the outcomes of the innovation of meatballs, pempek, and sate lilit with

snow mushrooms as the basic ingredients. The snow mushrooms were processed as the basic ingredients for making meatballs, pempek, and satay. The foods were evaluated by 25 trained panelists: Culinary Department lecturers and students, in terms of their aromas, textures, colors, and tastes. Panelists were given a checklist to assess the results of the observations, which were then scored using a Likert scale to determine whether the quality of the meatball, pempek, and sate lilit were very good, good, quite good, not good, or very bad. The experiment was carried out in the kitchen of Politeknik Pariwisata Bali. Based on the results of experiments and organoleptic assessments, it can be seen that the innovation of meatballs, pempek, and sate lilit yields very good results, with an average percentage of 80% for meatballs, 83% for pempek, and 80% for sate lilit.

Keywords: Innovation; Meatball; Pempek; Sate lilit; Snow Mushrooms.

**First Received:**  
Januari 2021

**Revised:**  
Maret 2021

**Accepted:**  
Mei 2021

**Final Proof Received:**  
Juni 2021

**Published:**  
Juni 2021

## **1. Introduction**

In the food processing industry, innovation is required to meet the tastes and desires of consumers. In today's world, there is a growing demand for nutritionally dense foods as well as a desire for good health. This is evidenced by the growing of vegetarian lifestyle, which influences the diets of consumers who used to consume meat but now do not.

Mushrooms are vegetable food ingredients that can be processed into a variety of foods due to their chewy texture when cooked, resembling the texture of meat-based foods. According to Sumarmi (Rahayu et al.,2015), mushrooms are becoming increasingly popular among the community because, in addition to their low cost, they have a high nutritional content. Meanwhile, the snow mushroom (*Tremella fuciformis*) is a species of heterobasidiomycetes (jelly fungi) with a fruiting body that is shaped like an irregular tassel, white, and very clear like jelly (Wikipedia, 2017).

Mushroom is generally used as an ingredient in sautéed, fried, flour-based foods, or as a filling in soup making. However, mushrooms are not commonly used to replace meat in food preparations that are typically made from meat or fish. Some people, particularly vegetarians, use gluten as a meat substitute in cooking in order to retain the texture, taste, and aroma of meat. According to Listiyowati (2015), the protein, vitamins, and minerals found in food mushrooms have the potential to replace beef, whose demand rises year after year in tandem with the Indonesian people's per capita economy.

Food development in food processing is done not only by developing techniques for cooking food ingredients, but also by changing or adding new ingredients to certain types of food with the goal of

producing foods that have a high taste, are appealing, have nutritional value, and are safe to consume.

Meatballs, pempek, and sate lilit are among the most popular and widely consumed Indonesian foods. Meatballs are typically made by grinding the main ingredients that is meat, mixing them with other ingredients, shaping them into a ball shape, and then boiling them. Originally, beef is used as the raw material for meatballs, but as the industry has evolved, chicken and fish are also used as raw materials.

Satay or sate in Indonesia are extremely diverse due to the fact that each region has its own specialty. Bali is one of the areas that has satay, which is popular in Indonesia. There are many different types of satay available in Bali, but sate lilit is the specialty of the the island. Sate lilit is a type of satay that is typically made from minced meat (fish, chicken, pork). Meanwhile, pempek is a traditional South Sumatran dish made of ground fish, tapioca flour, water, salt, and spices.

Based on this description, the processing snow mushrooms as the basic ingredients in the manufacture of meatballs, pempek, and sate lilit is expected to be a viable alternative to meeting the food needs of the community members who do not consume meat as their primary source of protein. The texture, aroma, and taste of the foods made with snow mushrooms as the main ingredient to replace meat are expected to resemble processed meat foods like meatballs, pempek, and sate lilit.

## **2. Literature Review**

### **2.1. Snow Mushroom**

Since the XIV century AD, mushrooms have been known and popular as a delicacy. When the Ming dynasty ruled mainland China, mushrooms became a special dish for state officials. Since the opening of trade

and communication between countries and continents, the delicacy and distinct flavor of mushrooms has spread all over the world. Mushrooms have evolved into a popular and prestigious dish. Mushrooms are classified as commodities that are inextricably linked to human needs. Bread, tempeh, tape, taoco, oncom, and various drugs, such as penicillin, are all impossible to make without mushrooms. Several types of mushrooms can be used in place of meat, fish, and other expensive and nutritious foods. Mushrooms are the preferred alternative food (preference) of people at all socioeconomic levels. Timlo, mushroom fried rice, mushroom taoco, sukiyaki, and noodles are all popular mushroom dishes in Indonesia. Mushrooms have twice the protein content of asparagus and potatoes, four times that of carrots and tomatoes, and six times that of oranges. At least 6-7 types of amino acids are found in mushrooms, out of the approximately 15 essential amino acids required by the human body (Djarajah, M., Djarajah, S. 2001).

The snow mushroom (*Tremella fuciformis*) is a heterobasidiomycetes (jelly fungi) species with fruiting bodies that are irregular in shape, white in color, and very clear. Snow mushroom (*Tremella fuciformis*) is a high-protein food ingredient that is also high in vitamins and minerals and has a low carbohydrate, fat, and calorie content. Composition of nutrients 11.4 percent moisture; 3.4 percent ash; 5.7 percent protein; 76.6 percent carbohydrates; 4.9 milligrams per gram of sodium; 3.2 milligrams per kilogram of potassium; and 1.1 milligrams per kilogram of calcium (Khondkar in utami et al, 2015). Meanwhile, Tjokrokusumo (2015) claims that mushrooms have high protein levels ranging from 17.5 to 27 percent, low fat levels ranging from 1.6 to 8%, and high levels of good food fiber ranging from 8 to 11.5 percent, making them suitable for use as healthy food ingredients.

## 2.2. Meatball (Bakso)

Meatball is a traditional Indonesian food made by combining meat, salt, onions, and tapioca flour into a dough that is then formed into ping pong-sized balls before being cooked in boiling water (Soeparno, 2005). In addition, Melia (2010) explained that meatballs are food ingredients made from meat as the main ingredient, both beef, chicken, fish, shrimp and duck meat. Meatball is meat that has been mashed and mixed with other additives and spices so that the meatballs are more delicious.

Meatball derives from Chinese-Indonesian culinary arts. This is demonstrated by the term bakso, which is derived from the Hokkien word Bak-So, which literally means "ground meat." Meatballs are more commonly made from halal meat, such as beef, fish, or chicken, because the majority of Indonesians are Muslims.

According to the National Standardization Council listed in SNI No. 01-3818-1995, Meatball is a food product in the form of a circle or other obtained from a mixture of livestock meat (meat content not less than 50%) and starch (cereals) with or without the addition of other food ingredients, as well as permitted food ingredients. The quality of meatballs is very much determined by the quality of the raw materials, especially the type and quality of meat, the type of flour used and the ratio in the dough (Astawan, 1989).

The quality of the meatball is determined by the amount of flour mixture that is added, the more flour used the lower the quality of the meatball. The chemical composition of meatballs is determined by the chemical composition of the constituent materials (Wibowo, 1999). The raw materials will also affect the quality of the meatballs produced. Meanwhile, other factors affect the quality of the meatballs, including the additional ingredients used and how to cook them (Daniati, 2005).

### 2.3. Pempek

According to Sugito and Hayati (2006), pempek is a product of processed fish meat in the form of a type of protein gel that is homogeneously white, has a chewy and elastic texture. Karneta (2013) states that pempek is made from a mixture of the basic ingredients of mashed fish meat, tapioca flour, water, salt, and spices as a flavor enhancer. This mixture can be served in various forms and then cooked by boiling, steaming, frying, or grilling. The serving of pempek is accompanied by soup or cuko pempek as a complement.

Historically, pempek existed in Palembang, which was around the 16th century when Sultan Mahmud Badaruddin II came to power in the Palembang Darussalam sultanate. The name empek-empek or pempek is believed to have originated from the term apek or pek-pek, which is the name for uncle or old Chinese man (Wikipedia, 2020).

In general, a good pempek has the following characteristics:

- a. Chewy: the elasticity of the pempek can be influenced by the basic ingredients used in its production, such as whether sago starch is used, as well as the addition of water as an additional thickening agent.
- b. Pempek color: this is influenced during the pempek-making process, where the pempek stirring should be done evenly until the pempek base dough is smooth and white and not too pale.
- c. Not easily mushy when boiled: this may be influenced by several factors, namely boiling time and being given a little oil in the cooking water so that the pempek dough is not sticky and damaged.
- d. Not easily mushy when boiled: this can be influenced by a number of factors, including boiling time and the addition of a small amount of oil to the cooking water to keep the pempek dough from becoming sticky and damaged.

- e. The aroma of pempek must be good as the typical of pempek in general.

### 2.4. Sate Lilit

In Bali, sate lilit is typically made for offerings when religious ceremonies or large events are held as a form of respect and appreciation for the Hindu gods. Sate lilit is always produced in large quantities or on a large scale, sometimes involving a hundred men. It turns out that the process of making sate lilit has always been entrusted with men, starting from mixing the dough, slaughtering animals, twisting it to burning it. From the process that men tend to do, sate lilit has a strong philosophical meaning in male life and masculinity.

Previously, sate lilit was only made from pork and fish, but due to a lot of demand and adjusting for consumers who could not eat pork, beef and chicken satay was also made. The satay made from minced pork, fish, chicken, beef, or even turtle, will be mixed with grated coconut, coconut milk, and basa genep or basa gede spices.

According to Darmayasa, et al., (2015) sate lilit is made from mashed pork or tuna fish which is then added with salt, a mixture of spices, and wrapped around a twisted satay stick. The seasonings used to make the satay are shallots, garlic, coriander, turmeric, ginger, galangal, grated coconut, lime leaves, pepper, chilies, and salt.

Sate lilit is a typical Balinese food that is processed using meat ingredients, the meats that are often used are pork, fish, chicken, beef and turtle. The meat mashed and mixed with grated coconut, coconut milk, lime, shallots and pepper. Most of the satay is skewered with sharp skewers, sate lilit however requires a skewer with a wide surface and 10-15 cm long so that the meat will easily stick to it (Milasari, 2017).

Based on this understanding, sate lilit is a satay made from mashed meat or minced meat, (fish, chicken, pork) mixed with spices such as shallots, garlic, coriander, turmeric, ginger, galangal, grated coconut,

lime leaves, pepper, chilies, and salt. The mixed meat will be wrapped in bamboo, lemongrass, or sugar cane before being grilled.

According to Kruger (2014), the good quality or quality of typical Balinese satay is as follows:

a. Taste

Sate lilit has a strong spice flavor accompanied by a distinctive taste of coconut and a sweet taste of brown sugar.

a. Aroma

There's is a burning aroma of coconut, spices, and the distinct aroma of sate lilit.

b. Texture

It has a soft texture and can stick or wrap perfectly on the skewers.

c. Color

It looks burnt on the outside and has the distinctive caramel color of roasted brown sugar.

### 3. Materials and Methods

Meatballs, pempek, and satay wrapped in snow mushrooms as a substitute for chicken and fish meat were the subjects of this study. The research was carried out in the Bali Tourism Polytechnic practice's kitchen. The data sources used in this study were primary and secondary data. This study's panelists were 25 trained panelists, including 5 lecturers from the Catering Management Study Program and 20 students in the fifth semester of the 2020/2021 Academic Year.

The data collection technique was carried out by using experimental techniques, documentation, and organoleptic tests. The experiment was carried out with the aim of knowing and controlling the process and stages of making meatballs, pempek, and satay lilit with the basic ingredients of snow mushrooms. The documentation technique is used in the process of making the production stages from the beginning of preparation to producing a product that is in accordance with the standards followed by giving samples to the panelists who are then given

an organoleptic assessment so that the taste, aroma, texture and color quality of the meatballs, pempek and satay are obtained. the basic ingredients of snow mushrooms.

According to Sugiyono (2014) experimental research is a research method used to find the effect of certain treatments on others under controllable conditions. The data analysis technique was carried out in a quantitative descriptive manner by providing a score value on the answers given by the panelists using a Likert scale so that the quality of the resulting product could be determined in terms of being very good, good, sufficient, not good or not good (Sugiyono, 2014).

This research was carried out in stages. The first stage was an experiment based on a modified standard recipe, namely the substitution of snow mushrooms for the basic ingredients to produce a product that met the standard, which was then organoleptically assessed by 25 trained panelists. The product processing process is described, starting from preparation to achieving results that are in accordance with good standard of meatball, pempek, and satay lilit and then submitted to the panelists to be assessed for the quality of taste, aroma, texture, and color.

## 4. Results and Discussion

### 4.1. Research Result Experiment

Experiments were carried out by applying standards in the processing of meatballs, pempek, and sate lilit according to the modified recipe by replacing the basic ingredients using snow mushrooms, which can be seen in sequence in tables 1, 2, and 3 as follows:

**Table 1.** Snow Mushroom Meatballs Recipe

YIELD	: 20 pcs			
PORTION	: 15 gr			
DISH	: Snow Mushroom Meatballs ( <i>Tremella Fuciformis</i> )			
NO	QTY	UNIT	INGREDIENT	EXPLANATION
1.	200	Gr	Snow Mushroom ( <i>Tremella Fuciformis</i> )	Soaked and washed then cut the roots
2.	80	Gr	Tapioca Flour	For use as a dough adhesive

NO	QTY	UNIT	INGREDIENT	EXPLANATION
3.	7	Gr	Salt	Spices
4.	¼	Tsp	Pepper	Spices
5.	2	Pcs	Fried Garlic	Spices
6.	16	Gr	Cold Water	For use as a dough adhesive

Source: Experiment Data (2020).

How to make snow mushroom meatballs:

- a. Prepare the necessary materials and equipment.
- b. Soak the mushrooms for 3-5 minutes in a bowl, then wash and drain.
- c. Cut mushrooms into small pieces. Then squeeze the mushrooms to reduce the amount of water on them.
- d. Put the mushrooms in the blender until they become like grains of sand / fine.
- e. Put the mushrooms in the bowl and prepare another bowl to be used as a place to stir the meatball dough.
- f. Weigh all ingredients. Then mix it into the bowl that was prepared earlier. Stir the meatball mixture evenly until it is combined.
- g. If it has hardened into a meatball dough, boil the meatballs in hot water over high heat. The dough should then be weighed at 15gr and shaped into a round shape. The weighed dough yields 20 pieces of meatball balls.
- h. When the water is boiling, turn off the heat and add the previously weighed meatball mixture. Allow to stand for 3-5 minutes before returning to a low heat.
- i. Make some ice water. Allow time for the meatball to expand. If it expands, remove it immediately and drain it. Then pour it into the ice water that has been prepared. Allow to stand for 3-5 minutes before draining again. This is useful to keep the meatballs from sticking together.

The results of the snow mushroom meatball experiment are shown in the following image:



**Figure 1.** Snow Mushroom Meatball  
Source: Result of Experiment (2020)

**Table 2.** Snow Mushroom Pempek Recipe

YIELD : 5 pcs  
 PORTION : 50-60 gr  
 DISH : Snow Mushroom Pempek

NO	QTY	UNIT	INGREDIENT	EXPLANATION
1.	100	Gr	Snow Mushroom ( <i>Tremella Fuciformis</i> )	Cut the snow mushrooms then puree using a blender
2.	100	Gr	Tapioca Flour	For use as a dough adhesive
3	30	Gr	Flour	In a boiling flour solution, combine salt and garlic powder, stir until thickened, then remove from heat and set aside.
3.	5	Gr	Salt	Spices
4.	1	Gr	White Pepper	Spices
5.	5	Gr	Garlic Powder	Spices
6.	20	MI	Water	For use as a dough adhesive

Source: Experimental Data(2020)

How to make snow mushroom pempek:

- a. Prepare the necessary materials and equipment.
- b. The snow mushrooms that have been cut into pieces are grinded using a blender.
- c. Mix evenly the mashed sago flour and snow mushrooms.
- d. Combine with flour mixture, salt, and garlic powder.
- e. If it has become a pempek dough, prepare hot water to boil the pempek. Weigh into 50-60 grams and formed a lenjer. The dough that has been weighed will produce 5 pieces of pempek lenjer.
- f. When the water is boiling, boil the formed pempek dough. Then remove it when the pempek is floating, which indicates that the pempek is ripe then

chill.

- g. Prepare the hot oil then fry the pempek until the color turns golden brown.

The results of the snow mushroom pempek experiment can be seen in the following picture after boiling and frying:



**Figure 2.** Boiled Snow Mushroom Pempek

Source: *Experimental Result (2020)*



**Figure 3.** Fried Snow Mushroom Pempek

Sumber: *Experimental Result (2020)*

**Table 3.** Snow Mushroom Satay Recipe

YIELD : 16 pcs  
 PORTION : 30 gr  
 DISH : Snow Mushroom Satay

N O	QTY	UNIT	INGREDIEN T	EXPLANATION
1	300	Gr	Snow Mushroom	Steamed, mashed
2	5	Gr	Fried Shallot	
3	50	Gr	Grated coconut	
4	2		Coconut Milk	
5	5-10	Tsp	Oil	
6	5	pcs	Lime Leaves	
7	3	Pcs	Bay Leaves	
8	3	Pcs	Lemongrass	Crushed, sauted
9	1	Tsp	Palm Sugar	Sliced
<b>Ground Spices</b>				
10	75	Gr	Shallot	Saute, mashed
11	25	Gr	Garlic	Saute, mashed
12	2	Pcs	Chilli	Saute, mashed
13	1	Pcs	Cayenne Pepper	Saute, mashed
14	5	Gr	Turmeric	Saute, mashed
15	10	Gr	Kencur	Saute, mashed
16	15	Gr	Galangal	Saute, mashed
17	10	Gr	Ginger	Saute, mashed
18	10	Gr	Candlenut	Roasted, mashed
19	½	Tsp	Ground Nutmeg	
20	¼	Tsp	Coriander	Roasted, mashed
21	½	tsp	Salt	Spices
22	¼	tsp	Pepper	Spices

Source: *Experimental Data(2020).*

How to make snow mushroom satay:

- a. Steam the snow mushrooms for about 10 minutes to remove moisture in the mushrooms.
- b. Cool briefly, then wring it out using gauze.
- c. Mashed the snow mushrooms until smooth. Set aside.
- d. Prepare the ingredients for the ground spices then saute briefly until wilted.
- e. Blend the sauteed spices until smooth.
- f. Saute ground spices, add bay leaves, lemongrass, salt, and sauteed pepper until fragrant and cooked. Set aside.
- g. Mix together mashed snow mushrooms, ground spices, chopped lime leaves, grated coconut, coconut milk, brown sugar, fried onions, salt, and pepper in a mixing bowl until well blended.
- h. Take 30 grams of dough, then wrap it on a twisted skewer.
- i. Grill for about 10 minutes until cooked.
- j. Satay lilit is ready to be served.

The experimental results of the snow mushroom sate lilit can be seen in the picture:



**Figure 4.** Snow mushroom satay

Source: *experimental result (2020)*



**Figure 5.** Snow Mushroom Satay after Grilled

Source: *experimental result (2020)*

**Organoleptic Test**

The recapitulation of the organoleptic assessment results in table 4 shows the results of the organoleptic assessment to

determine the quality of the meatballs, pempek, and satay with snow mushrooms based on the color, taste, texture, and aroma of the 25 panelists.

**Table 4.** Recapitulation of Organoleptic Assessment Results of Meatball, Pempek and Sate Lilit with Snow Mushrooms

No	Object	Assessment	Number of Panelists			Likert scale score	Finale Score		
			Meatball	Pempek	Satay Lilit		Meatball	Pempek	Satay Lilit
1.	Color	Very Good	8	7	0	5	40	35	0
		Good	14	14	0	4	56	56	0
		Quite Good	3	4	20	3	9	12	60
		Not Good	0	0	5	2	0	0	10
		Very bad	0	0	0	1	0	0	0
		The number of responses from the panelists	25	25	25		105	103	70
2.	Aroma	Very Good	6	12	8	5	30	60	40
		Good	14	9	15	4	56	36	60
		Quite Good	3	4	2	3	9	12	6
		Not Good	1	0	0	2	2	0	0
		Very bad	1	0	0	1	1	0	0
		The number of responses from the panelists	25	25	25		98	108	106
3.	Texture	Very Good	10	6	11	5	50	30	55
		Good	14	15	10	4	56	60	40
		Quite Good	1	4	4	3	3	12	12
		Not Good	0	0	0	2	0	0	0
		Very bad	0	0	0	1	0	0	0
		The number of responses from the panelists	25	25	25		109	102	107
4.	Taste	Very Good	6	10	14	5	30	50	70
		Good	9	9	11	4	36	36	44
		Quite Good	5	6	0	3	15	18	0
		Not Good	3	0	0	2	6	0	0
		Very bad	2	0	0	1	2	0	0
		The number of responses from the panelists	25	25	25		89	104	114



After the final score on each instrument is obtained, the processing of the organoleptic test results data is continued into the process of determining the interpretation results. Before determining the interpretation results, it is necessary to know the highest score (Y) and lowest score (X) for each instrument with the formula (Darmadi, 2011) as follows:

$$Y = \text{Highest Likert Score} \times \text{Number of panelists in total}$$

$$X = \text{Lowest Likert Score} \times \text{Number of panelists in total}$$

The lowest and highest scores for each instrument were calculated using the two formulas. Table 5 shows the calculation of the lowest (X) and highest (Y) scores.:  
 Table 5. The Calculation of The Lowest (X) and Highest (Y) Scores.

The Lowest Score (X)	The Highest Score (Y)
1 x 25 = 25	5 x 25 = 125

Source: Research Data (2020).

From the calculation of the data, the highest score (Y) is 125 points and the lowest score (X) is 25 points for each instrument. The next process in determining the interpretation of the score is determining the interval (distance) and the interpretation of the%. To find out the intervals used in this study, the solution to the formula is used as below:

$$\text{interval} = \frac{100\%}{\text{total likert score}}$$

As a result, the interval used to determine the interpretation result is 20%. With these results, it is possible to explain why the score interpretation criteria will be used, which are as follows:

**Table 6.** Score interpretation criteria are based on percentage

percentage %	Score interpretation criteria
0% - 20%	Very Bad
21% - 40%	Not Good
41% - 60%	Quite Good
61% - 80%	Good
80% - 100%	Very Good

Source: Research Data (2020)

The determination of the results of the interpretation of each variable instrument is carried out using the index formula. The index formula is obtained from the total score divided by the highest score of the assessment multiplied by 100%. Recapitulation of variable index values on the sample instruments of meatballs, pempek, and sate lilit with the basic ingredients of snow mushrooms can be seen in table 7 as follows:

**Table 7.** Recapitulation of index values on meatballs, pempek and satay with white ear snow mushrooms

No	Observed object	Index Values			Interpretation Criteria		
		Meatball	Pempek	Satay Lilit	Meatball	Pempek	Satay Lilit
1	Color	84%	82%	56%	Very Good	Very Good	Quite Good
2	Aroma	78%	86%	85%	Good	Very Good	Very Good
3	Texture	87%	82%	86%	Very Good	Very Good	Very Good
4	Taste	71%	83%	91%	Good	Very Good	Very Good

No	Observed object	Index Values			Interpretation Criteria		
		Meatball	Pempek	Satay Lilit	Meatball	Pempek	Satay Lilit
Average total		80%	83%	80%	Very Good	Very Good	Very Good

Information:

Index Value = Total score on each variable instrument / highest score (Y) x 100%

Source: Research Data (2020)

#### 4.2. Discussion

The results of the research can be presented based on the organoleptic assessment of the color, taste, texture, and aroma of meatballs, pempek, and satay with snow mushrooms, which were tested on by 25 panelists, as shown below:

##### a. Color

In the assessment conducted by the 25 panelists, meatballs and pempek got very good results, but on sate lilit, the results were quite good. The color of the food is heavily influenced by the basic ingredients and the cooking method used; in this case, the method used is grilled in accordance with satay standards in general, but because the basic ingredient used is snow mushrooms, the color is too dark and tends to be less appealing.

##### b. Aroma

Meatballs received a lower rating (good) compared to pempek and sate lilit (very good). In the cooking method used, boiled meatballs are used so that the aroma is not overpowering, as opposed to pempek, which is boiled and then fried, as well as grilled satay, which has a stronger aroma.

##### c. Texture

Based on the assessment conducted by the panelists, the textures obtained from the meatballs, pempek and sate lilit received very good ratings. The texture of food is heavily influenced by the nature of the main ingredients used; in this case, the texture of the snow mushroom, also known as jelly mushroom, is chewy, making it ideal for the resulting product with a chewy texture.

##### d. Taste

Meatballs have a lower (good) rating compared to pempek and sate lilit (very

good). In general, meatballs are served with a sauce that gives a savory broth taste so that an assessment with only the meatball results in a lower rating compared to pempek and lilit satay. In the spices satay, which is mixed directly into the satay mixture, the satay is richer in taste even though the basic ingredient, namely snow mushrooms, does not have a striking taste character.

#### 5. Conclusions

Based on the results of experiments and organoleptic assessments that have been carried out, it can be concluded that the results of the innovation of meatballs, pempek, and sate lilit using snow mushrooms as the basic ingredients in their manufacture get very good ratings. The results of the color assessment on the sate lilit got the lowest result, namely 56% in the Quite Good category so that development and quality improvement are needed, especially in terms of the color of the product produced. The best result of the assessment of the three products produced is in the texture category, which is getting very good results. Assessment of the quality of a food is not only seen in terms of color, aroma, texture, and taste, but also very much determined by the nutritional value of the food so that further research needs to be done by looking at the nutritional content of meatballs, pempek, and sate lilit with snow mushroom as basic ingredients.

#### 6. References

- Astawan, W. 1989. *Teknologi Pengolahan Pangan*. Jakarta: CV Akademika Pressindo.
- Badan Standarisasi Nasional. 1995-a. SNI

- No 01-3818-1995 Syarat Mutu Meatball. BSN, Jakarta.
- Culture of Bali. Jakarta: Jafa Books Indonesia.
- Daniati, T. 2005. Pembuatan Meatball Ikan Cucut dengan Bahan Tambahan Jenis Tepung yang Berbeda. Tugas Akhir. Jurusan Teknologi Jasa dan Produksi. Fakultas Teknik Universitas Negeri Semarang.
- Darmadi, Hamid. 2011. Metode Penelitian Pendidikan. Bandung: Alfabeta
- Darmayasa, Ide Bagus Gede, I Gusti Ayu Laras Pratama, Ni Made Susun Prawnayoni. 2015. Kualitas Satay Lilit yang Berada di pasar Tradisional Karangasem, Bali ditinjau dari *Staphylococcus Aureus*. *Jurnal Simbiosis*. III (1). 313—316.
- Djarajah, M., Djarajah, S. 2001. Budi Daya Jamur Kuping Pembibitan dan Pemeliharaan. Kanisius: Yogyakarta.
- Kruger, Vivienne L. 2014, *The Balinese Food: The Tradisional Cuisine and Food*.
- Listiyowati, S. 2015. Jamur Pangan sebagai Alternatif Pengganti Daging Sapi dan Efeknya terhadap Budidaya Jamur di Indonesia.
- Melia, S., Juliyarsi, I., & Rosya, A. (2010). Peningkatan Kualitas Meatball Ayam dengan Penambahan Tepung Talas sebagai Substitusi Tepung Tapioka. *Jurnal peternakan*, 7(2).
- Milasari. (13 Oktober 2017). Satay Lilit Makanan Khas bali. <https://balikami.com/Satay-lilit-makanan-khas-bali>
- Railia Karneta, dkk. 2013. “Difusivitas Panas dan Umur Simpan Pempek Lenjer”. *Jurnal Keteknik Pertanian*. 27 (2) :131-141.
- Rahayu, Dina, dkk. 2015. “Analisis Kualitas Produk dalam Pengembangan Bisnis Nugget Jamur Tiram Putih Aneka Rasa Bumbu Masakan Tradisional”. *The Journal Gastronomy Tourism*. 1 (2): 88—98.
- Soeparno. 2005. Ilmu dan Teknologi daging. Yogyakarta. Gajah Mada University Press.
- Sugito dan Ari Hayati. 2006. Penambahan daging ikan gabus (*ophicepallus strianus* BLKR) dan aplikasi pembekuan pada pembuatan pempek gluten”. *Jurnal Ilmu Pertanian Indonesia*, 8(2): 147—151.
- Sugiyono 2014. Metode Penelitian Pendidikan Pendekatan Kuantitatif, Kualitatif, dan R&D. Bandung: Alfabeta,
- Tjokrokusumo, D., Widyastuti, N. E. T. T. Y., & Giarni, R. E. N. I. (2015). Diversifikasi produk olahan jamur tiram (*Pleurotus ostreatus*) sebagai makanan sehat. Dalam Seminar Nasional Masyarakat Biodiversitas Indonesia (pp. 2016-2020).
- Utami, E., Rosyidi, D., Widyastuti, E. (2015). Pengaruh Substitusi Daging Ayam Broiler dengan Jamur Salju (*Tremella fuciformis*) pada Kualitas Nugget Ayam. *Jurnal Ilmu dan Teknologi Hasil Ternak*, Vol. 10, No. 2. ISSN : 1978 – 0303.
- Wibowo, Singgih. 2009. Membuat Bakso Sehat dan Enak. Jakarta. Penebar Swadaya.
- Wikipedia, kontributor. (26 Februari 2017). Jamur Kuping Putih. [https://id.wikipedia.org/w/index.php?title=Jamur\\_kuping\\_putih&oldid=12572014](https://id.wikipedia.org/w/index.php?title=Jamur_kuping_putih&oldid=12572014)