

Research Article

Keliball

Nurul Husna Wan Zuki¹, Siti Ulinnuha Moh. Samsudin², Nornadleen Hisamudin³, Noristisarah Abd Shattar^{4,*}, and Sri Puvanesvari Gannasin⁵

¹ UiTM Cawangan Terengganu; nhusena00@gmail.com;  0009-0002-0072-1935

² UiTM Cawangan Terengganu; sakuralin00@gmail.com;  0009-0008-2872-0241

³ UiTM Cawangan Terengganu; nadleen.syamlan@gmail.com;  0009-0000-7135-0006

⁴ UiTM Cawangan Terengganu; noris590@uitm.edu.my;  0000-0001-9404-9929

⁵ UiTM Cawangan Terengganu; sri_puvanesvari@uitm.edu.my  0000-0003-3301-3310

* Correspondence: noris590@uitm.edu.my; 0123910279.

Abstract: Keliball is a fish ball made from catfish paste. Fish balls are one of the popular foods for steamboats and meals. The objective of this study was to identify the effects of different starches (corn flour, soft flour and strong flour) in the preparation of Keli fish balls. Fish ball using Chub mackerel containing corn flour was prepared as a control sample. Boiled fish balls were breaded and par-fried before freezing. Sensory evaluation of the fish balls was performed using the 9-point Hedonic scale to evaluate the sensory attributes such as flavour, aroma, texture, appearance and overall acceptability using thirty untrained panellists. Results showed that Keliball formulated using soft flour was the most preferred with the highest mean score obtained for the following sensory attributes: appearance, flavour, texture and aroma. Keliball which is an added-value product can be a good source of omega-3 fatty acids and vitamin B12 that can be consumed by people of all age groups.

Keywords: Keliball, starch, fishball, catfish, sensory evaluation



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1. INTRODUCTION

Catfish has become one of the main protein sources that is popular among Malaysians (Mohd. Fakhrurazi Sadii, n.d.). The catfish is easy to breed at the farm because catfish is durable as the survival rate of catfish is also high due to its hardy nature. This can minimize the risk of loss too. Catfish is also easy to get supplies, it is fast magnification, has long lives and high market demand. This innovative product is produced to give options for consumers to try different types of fish. This is because fish balls in the market are usually made from sea water fish like mackerel and yellowtail fish and it was expensive for consumers. This Catfish offers an affordable price for consumers to buy. There are many farmers who harvest this type of Catfish, and it is not that hard to catch like saltwater fish (Zahir Zainudin, 2015). Freshwater fish are easier to find, and it has affordable prices to offer the consumers and marketers. Catfish is very high in vitamin B12, selenium, and omega-3 and omega-6 fatty acids (Snyder, 2021). It is also low in calories and sodium. Freshwater fish provide a high-quality source of animal protein. The protein percentage of meat ranges from 15 to 20% of wet weight, and the protein has a balanced amino acid structure (Steffens W., 2006). As a result, the Keliball can have a potential opportunity in the market and would bring advantage to the producer also.

1.1 Objective

- To identify the elasticity of keliball with different types of flours.
- To emphasize the importance of flour in the successful preparation of keliball.

1.2 Problem Statement

- Sea water fish is more expensive compared to freshwater fish.
- Some people dislike freshwater fish and need to make it looks attractive to be tried.

2. METHOD & MATERIAL

2.1 Material

Materials of Keliball were obtained from the market. Table 1 shows the percentages of ingredients used in making the fish balls and its variations.

Table 1. Formulation of Keliball.

Ingredients	Control (%)	Variation 1 (%)	Variation 2 (%)	Variation 3 (%)
Chub mackerels' fish	60	0	0	0
Cat Fish	0	60	60	60
Corn flour	20	20	0	0
Soft flour	0	0	20	0
Strong flour	0	0	0	20
Onion	10	10	10	10
Water	8.5	8.5	8.5	8.5
Sugar	0.5	0.5	0.5	0.5
Black pepper	0.5	0.5	0.5	0.5
Salt	0.5	0.5	0.5	0.5

Variations:

1. Control - Basic Ingredients with Chub Mackerels
2. Variation 1 - Basic Ingredients with Catfish; Corn flour
3. Variation 2 - Basic Ingredients with Catfish; Soft flour
4. Variation 3 - Basic Ingredients with Catfish; Strong flour

2.2 Method

Keliball processing steps:

a. Preparation of the fish

Clean the fish and rinse with cold water, pat dry with paper towels. Filet the fish along the bones from the tail up towards the head using a very sharp knife. Repeat on the other side. Get a bowl to put the fish meat. Using a spoon, scrape the fish meat off the skin of the fish filet, from the tail upwards. Scrape until all meat is off the skin. Discard the skin. Use the spoon to scrape off the fish meat off the fish bone, too. Place all the filet fish in a blender and blend until it is finely crushed.

b. Preparing for flour mixture.

Firstly, weigh the flour and sift the flour. Then, mix the flour with salt, pepper and sugar. In a bowl, dry ingredients are ready. Next, dice the onion and mix it with fish paste that has blended. Also, mix the dry ingredients with fish paste and diced onion.

c. Shaping the fish balls

Using the piping bag, put the mixture into it. Then, squeeze it on the scales until it reaches 15gm for each fish ball and shape it into balls. Put the fish balls into cold water.

d. Boiling

As the water boiled, put the fish balls into it for about 5 minutes. Take them out and let it cool down for a while.

e. Coating and deep-frying methods

After the fish balls have cooled down, coated them in the flour and then to eggs and bread crumbs which is by using double techniques. In a pan, the oil is heated till 180C. As the oil reached the temperature, the coated fish balls were fried for about 3 minutes. Not until golden brown. Once it was done, the fried fish balls were set aside to drain the excess oil and cooled down.

f. Storage

The fried fish balls were dry and cooled down before packing the fish ball with 75gm of weight into a plastic pack. The pack has sealed and into designing packaging. Then, freeze them in the freezer for marketing and selling.

2.3 Consumer Acceptance Test

The purpose of the sensory assessment is to determine the level of customer approval of the product based on its look, scent, taste, flavor, crispiness, and general acceptance. The hedonic test had been used to assess the sensory qualities of the Keliball. There were 30 untrained panelists for the sample tasting in this study. The extremes "very dislike" and "extremely like" were attached to a hedonic 9 scale. For the panelists to choose the most popular Keliball variations based on appearance, aroma, taste, flavor, and acceptance, there are four different variations available. The panelist was urged to carefully study the instructions, which were put in a given Google form, to avoid misunderstandings. Each score card's results were written down and entered into Microsoft Excel to determine the mean score and create a chart illustrating which product variations the panels preferred.

3. FINDINGS

3.1 Keliball Characteristics

Freshwater fish are used to make spherical fish balls known as Keliballs. Because of the catfish's colour, it has been slightly dimmed. The Keliball has a cohesive, chewy, and springy texture. 5 lumps of Keliball, each weighing 15 grammes, are contained in a single package. The weight of one pack is 75 grammes. The vacuum pack of Keliball is the package that we recommend.



Figure 1. Keliball.



Figure 2. Keliball packaging and design

3.2 Consumer acceptance

Consumer acceptance are measure by the appearance, flavor, texture, and aroma of the product given. Control is represented for Chub mackerels Fishball. Variation 1 is for Keliball that is made from corn flour, variation 2 is for soft flour Keliball while the strong flour Keliball is for the variation 3. Table 2 shows a sensory evaluation mean score of different variations of Keliball.

Table 2. A mean score sensory evaluation of Keliball.

Attributes	Control	Variation 1	Variation 2	Variation 3
Appearance	6.2	7	7	7.3
Flavor	6.7	7.9	5.8	6.5
Texture	6.9	6.6	5.9	6.3
Aroma	6.6	6.7	5.8	6.1
Overall Acceptability	6.7	7.1	6.1	6.4

4. DISCUSSION

The sensory evaluation was performed by 30 panels. Each panel was given four samples and each sample was labeled with three-digit code. The panel needs to evaluate appearance, flavor, texture, and aroma of the product given. Control is represented for Chub mackerels Fishball. Variation 1 is for Keliball that is made from corn flour, variation 2 is for soft flour Keliball while the strong flour Keliball is for the variation 3. Table 2 shows the mean score for the three variations of keliball with one control. Based on the mean score table, the Variation 1 which is Keliball that is made from corn flour got the highest score for flavor, texture, and high score in appearance and aroma. This innovative product is created with four flavors to identify which flavors are more likely to be others' favorites. The result showed a difference preference between the most preferable and less popular flavor among the respondents. From the result also, the respondent can conclude that variation with adding catfish with corn flour is most preferable among the variations to obtain others acceptance.

5. NOVELTY & RECOMMENDATION

Fish balls are rounded meatballs made from fish paste which are then boiled or deep fried. Similar in composition to fishcake, fish balls are often made from fish mince or surimi, salt, and a culinary binder such as tapioca flour, corn, or potato starch. As we know, there are many fish ball products of different brands in the market. Traditionally, wolf herring (ikan parang) or Spanish mackerel (ikan tenggiri) is used to make fish balls. However, for those of us who don't have access to either or want to taste an unfamiliar taste of fish ball, any type of white fish will do the job perfectly; tilapia, bass, catfish, grouper or cod. The tastier the fish, the tastier your fish balls. Here, our product will use Catfish as the main ingredient. The name catfish actually refers to several species of mostly freshwater fish. Catfish also is an inexpensive, mild-flavored fish and doesn't taste very fishy. For many people, the difference in flavor between saltwater and freshwater is the most crucial factor. Saltwater fish have a saltier, "briny" flavor, which makes sense because they retain more salt. Freshwater fish, on the other hand, is gentler and lacks a saline flavor. That's why we choose to make a freshwater fish ball because of their better taste and affordability. Other than that, according to Mstar (2020), Ketua Pengarah Perikanan, Datuk Ahamad Sabki Mahmood, he said that the production of salt water fish has reached a fairly high level and we cannot add more even though the population is increasing. We need to give new options to Malaysians who are too dependent on saltwater fish. By producing a freshwater fish, we can help in introducing this type of fish to the community. The recommendation that we can improved more our KeliBall is making sure the bones inside the meat are has mixer nicely. This is because the panel stated that he can still feel the fish bones in our KeliBall. Besides that, the flavors from the catfish are still strong after boiled or fried. In this problem, we can improve with putting some ginger and blackpepper to reduce the strong flavor of freshwater fish. KeliBall is available and safe for all ages. This product is also suitable for those who love to try something new in their menu rather than using simple fishball in the market. This KeliBall can be into the marketing which is in consumer stapler. Consumer stapler is one of sector markets which defined as the goods that needed in their daily lives.

6. CONCLUSION

In conclusion, Keliball is another form of fishball that gives a unique taste of freshwater fish to people out there. This product is available and safe for all ages. This product is also suitable for those who love to try something new in their life too.

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