

Improvement of Pempek Production Skills for People of Javanese Descendants in Sumber Rahayu Village, South Sumatera

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Abstract. Pempek is a food that contains a lot of protein from fish meat in the form of a homogeneous protein gel, white in color, chewy and elastic texture. Improvement of pempek production skills for people of Javanese descendants in sumber Rahayu Village, south Sumatera can to be a provision for the community as a side-home business in the midst of economic difficulties due to the Covid 19 pandemic. The methods in this activity are survey to get 15 person participants, pre-test and post-test of knowledge participant, discussion, demonstration producing of pempek and organoleptic test. Before training, a number of 53.8% of participants had ever made pempek and 38.5% of participants had knowledge about nutritional value of pempek. The average pre-test score is 38 points while the post-test score is 96 points. This shows that there is an increase in the knowledge and abilities of participants before and after being given the training. The average participant's assessment of the color, taste, and aroma of pempek is between 2.54 - 2.67. This shows that the participants like the color, taste, and aroma of pempek.

Keyword: Pempek, Snakehead Fish, Community Service, Making Pempek

Abstrak. Pempek merupakan bahan pangan yang banyak mengandung protein dari daging ikan dalam bentuk gel protein yang homogen, berwarna putih, tekstur kenyal dan elastis. Peningkatan keterampilan produksi pempek bagi masyarakat keturunan Jawa di Desa Sumber Rahayu, Sumatera Selatan dapat menjadi bekal masyarakat sebagai usaha sampingan di tengah kesulitan ekonomi akibat pandemi Covid-19. Metode dalam kegiatan ini adalah survey dengan jumlah peserta 15 orang, pre-test dan post-test pengetahuan peserta, diskusi, demonstrasi pembuatan pempek dan uji organoleptik. Sebelum pelatihan, sebanyak 53,8% peserta pernah membuat pempek dan 38,5% peserta memiliki pengetahuan tentang nilai gizi pempek. Rata-rata skor pre-test adalah 38 poin sedangkan skor post-test adalah 96 poin. Hal ini menunjukkan adanya peningkatan pengetahuan dan kemampuan peserta sebelum dan sesudah diberikan pelatihan. Rata-rata penilaian peserta terhadap warna, rasa, dan aroma pempek adalah antara 2,54 - 2,67. Hal ini menunjukkan bahwa peserta menyukai warna, rasa, dan aroma pempek.

Kata Kunci: : Pempek, Ikan Gabus, Pengabdian Kepada Masyarakat, Pembuatan Pempek

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1. Introduction

Pempek is a food that contains a lot of protein, especially animal protein sourced from fish meat in the form of a homogeneous protein gel, white in color, chewy and elastic texture [1]. Pempek is made from several ingredients such as ground fish meat, tapioca flour, water, salt, and spices as a flavor enhancer. Pempek is processed in several stages, such as grinding fish meat, mixing ingredients, forming and cooking pempek [2]. There are also various forms and types of pempek, such as pempek lenjer, pempek ship sub, pempek pastel, pempek tofu, pempek crackers, pempek lenggang, and pempek ada'an [3].

The main nutritional content of pempek is protein, fat and carbohydrates proportionally depending on the ratio of fish and flour, tapioca and the type of fish used [4]. In general, the fish used come from freshwater fish and marine fish. Freshwater fish that are often used include belida fish (*Notopretus chilata*) and snakehead fish (*Ophiocephallus striatus*), while the marine fish used are mackerel (*Cymbium commersoni*), machete fish and snapper. In principle, all freshwater and marine fish can be used as ingredients for making pempek, but marine fish smell more fishy. This is due to the fact that Palembang City is far from sea access so that the distribution chain becomes longer and longer and affects the freshness of fish meat and is more fishy. This fishy smell is caused by the biochemical reaction of the decomposition of protein and fat in fish into amino acids and free fatty acids. One of them is trimethylamine. This is what causes sea fish meat to be fishier than freshwater fish meat obtained directly in the waters of South Sumatera [5].

As a traditional typical food of Palembang, South Sumatra, which is favored by various market segments, pempek has an economical value. Even pempek has been able to compete in the international market, as evidenced by the existence of pempek export activities to various countries. Based on the news release from BSN [6], starting in 2020, frozen pempek will be exported to Malaysia in as many as 13 containers as a first step. Thus, the opportunity for pempek to become a source of income for the community is getting bigger. Pempek quality requirements according to SNI 7661:2013 [7].

The COVID-19 pandemic that began in December 2019 has crippled the Indonesian economy, including the people in Sumber Rahayu Village, Gelumbang District, Muara Enim Regency, South Sumatra. The majority of the people in the village are of Javanese descent who migrated to Sumatera. Although he has lived in South Sumatra for a long time, most local residents have not had the ability to produce pempek with selling standards.

Therefore, servants need to do community service (PKM) to improve the skills of making pempek for residents of Javanese descent in Sumber Rahayu village. This kind of service has never been done in the village. These skills are expected to be a provision for the community as a side-home

business in the midst of economic difficulties due to the Covid 19 pandemic. Furthermore, Pempek products produced will be marketed both online and offline.

2. Method

Community service activities have been carried out for 15 participants, housewives in Sumber Rahayu Village, Rambang District, Muara Enim Regency, South Sumatra Province.

The methods used in this activity are (1) survey, conducted to select and determine the location of the implementation of activities and activity participants, (2) pre-test knowledge participant about ingredients and pempek processing, (3) explanation and discussion, the servant gave lectures on knowledge of the ingredients for making pempek and knowledge of food and pempek nutrition, (4) grouping, the training participants were divided into 3 groups, each group consisting of 5 women, (5) demonstration of pempek processing, participants pay attention to the practical steps of making pempek, and (6) organoleptic test, participants were asked to give an assessment of the taste, aroma, and color of the pempek produced. Post-test or evaluation knowledge of participants about ingredients and pempek processing.

2.1 Materials and Tools

Pempek processing ingredients are 3.500 g snakehead fish, 3.500 g tapioca flour, 500 g fine salt, 500 mL water. The tools used are pre-test and post-test sheets, pen, plastic basin, stove, cutting board, pan, blender, cold, orange juice, slicer, sieve, knife, and small bowl.

2.2 Topics of Training

The topics in the training are as follows (1) knowledge of pempek ingredients, (2) knowledge of pempek processing.

2.3 Participants

There 15 women and residents of Sumber Rahayu Village, Rambang District, Muara Enim Regency, South Sumatera.

2.4 Pempek Processing Steps

The ingredients were weighed: 1000 g of tapioca flour, 1000 g of snakehead fish meat, and 2.5% (25 g) of salt by weight of tapioca flour. Water is prepared as much as 50% (500 ml) of the weight of tapioca flour. Ingredients such as salt and water are mixed evenly, which is referred to as the first dough. The first dough is added tapioca flour little by little while stirring slowly until evenly distributed and the ingredients can be formed and are referred to as dough 2. The dough 2 was weighed 20-25 g for small "lenjer pempek". A small-long lenjeran was formed with a diameter of 2 cm and a length of 6 cm, and then cooked by boiling for 15-20 minutes until pempek floats. Then, pempek was removed and drain at room temperature for 20 minutes.

3. Results and Discussion

Community service was carried out in Sumber Rahayu Village, Rambang District, Muara Enim Regency, South Sumatra Province. The selection of Sumber Rahayu Village as a location for community service activities is based on the number of people, especially women of productive age. Most of the residents of Sumber Rahayu Village are of Javanese ethnicity and do not have the knowledge and skills to make empek-empek. The number of training participants was 15 people.

3.1 Participants

In this community service activity, pempek is made using snakehead fish meat as shown in Figure 1. According to Kusmini et al., [8], snakehead fish contains 20 g of protein, 1.5 g of fat, 0.2 g of carbohydrates, 1.3 g of minerals, and 77 g of water. The nutritional value of pempek according to the Dirjen Kesehatan Masyarakat [9] can be seen in Table 1.



Figure 1. Meat Snakehead Fish

Table 1. Distribution of elderly people based on nutritional status

Compotitions	Content (g)
Protein	7.2
Fat	1.2
Carbohidrate	33.4
Moisture	56.3

Source : *Dirjen Kesehatan Masyarakat, 2017

Furthermore, community service activities are in the form of pre-test, material delivery, practice, organoleptic testing and post-test. Before delivering the material, the training participants were given a pre-test to measure the knowledge and abilities of the participants before being given the training as initial data to see the impact of community service carried out by lecturers and students on the knowledge and abilities of participants.

Lecturers who do community service deliver material on pempek related to the definition, nutritional value, economic value, techniques for selecting and preparing ingredients, processing methods and how to make pempek practices. Participants listen and pay attention to each material presented, and they have two-way interactive discussions during the material. This is an indication

that participants are interested in the material and topic of discussion. Next, all participants practiced how to make pempek in groups like in Figure 2. Each group consists of a companion and 7-8 participants. Then the participants made an assessment of the pempek produced by tasting the pempek and filling out a questionnaire sheet (like, somewhat like, and dislike) as an organoleptic test.



Figure 2. Pempek Making Practice

3.2 Participants

The results of organoleptic tests on the color, taste, and aroma of pempek are as shown in Table 2.

Table 1. Participants' Organoleptic Test Results on The Color, Taste, and Aroma of Pempek

Product codes (Sample)	Color	Taste	Flavor
101	2.67	2.60	2.73
102	2.60	2.40	2.47
103	2.73	2.63	2.60
Total	8.00	7.63	7.80
Average	2.67	2.54	2.60

Table 2 shows that the average participant's assessment of the color, taste, and aroma of pempek is between 2.54 - 2.67. The assessment score given by the participants is close to 3. This shows that the participants like the color, taste, and aroma of pempek. Novianti, et al. [10] states that the taste of food products comes from the ingredients in their composition and can change as a result there is a process processing such as additives, seasonings and cooking techniques. Pempek preservation naturally so that it can be distributed to remote consumers can use vacuum packaging or the edible coating technique with cooking oil, tapioca or chitosan. According to Pitayati et al. [11] Soaking pempek in chitosan solution for 20 minutes can extend the shelf life of up to more than 3 days with the sensory quality that is most preferred by consumers. The results of the research by Wicaksono et al. [12] show that there are several factors that influence consumers in

the decision to buy pempek, namely are (1) quality product and processing hygiene, (2) affordable prices, (3) promotions based on offline and online promotions, (4) attractive arrangement of places.

3.3 Evaluation of Participants' Knowledge (Pre-test and Post-test)

Participants were asked to fill out a pre-test sheet before being given training materials and practice. At the end of the activity, participants' knowledge and abilities were re-evaluated by post-test. This training uses a Single Group Design with Pre-test – Treatment- Post Test. Pre-test and post-test need to be done as an assessment tool to measure the success of learning progress that is concise and effective [13]. The knowledge and understanding of participants about pempek before and after the training is presented in Figure 3.

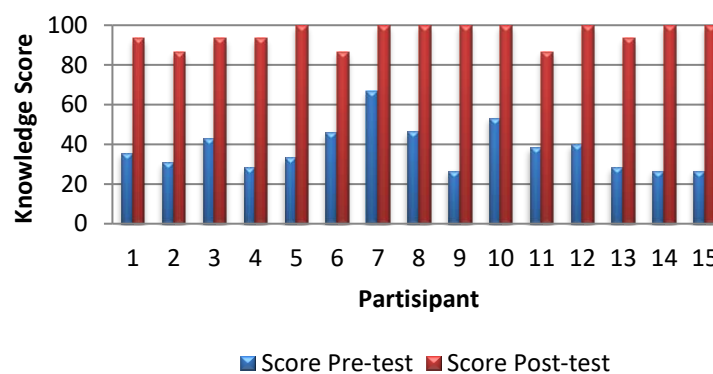


Figure 3. The score of knowledge and understanding of participants before (Pre-test) and after (Post-test) is given training

In the picture above, it can be seen that there is a very significant difference in the pre-test and post-test scores. The average pre-test score is 38 points while the post-test score is 96 points. This shows that there is an increase in the knowledge and abilities of participants before and after being given the training. Thus, community service in the form of training in making pempek carried out in Sumber Rahayu Village can be said to be successful.

4. Conclusion

Participants can actively participate in training activities. Prior to the training, 100% of participants were familiar with pempek and its ingredients and 92.3% of participants knew how to make pempek. However, only 53.8% of the participants had and could make pempek. Knowledge about the nutritional value of pempek is very low. Only 38% of the participants had knowledge about the nutritional value of pempek-Participants' knowledge and abilities have increased after being given training. The average score of the pre-test was 38 points and the post-test was 96 points. The pre-test scores ranged from 27-67 points while the post-test scores ranged from 87-100 points. Participants already know and understand the proper manufacturing of

pempek. Therefore, it is recommended to form a pempek business group. If possible, you can open an individual business with the guidance of the Sumber Rahayu Village government or related parties.

REFERENCES

- [1] Purwasih, R., Rahayu, W. E., and Fathurohman, F. "The Effect of Addition of Chicken Feet and Neck Bone Flour towards Nutritional Value of Cookies". *IOP Conference Series: Earth and Environmental Science*, Vol. 372. No. 1, pp. 0–5. <https://doi.org/10.1088/1755-1315/372/1/012045>. 2019.
- [2] Karneta R., Rejo A., Priyanto G dan Pambayun R. "Analisis kelayakan Ekonomi dan Optimasi Formulasi Pempek Lenjer Skala Industri, [Economic Feasibility Analysis and Industry Scale Pempek Lenjer Formulation Optimization]". *Jurnal Pembangunan Manusia*. Vol. 4, No. 3, pp. 264-274. 2013.
- [3] Alhanannasir, Amin R., Daniel S., and Gatot P. "Karakteristik lama masak dan warna pempek instan dengan metode freeze drying, [Characteristics of cooking time and color of instant pempek using freeze drying method]". *Jurnal Agroteknologi*. Vol. 12, No. 2, pp. 158-166. 2018.
- [4] Putra TW. Pemeriksaan Kuantitatif Senyawa Boraks Pada Bakso Ikan Yang Dijual Di Pasar Kranggan Kecamatan Jati Sempurna Kota Bekasi, [Quantitative Examination of Borax Compounds in Fish Meatballs Sold at Kranggan Market, Jati Perfect District, Bekasi City]. http://library.thamrin.ac.id/index.php?p=show_detail&id=1654. 2011.
- [5] Hasanah F, Lestari N, Adiningsih Y. "Pengendalian senyawa trimetilamin (TMA) dan amonia dalam pembuatan margarin dari minyak patin. Warta Industri Hasil Pertanian, [Control of trimethylamine compounds (TMA) and ammonia in the manufacture of margarine from catfish oil. Agricultural Product Industry News]". Vol. 34, No. 2, pp. 72-80. DOI: <http://dx.doi.org/10.32765/warta%20ihp.v34i2.3566>. 2017.
- [6] Anonim. Mulai 2020 Palembang ekspor pempek ke Malaysia, [Starting in 2020, Palembang will export pempek to Malaysia]. <https://www.bsn.go.id/main/berita/detail/10733/mulai-2020-palembang-ekspor-pempek-ke-malaysia>. 2019.
- [7] Standardisasi Nasional Indonesia [SNI]. 2013. SNI 7661:2013 tentang pempek rebus beku. Badan Standardisasi Nasional [BSN] .
- [8] Kusmini II., Gustiano R., Prakoso VA., Ath-thar, MHF. Perbenihan dan budidaya ikan gabus, [Snakehead fish seeding and cultivation]. Jakarta: Penebar Swadaya, 2016.
- [9] Dirjen Kesehatan Masyarakat. 2017. Tabel Komposisi Pangan Indonesia. Jakarta. Kementerian Kesehatan RI.
- [10] Novianti E, Suparmi, Desmelati. "Studi Formulasi Ikan Jelawat (*Leptobarbus haovenii*) dengan Penambahan Tepung Sagu Berbeda terhadap Penerimaan Konsumen, [Study of Formulation of Jelawat Fish (*Leptobarbus haovenii*) with the Addition of Different Sago Flour on Consumer Acceptance]". *Jurnal Online Mahasiswa Fakultas Perikanan dan Ilmu Kelautan*. Vol. 1, No. 6, pp. 1- 10. 2019.
- [11] Pitayati PA., Herpandi, Lestari S., Ulfadillah SA., "Pempek Soaking with Chitosan Solution as Edible Coating and Its Effect on Shelf Life". *Jurnal Fishtech* Vol. 10. No.1, pp. 35-52. 2021.
- [12] Wicaksono OA., Sunaryanto LT. "Faktor yang mempengaruhi konsumen mengambil keputusan dalam pembelian pempek, [Factors that influence consumers to make decisions in purchasing Pempek]. *Jurnal Agroinfo galuh*. Vol. 8, No. 3. 2021.

- [13] Rukminingsih, Rochmawati P., Rukmi NS. “Integrating Declarative and Procedural Knowledge on Grammar through E-Portfolio Assessment”. *Jurnal Edukasi*. Vol. 6, No.1. 2020.