

INOVATION OF PANNACOTA DAIRY FREE

Farrah¹⁾, Sri Indrayanti²⁾, Frisiska³⁾, Latif⁴⁾

¹⁾ Pengelolaan Konvensi dan Acara /Fakultas Pariwisata dan Budaya, Universitas Pertiwi

²⁾ Perhotelan /Fakultas Pariwisata dan Budaya, Universitas Pertiwi

³⁾ Pengelolaan Konvensi dan Acara /Fakultas Pariwisata dan Budaya, Universitas Pertiwi

⁴⁾ Perhotelan /Fakultas Pariwisata dan Budaya, Universitas Pertiwi

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ABSTRACT

Purpose *Porang flour from porang tubers (Amorphophallus muelleri Blume) has a soluble food fiber content whose structure and function are similar to pectin called glucomannan. The content of glucomannan contained in porang tubers is very large namely as a gelling agent, which can be one of the alternative thickeners or stabilizers in solution and dough and can replace gelatin milling on pannacotta cake vegan. This research aims to find out the usefulness and success rate of porang flour in replacing gelatin in the manufacture of vegan Pana cotta Cake. It also aims to find new alternative gelatin substitutes on the market that many use pig base materials in the manufacture of gelatin*

Design/methodology/approach —. *This research uses qualitative descriptive methods, intending to know the process of making Pana cotta Cake with porang flour and knowing the quality of Pana cotta Cake with gelatin substitution with porang flour from perspective experts in the field of food product to conformity with panna cotta cake standards.*

Not only that, the glucomannan content in porang tubers can also be an alternative thickener or stabilizer in solutions and doughs and can replace the use of gelatin

Findings — *Based on the overall results of the study, reviewed from the quality aspects of the foods studied, the researchers concluded that Panna Cotta Vegan with porang flour was favored by the panelists and had good value. Then, porang flour proved to be a substitute alternative to gelatin in the manufacture of Panna Cotta especially Panna Cotta Vegan.*

Practical implications — *For advice, it should be noted during the process of making Panna Cotta which is stirred slowly until boiling, then be sure to discard the froth that is on top of the panna cotta and use the technique of placing a spoon on top of the mold in an upside down position to avoid creating froth. For further research, researchers hope to be able to develop a wide range of processed products by using additional ingredients of porang flour and focus on raising awareness using existing local potential*

Keywords — *Food Innovation, Pannacotta, Dairy free*

Paper type — *Study Experiment*

ABSTRAK

Tepung porang dari umbi porang (Amorphophallus muelleri Blume) memiliki kandungan serat pangan larut yang struktur dan fungsinya mirip dengan pektin yang disebut juga glukomanan. Kandungan glukomanan yang terdapat dalam umbi porang sangat besar yaitu sebagai gelling agents, yang mampu menjadi salah satu alternatif bahan pengental atau stabiliser dalam larutan dan adonan dan bisa menggantikan penggunaan gelatin pada Pana cotta Cake vegan. Dalam penelitian ini, bertujuan untuk mengetahui kegunaan dan tingkat keberhasilan dari tepung porang dalam menggantikan gelatin dalam pembuatan Pana cotta Cake vegan. Hal ini juga bertujuan untuk menemukan alternatif baru bahan pengganti gelatin yang ada dipasaran yang banyak menggunakan bahan dasar babi dalam pembuatan gelatin. Penelitian ini menggunakan metode deskriptif kualitatif, dengan tujuan untuk

mengetahui proses pembuatan Panna cotta Cake dengan tepung porang, tepung porang terbukti dapat menjadi alternatif pengganti gelatin dalam pembuatan Panna Cotta terutama Panna Cotta Vegan. Diketahui agar mendapatkan hasil yang sempurna harus diperhatikan pada saat proses pembuatan Panna Cotta yaitu dengan diaduk secara perlahan hingga mendidih, lalu pastikan untuk membuang buih yang ada di atas Panna Cotta dan menggunakan teknik menempatkan sendok diatas cetakan dengan posisi terbalik untuk menghindari terciptanya buih. Untuk penelitian selanjutnya peneliti berharap untuk dapat mengembangkan berbagai macam olahan produk dengan menggunakan bahan tambahan tepung porang dan fokus untuk menumbuhkan kesadaran menggunakan potensi lokal yang ada.

Kata Kunci : *Inovasi Makanan, Panacota, Bebas olahan susu*

PENDAHULUAN

Porang tuber is one of the plants that grows a lot in Indonesia. Porang flour contains a very important compound, namely glucomannan. Porang (*Amorphophallus oncophyllus*) is a local plant developed in Indonesia which belongs to the Araceae family and is a shrub (herb) plant that grows bulbs in the soil and forms carbohydrates. Porang is a type of tuber plant that has the potential and prospects to be developed in Indonesia. Besides being easy to obtain, this plant can also produce carbohydrates and high harvest levels. Porang can be used as an ingredient in glue, jelly, noodles, pasta, cosmetics, and bread. One of the efforts to increase the economic value and quality of porang tubers is still new in Indonesia, so Porang can be processed into flour. Porang flour can be used as a functional food that is useful for suppressing blood glucose levels while reducing blood serum cholesterol levels, namely foods that have a low glycemic index and have hypoglycemic and hypocholesterolemic functional properties.

Not only that, but the glucomannan content in porang tubers can also be an alternative thickener or stabilizer in solutions and doughs and can replace the use of gelatin. Several studies state that the gelatin production industry still uses a lot of pork skin, especially in America. Why is pork skin

the basic ingredient that is still widely used it remembers that leather is the main raw material for making gelatin. Most of the raw materials for producing gelatin in producing countries in the world come from pig skin (46%), then cowhide (28%), cow bones (24%), and other materials (2%). conflicting or deemed unsuitable for countries with Muslim-majority citizens, one example is Indonesia. In Indonesia alone, 90% of the gelatin supplier is obtained from imports from other countries, including China, Australia, and several countries from the European and American continents. Not only for reasons of belief, gelatin is made from animals, it is also a reason for some people who are vegetarians who don't eat foods that contain animals so they can't consume gelatin like others.

There are still many foods that use gelatin as the main ingredient, one of the foods that use gelatin is a dessert from Italy, namely Panna Cotta Cake. Panna Cotta is a dessert product originating from Italy which is made using cream and milk cooked with other ingredients such as gelatin and sugar and served cold. Panna Cotta has a character that resembles pudding with gel properties that are softer but still sturdy and can maintain their shape.

The nature of Panna Cotta which can melt in the mouth makes this product different from other types of desserts. Gelatin in Panna Cotta acts as a gelling agent. Stabilizers are

gelling agents or thickening agents widely used in the food industry to improve quality. In this study, the authors replaced the gelatin ingredient in the manufacture of Panna Cotta Cake using Porang Flour, to create a new product that is an alternative to gelatin and can be consumed by people who follow a vegan diet and an alternative for vegans to be able to consume Panna Cotta Cake which is generally made processed animal.

Porang (Umbi Iles-Iles)

The porang plant (*Amorphophallus* sp.) is a plant that lives in tropical forests and is widely found in Indonesia. Plants that have a biological taxonomic classification with Kingdom: Plantae Order: Alismatales Family: Araceae Subfamily: Aroideae Nation: Thomsonieae Genus: *Amorphophallus* Species: *A. Konjac*. Porang tubers contain a lot of glucomannan and are known as Konjac Glucomannan (KGM). KGM is widely used as traditional food in Asia such as noodles, tofu and jelly.

Porang Flour (Porang Flour)

Porang flour from porang tubers (*Amorphophallus muelleri* Blume) contains soluble dietary fiber which is similar in structure and function to pectin which is also called glucomannan. The content of glucomannan contained in porang tubers is very large, namely as much as 67%. KGM extraction and purification methods have been widely used. KGM can be extracted either by mechanical means (dry process) or wet way (chemical process). The dry process is carried out by grinding the sliced tubers into konjac flour and then purifying it by wind-sifting (Parry, 2010). Konjac flour, also known as glucomannan flour, is a soluble dietary fiber. In (Irene, 2010) states that glucomannan is known as food without calories in Japan and China because it cannot be hydrolyzed by digestive enzymes in the human.

Gelatin

Gelatin is a natural product obtained through partial hydrolysis of collagen from animal skins and bones (Duconseille et al., 2015; Etxabide et al., 2015). The use of gelatin is very wide. It is estimated that around 59% of gelatin produced worldwide is used for the food industry, 31% for the pharmaceutical industry, 2% for the photography industry, and about 8% for other applications (Mohebi and Shahbazi, 2017). So far, Indonesia's need for gelatin has been imported from several countries such as France, Japan, India, Brazil, Germany, China, Argentina and Australia (BPS, 2015). Gelatin imports in 2014 reached 255,822 kg with a value of US\$ 2,059,329 (BPS, 2015). One important aspect that needs to be considered is its halal status for Muslims.

Panna Cotta Cake

Panna Cotta has a character that resembles pudding with gel properties that are softer but still sturdy and can maintain their shape. Thick cream has special characteristics when it is processed with other ingredients into a dish. Bittman (2012) explained that the presence of higher fat than fat in milk makes cream richer in taste, and slightly savory and makes the texture of processed products thicker but softer.

Food Quality

According to West, Wood, Harger, Gaman, Sherrington, and Jones in Margaretha and Edwin (2012.1) in general, the factors that affect food quality are Color, Appearance, Portion, Shape, Temperature, Texture, Aroma, Level of Maturity and Taste.

Vegan

Vegans are often referred to as total vegetarians or pure vegetarians. Vegans are people or groups who do not consume or eat any animal products. In addition, they also avoid honey and animal products such as animal skins or cosmetics that contain animal products.

Food Processing Engineering

The definition of food processing is making raw food ingredients cooked through a heating process. By definition, food processing can be interpreted as a process of heating food so that it becomes more palatable and easy to chew, changing the appearance of the food, and killing bacteria that are detrimental to health.

Product Innovation Purpose

1. Quality Improvement

With these new features, they have more advantages than the previous ones, in other words, the products offered with additional innovations will increase their superiority and quality compared to before.

2. Meet Customer Needs

These customer demands force business owners to improve. To create the fulfillment of customer needs for new products

3. Creating New Markets in the Community

Another goal of product innovation is to create new markets for the community so that they can attract people to buy the new product. Sometimes people want to try when they are interested in innovative products that are not yet on the market.

4. Development and Application of Knowledge and Insights

Product innovation also aims to develop and apply new knowledge. To make innovations in a product, various kinds of up-to-date knowledge are needed along with scientific developments so that the latest innovative products are created using new materials which have never been on the market.

5. Changing the Product

What is being done here is that producers make efforts to change old products with new creations so that a product that is different from the previous product is created.

Benefits of Product Innovation

Developing a new product can make producers more competitive, and if the product is accepted in the market it will add positive benefits to the producer. Producers who often innovate their products will have advantages over their competitors, and can also develop themselves so that they can be recognized in the general public.

Product Innovation Type

According to Kotler and Bes in Aulia, namely approaches regarding the development of new products based on fixed market assumptions, namely:

a. Modulation-based innovation Modulation-based innovation

Involves changing a basic characteristic of a product or service, by increasing or decreasing that characteristic. In general, refers to the functional or physical characteristics. In modulation innovation, the basic characteristics of the product need to be increased and decreased.

b. Size-based innovation Size-based innovation

Launching a new product into the market without changing anything but the volume.

c. Packaging-based innovation

The way a product is packaged can change consumers' perceptions of the benefits, functions, or reasons for consuming a product or service. 11 Kotler and Bes, *Letteral Marketing*, (Jakarta: Erlangga, 2004), 31. 22

d. Design-based innovation Design-based innovation

Innovation is where the product, container or packaging, and size are sold the same, but the design or appearance is modified.

e. Innovation based on the development of complementary materials

Complement-based innovation involves adding complementary materials or additional services to the basic product or service.

f. Effort reduction-based innovation

Innovation based on reduced effort does not change products or services but increases the size of the market. Such an innovation increases value by lowering the denominator, not increasing the quantifier

Panacotta Cake

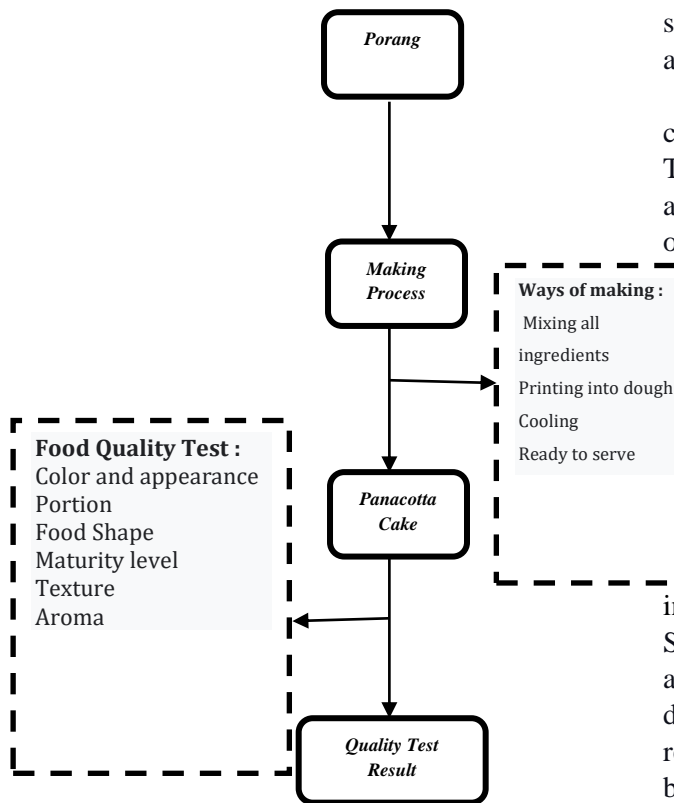


Figure 1. Experimental Process

*Korespondensi Penulis:

E-mail: farrahmuniff@gmail.com

METODE PENELITIAN

Sugiyono (2012: 291) reveals that "... the experimental research method can be interpreted as a research method used to look for the effect of certain treatments on others in controlled conditions". In this experiment, researchers will substitute the main ingredient of gelatin with porang flour as a thickening agent where researchers control the product according to the storage process so that it affects texture, taste, and appearance. Based on the theory that has been explained, it can be concluded that the type of research used by

the authors in this study was a qualitative descriptive study to know the quality of adding porang flour to the Vegan Panna Cotta Cake dough.

Bungin, (2011: 121) defines observation as a process of selecting, changing, recording, and coding a series of behaviors and situations concerning organisms in situ, according to empirical goals.

This research using three method for collecting data, first is doing the observation. There are seven characteristics in observation activities, and they become the process of observation stages. The stages or processes of observation include selection, provocation, ordering, and encoding, tests of behavior in situ, and for empirical purposes. This observation technique is used to identify and document all processes related to making Panacotta Cake using Porang Flour.

The second one this research using interview for get data. According to Joko Subagyo (2011: 39), an interview is "an activity carried out to obtain information directly by asking questions to the respondents. an interview means face-to-face between the interviewer and the respondent, and the activity is carried out orally". In this case, the author conducted interviews with several experts or experts related to the culinary world with a specialization in the field of pastry series

And for complete this research doing some of literature study. Literature study is research by researchers by collecting several books, magazines, leaflet, which are related to the problem and research objectives. The book is considered a source of data that will be processed and analyzed as many historians, literature, and language experts do according to Danial A.R (2009. in Verry Hendra 2012.48).

This research is based on studies conducted by researchers collecting from various sources and literature to become the theoretical basis for analysis in the research conducted

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Hasil Penelitian

1	Bowl	1
2	Hand glove	1
3	Scale	1
4	Measuring cup	1
5	Steamer	1
6	Blender	1
7	Spoon	1
8	Stove	1
9	Piping bag	1
10	Knife	1

Source: Data Processed 2020

HASIL DAN PEMBAHASAN

Panna Cotta Cake-Making Process

The process of making Panna Cotta Cake by replacing gelatin with porang flour consists of several stages, namely:

1. The materials used

The main ingredient in making Panacotta by replacing Gelatin with Porang Flour is, of course, Porang Flour with other additional ingredients such as:

Table 1 Composition of Vegan Panna

Cotta Cake		
No	material name	Unit
1	Coconut Milk	400 ml
2	Sugar	150 gr
3	Vanili Extract	1 tsp
4	Porang Flour	7 gr
5	Lemon Water	½ tsp

Source: Data Processed 2020

The tools used

The tools used in making Panna Cotta Cake with Porang Flour are:

Table 2 Manufacturing Tools of Vegan Panna Cotta

No	Tools used	Number of tools
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Experimental procedures carried out

Table 3 Experimental Trial Procedure of Vegan Panna Cotta Cake

No	Method	Number	material	Explanations and Pictures
1	Preparation	be		Weigh all the ingredients to be
2	mix	400 ml	Coconut milk	Mix everything into the pan. Heat over low heat, stirring the mixture

				until it boils.
		150 Gram	sugar	
		1 tsp	Vanili Extract	
		½ tsp	Lemon Water	
3	chill			Refrigerate the dough until it is room temperature or warm
4	prepare	7 Gr	Porang Flour	
5	pour		Porang Flour	Mix the Porang flour into the dough. Stir until the Porang flour dissolves into the dough. Make sure nothing is lumpy.
6	print		dough	Put it in the prepared mold and chill the paacotta in the refrigerator for at least 4 hours to get the right texture.

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SIMPULAN

After conducting the analysis and discussion in the previous chapter, in this chapter conclusions and suggestions will be presented for improvement in the future. Some conclusions from what has been analyzed and researched are as follows:

1. Porang flour has the potential to be an alternative to food additives that function as thickeners, including gelatin.
2. Porang flour has a variety of ingredients and is very suitable for consumption by people who are following a healthy diet, especially for those who are reducing their consumption of foods containing glucose and high in fiber.
3. Quality of Vegan Panna Cotta Cake using porang flour has almost the same quality as Pana Cotta in general which uses milk and whipped cream. This was obtained from the experts who did the testing.

4. Contains absolutely no animal elements, making Vegan Panna Cotta highly recommended for all those who follow a vegan diet. So that you can still enjoy the panna cotta dessert without worrying about the animal content in the dessert.

Based on the overall results of the study, in terms of the quality aspects of the food studied, the researchers concluded that Vegan Panna Cotta with porang flour was liked by the panelists and had good value. Then. For further research, researchers hope to be able to develop various kinds of processed products using additional ingredients from porang flour and focus on raising awareness of using existing local potential.

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