The potential of growol as healthy traditional food: a mini review

*Nur Fitriana, I., Marwanti and Pamadhi, H.

Home Economics Postgraduate Program, Yogyakarta State University, Colombo Street no.1, Karang Malang, Caturtunggal, Depok, Sleman, Yogyakarta 55281, Indonesia

Abstract

This study aimed to describe the benefits of growol as a healthy traditional food is made from fermented cassava. Cassava is a popular and abundant nutritional food in Indonesia, and it can be used as a healthy alternative to rice due to its high carbohydrate content. Cassava is also used in the production of growol, healthy traditional food prepared through a fermentation process. Stripping, cutting, soaking (fermentation), pressing, grinding, steaming and moulding are all steps in the process of making growol. Besengek tempeh, pentho and kethak are commonly served as side dishes. In the fermentation process, lactic acid bacteria (LAB) is used, which is good for digestion and may prevent diarrhoea. Growol is useful for patients with diabetes and dyslipidemia since it contains a lot of minerals, fibre, and carbohydrates, and has a low glycemic index. In addition to its health benefits, growol is quite inexpensive, making it affordable to the general public. Growol's popularity, on the other hand, is declining, owing to young people's dislike of its sour and bland flavour. In fact, further innovations are required to increase its popularity through an efficient processing method. Growol flour, bakpia growol, and sweet growol are examples of innovative processing methods for this traditional food. This study aimed to describe the benefits of growol as a healthy traditional food.

1. Introduction

Cassava is a carbohydrate-rich traditional dish that can be used instead of rice as a source of carbohydrates. Cassava contains 60% water, 25% to 35% starch, protein, minerals, fibre, calcium, and phosphate, as well as other nutrients. Cassava has 154 calories, 36.8 g of carbohydrate, 1.0 g of protein, 0.3 g of fat, and 0.9 g of fibre. Because of its vitamins and minerals, cassava is valuable to people who suffer from anaemia and a deficiency of vitamins A and C. It also contains a low glycemcic index, a lot of soluble fibre, and probiotic potential (Roch, 2006). According to Roch (2016), cassava production in Indonesia grew from 1980 to 2016 and is expected to continue to rise in the next years. Cassava was harvested on 1.11 million hectares in 2016, with a national production of 25 million tons, resulting in a productivity level of 20.23 tons/ha. The high productivity level of cassava in Indonesia makes it one of the most important export food commodities. Cassava flour, shredded cassava, and cassava pellets are among the products exported from Indonesia. This demonstrates that cassava production in Indonesia has a lot of potential, both in terms of land area and productivity.

Cassava is a popular food in Indonesia, along with a variety of processed foods, one of which is growol (Figure 1). It is well-known as a fermented cassava-based traditional food from Kulon Progo, Yogyakarta, Indonesia. Growol has a bland or even sour flavour, depending on how long it has been fermented. Growol is an alternative to rice for the inhabitants of Kulon Progo, who eat it with besengek tempeh, pentho, and kethak. Growol is still processed traditionally and packaged in banana leaves, as it has been for centuries. Even though growol has many health benefits, the younger generation dislikes it because of its bland taste and sour flavour. Growol includes lactic acid bacteria (LAB), which can help to avoid diarrhoea and has a low glycemic index.
making it suitable for treating and preventing diabetes and dyslipidemia (Puspaningtyas et al., 2019). This review will look at the history of growol, its production method, and its health benefits of growol.

2. History of growol

Growol is a fermented cassava-based local food. Residents of Kulon Progo eat growol with besengek tempeh as a side dish, according to the Centhini book Volume 5 published in 1814. Besengek tempeh is a Kulon Progo traditional food produced with tempeh and coconut milk. Growol is also served with pentho and kethak, two more side dishes (Figure 2). Pentho is made of grated coconut, spices, and an egg that has been formed into a round shape and fried. Kethak, on the other hand, is manufactured from the material left behind following the distillation of coconut oil. Cassava, the main ingredient in this traditional food, flourishes on the arid soil of Kulon Progo, where groundwater is scarce. When there was a famine (food shortage), farmers used cassava instead of rice. Cassava is a high-carbohydrate food, which is used as the community's staple diet, along with rice. Growol's typical texture is determined by such crucial ingredients. In a nutshell, cassava has a high water content, causing it to smell and stale quickly (Ministry of Education and Culture, 2019).

3. The process of making growol

Growol is made through a four-day process that begins with soaking, then draining and crushing before steaming. Coryneform, Streptococcus, Bacillus, Actinobacter, Lactobacillus, and yeast are the bacteria involved in the soaking process. The main lactic acid bacteria, which have anaerobic, amylolytic, and fermentative qualities, develop during the fermentation process (Suharni, 1984). During the fermentation process of growol, cassava (Manihot utilissima) is washed and soaked for three days. After three days, it was thoroughly cleaned and milled. After that, the cassava was cooked and wrapped in plastic or bamboo baskets (Ministry of Education and Culture, 2019). According to the Kulon Progo Regency's Department of Agriculture and Food, the following is a general description of how to create growol. To remove cassava peel and dirt, the cassava was stripped and sliced. Cassava was washed to remove dirt and harmful chemicals, which was done by manually rubbing its texture until it was clean. After soaking it for 2-3 days in a bucket of water, it had a soft texture and a sour smell. Cleaning the cassava surface was also necessary to remove any unpleasant odours and dissolve any dangerous toxins. The following step was to press the growol to reduce the amount of water in it, resulting in a soft texture and a long-lasting product. The cassava texture was delicate and smooth after the milling process. Finally, growol was cooked for 15 to 40 mins and served in a bamboo mould on top of banana leaves. This technique necessitates a pressing step to create a dense texture (Figure 3).

4. Characteristics of growol and its processing innovation

Growol is white, has a soft texture, has a bland flavour and is wrapped in banana leaves. A fermentation process can cause a sour flavour. As a result, the younger generation dislikes growol (Luwihana and Wariyah, 2014). Therefore, to be accepted by all age groups, growol processing must be innovative. Growol flour, growol noodle, and sweet growol are examples of growol processing advances (Luwihana and Wariyah, 2014).
Growol is not the only traditional food that is good for digestion, tempeh is another traditional food that has the same benefit. Tempeh is an Indonesian traditional food made from fermented soybeans and a mould called *Rhizopus* sp. During the fermentation process, the mould produces *hyphae* that cover the surface of the soybean with white thread. *Hyphae* also produce *mycelium*, which is used to bind soybean seeds together, resulting in compact structures and solid textures (Astawan et al., 2013). According to Nugraheni (2013), in newborns and toddlers with malnutrition and diarrhoea, tempeh is simpler to digest and absorb than soybean. Giving tempeh to patients can help them gain weight and recover from diarrhoea quickly. According to Suliantari et al. (2015), who conducted a study on tempeh in Bogor, Indonesia, tempeh contains bacteria that aid in the fermentation process. Mould, yeast, and *lactic acid bacteria* are the culprits. *Rhizopus oligosporus* moulds are used in tempeh fermentation, while *Candida famata*, *Candida lusitaniae*, and *Candida pelliculosa* yeasts are also used. Furthermore, *Lactic acid bacteria* (LAB) in tempeh are *Lactobacillus plantarum I*, *L. fermentum I*, *L. brevis I*, *Lactococcus lactis* ssp *lactis* and *Leuconostoc mesenteroides* ssp *mesenteroides*.

Growol and tempeh are both traditional Indonesian foods, although tempeh is preferred and more popular than growol in terms of existential values. Rather than growol, Indonesians now eat tempeh on a daily basis. As growol production in the Kulon Progo region is very low, and its processing is still done traditionally, it is often overlooked. As a result, the topic of growol's potential as a nutritious meal should be discussed with communities that consume growol for health reasons.

### 6. Conclusion

In Indonesia, cassava is a popular food ingredient. Carbohydrates, protein, fibre, and minerals are all found in cassava. Cassava is processed into a variety of foods in Indonesia, one of which is growol. Growol is a fermented cassava-based traditional food. Growol is from the Indonesian regency of Kulon Progo. Starting with the process of stripping cassava, cutting, soaking, washing, crushing, steaming, and moulding, the process of creating growol takes four days. Growol is high in prebiotics and probiotics, which help to prevent diarrhoea. Growol also has a reduced sugar content, which is beneficial to patients with diabetes and dyslipidemia. Growol has the potential to be healthy traditional food, but due to its sour flavour and bland taste, many people dislike it. To ensure that growol is accepted by the community, various processes of processing innovation are carried out. Sweet growol, flour growol, noodle growol, and bakpia growol are all products of these innovations.
Conflict of interest
Authors declare no conflict of interest.

Acknowledgments
The authors would like to express their gratitude to Mr. Anselmus Sudirman from Universitas Sarjanawiyata Tamaniswia, Yogyakarta, Indonesia, for his assistance, advice, and revisions in the preparation of this article.

References


