





Utilization of Purple Sweet Potatoes as the Main Ingredient for Processed Lubiler Products Through Digital Marketing Techniques to Train Entrepreneurship Spirits among Students

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Abstract

Purple sweet potato has potential as a food function, especially as an antioxidant because of its purple color and other nutritional content. This research aims to produce a Lubiler product that contains antioxidants by substituting boiled purple sweet potato with chocolate. The research results showed that the best Lubiler was produced with a maximum substitution of 100% purple sweet potato. The characteristics of the Lubiler produced include aroma, taste and texture. The addition of purple sweet potatoes increases the soft texture, taste and maturity level of purple sweet potatoes. This lubricant can be a substitute for instant snacks. This lubricant is produced in-house and is more hygienic of course, so it can maintain health because the lubricant maintains cleanliness. The technique used in the Lubiler marketing process is using Digital Marketing Techniques where the promotion of this product is done using existing social media. It is hoped that this research can foster a spirit of entrepreneurship both among students and the general public.

A. Introduction

Purple sweet potato is a type of sweet potato that is often found in Indonesia apart from the white, yellow and red ones (Batubara et al., 2023; Pratiwi et al., 2023; Susanto et al., 2019). The purple sweet potato type *Ipomoea batatas* L. Poir has a fairly deep purple color in the flesh of the sweet potato, so it attracts a lot of attention. The purple color of sweet potatoes is caused by the presence of purple anthocyanin pigments which spread from the skin to the flesh of the sweet potato. This anthocyanin concentration is what causes several types of purple sweet potato to have different shades of purple (Gionte et al., 2022; Nurhidayati et al., 2022; Sari et al., 2022).

Nutritionally, sweet potatoes are generally dominated by carbohydrates which can reach 27.9% with a water content of 68.5%, while in the form of carbohydrate flour it reaches 85.26% with a water content of 7.0%. Apart from that, sweet potato flour has a higher ash content and fiber content, as well as carbohydrate and calorie content that is almost equivalent to wheat flour. This supports the use of sweet potato flour as an alternative source of carbohydrates which can be substituted for wheat products and their derivatives which have added value for health (Ambasari et al., 2009; Nurdjanah et al., 2017; Pratiwi, 2020).

The sweet potato plant (*Ipomoea batatas* L.) is a plant originating from the American continent (Ezward et al., 2019; Ziraluo, 2021). In Indonesia, 89% of sweet potato production is used as food with a consumption rate of 7.9kg/capita/year, while the remainder is used as industrial raw materials, especially sauces and animal feed. Sweet potatoes have various colors, namely white, yellow or orange and purple. Purple sweet potatoes, which have purple flesh and skin, contain quite large amounts of anthocyanin pigments. The total anthocyanin content of purple sweet potato is around 110.51 mg/100 grams (Fatimatuzahro et al., 2019).

Apart from anthocyanins, purple sweet potatoes are also a source of antioxidants and are useful for health. Purple sweet potatoes contain vitamins (A, B1, B2, C and E), minerals (calcium, potassium, magnesium, copper and zinc), dietary fiber and non-fiber carbohydrates (Lidyawati et al., 2021; Setyadi & Ninsix, 2019; Siswandi et al., 2023). One of the benefits of purple sweet potatoes is that it can control the production of the hormone melatonin produced by the pineal gland in the brain. Melatonin is an antioxidant that maintains the health of cells and the brain's nervous system, while repairing any damage. The anthocyanins contained in the tubers and skin of purple sweet potatoes have the potential to be extracted and used as natural dyes. According to their origin, dyes are divided into natural dyes and synthetic dyes. Natural dyes are dyes that are naturally found in plants and animals. Synthetic dyes are dyes that do not come from plants or animals, for example from various chemical compounds that can form a dye. The division of dyes according to their properties can be divided into acid dyes and basic dyes.

The energy available in purple sweet potato dimsum in one portion fulfills 15% of daily energy needs and is considered sufficient to be served as a snack which generally contributes 10-20% of total daily energy needs. The calculation results show that the fiber content in purple sweet potato dim sum as a snack can meet daily fiber needs of 60%. The high fiber content in sweet potatoes is a water-soluble fiber which is known to absorb excess fat or blood cholesterol. The natural oligosaccharide fiber in sweet potatoes can prevent constipation which is good for the digestive process.

The use of purple sweet potatoes in the process of making Lubilerrrr (Lumpia yam Lumer) is how to use purple sweet potato as a basic ingredient for Lumer sweet potato spring rolls. After purple sweet potatoes are processed and produce a processed food product, we will promote the product through digital marketing techniques or through the digital promotion era. Where here we can promote our products using Instagram, the Milshake website, Facebook, WhatsApp and other social media of course. As has been explained, we also use purple sweet potatoes as the main raw material for lubricants to train our entrepreneurial spirit as students. Why is this entrepreneurial spirit needed because later as students, after completing our studies, we hope that we will not only focus on what we have learned but we can also develop other businesses.

B. Research Methods

This research was conducted using experimental methods. This research aims to determine the use of purple sweet potato into a product that can be marketed. In this research there were two stages. The first stage aims to socialize the production of purple sweet potatoes, the second stage is the processing of the product. At this processing stage, researchers processed purple sweet potatoes by boiling them, then mashed the purple sweet potatoes and then placed them on lumpiah, then put chocolate on them and rolled them up, then we fried the rolled lumpiahs until they were golden yellow, then removed them and drained well. So it becomes Lubiler or melted sweet potato lumpiah.

The method used in this research is a direct experimental method in the implementation of product making by teaching How to make Lumpy Sweet Potato Lumpiah or Lubiler, after which it is photographed as documentation. The method of giving taste trials was carried out to find out the extent of its implementation as well as public interest in Lubiler production.

The main ingredient used is purple sweet potato (*Ipomoea batatas*) assisted by other ingredients such as spring roll skin, chocolate bars from the "Chocolate Colatta" brand produced by PT Gandum Mas, sweetened condensed milk from the "Indomilk" brand produced by PT Indolakto, "Refina" brand kitchen salt produced by PT Unichem Candi Indonesia, and "Fortune" brand cooking oil produced by PT Wilmar Nabati Indonesia.

C. Results and Discussion

Product Development

Purple sweet potato is one of the tuber commodities that plays a role in food diversification, which is often found in Indonesia. The purple color of sweet potatoes comes from the purple pigment anthocyanin which is a natural substance. Previous research on the processing of sweet potatoes into various products, including fructose syrup, dried sweet potato sweets, French fries, sweet potato noodles, jam, sweet potato flakes, sweet potato biscuits, reconstituted chips, sweet potato puree drinks, sweet potato yogurt sweet potato, etc. Of course, the processing of sweet potatoes that was mentioned previously is common or often found on the market.

The use of purple sweet potato (*Ipomoea batatas* L.) as the main ingredient in various products also has the advantage of high anthocyanin and water soluble fiber content so it is safe for consumption and can function as an antioxidant (Husna et al. 2013).

For now, we are will use purple sweet potatoes as one of the main basic ingredients in the process of making Lubiler (Lumpia Ubi Lumer). Here we will develop the sweet potato which we usually see only boiled or made into chips. We will make it into a preparation where we will wrap this purple sweet potato in spring roll skin and then we will put chocolate inside and it will melt later when it is fried.

The development of the purple sweet potato dimsum product concept included observations that had been previously made in the surrounding environment. After observing the environment, we interviewed street vendors or other successful traders and we saw in our environment that the product we were going to develop did not yet exist. Therefore, here we will develop this purple sweet potato which will be more attractive and look more modern by wrapping it in spring roll skin which will melt later when it is split and fried.

Production is carried out in four stages, namely preparation, processing, portioning and marketing. Material preparation is carried out by weighing materials, cutting materials, steaming materials, refining other materials with estimated time and a systematic sequence to reduce the occurrence of failures in the product manufacturing process. At the preparation stage, it is necessary to pay attention to hygiene and sanitation of the ingredients so that cross-contamination of food does not occur.

The preparation stage begins with preparing the tools according to what is needed. The next stage is weighing the ingredients according to the standard recipe. A standard recipe is a standard form of recipe arrangement, which will have the same results if used by different people so that it becomes a reference in producing a dish. Ingredients are weighed according to the standard recipe for each formulation. Ingredients that have been weighed according to recipe standards are then washed and cut as needed before processing.

Processing is the methods and techniques used in the process of changing raw ingredients into cooked ingredients so that the food ingredients are edible, taste delicious, are safe to eat, are easy to digest, and have an attractive appearance. Processing of ingredients when mashed purple sweet potatoes are prepared and then added sweetened condensed milk then just a little salt. Then, when the mashed sweet potatoes are ready, wrap them in spring roll skin and then fill them with chocolate bars. Then it is rolled and glued with wheat flour that has been added with water. Then fry the lubiler until it is brownish.



Figure 1. Ripe Lubiler

This purple sweet potato is packaged using small mica which has been labeled with a sticker. In the packaging, 4 lubilers will be filled in one mica.



Figure 2. Packaging

Marketing this product uses digital marketing techniques. This means we promote this product both directly and indirectly. By using this digital marketing technique, we first use the milkshake application. <https://msha.ke/lubilerrrrr>(milkshake link)

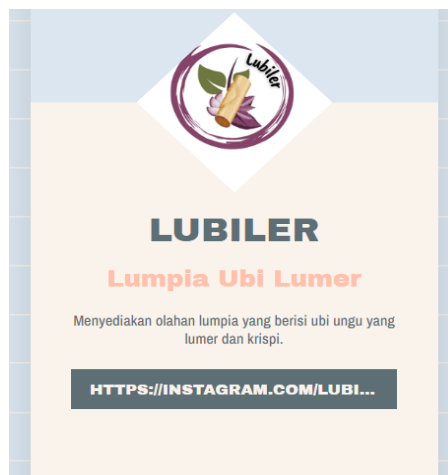


Figure 3. Promotion Via Milshake

The second promotion uses the Instagram account @lubilerrrrr.

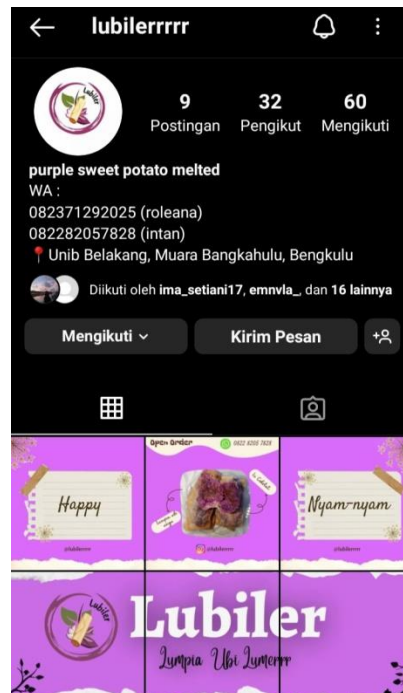


Figure 4. Promotion Via Instagram



Figure 5. Promotional Pamphlet

Product Testing

Lubiler product testing was carried out on Tuesday 21 March 2023 in room 10 GB 3. With 10 testers or tasters. This taste test is carried out by giving one lubiler to each person. Then, after trying, they will provide the results of an assessment or review via a piece of paper given after trying.

**Figure 6.** Product Testing Documentation**Table 1.** Review of Product Results Trial

No	Group name	Reviews
1.	Praise group 8	The lubricant is delicious, the portion is a lot of chocolate, maybe it's because the sweet potato filling has a lot of skin, the lubricant is a bit less crunchy in the mouth, the score is 4.9 out of 5
2.	7th Group	It's delicious and has a lot of melted chocolate filling, but not much haha
3.	Inspiration group 6	The sweet potato tastes really good, it feels hungry, it's also better to eat when it's hot, it's definitely runny, the score is 4.9 out of 5.
4.	Mifta Group 1	Wort it, the size is big, the sweet potato taste is not sweet enough, maybe you can add a little sugar so the chocolate doesn't melt enough.
5.	Chaca group 4	The score is 8.5 out of 10. The relationship could perhaps be made more savory or sweet but overall, it is delicious and unique.
6.	Jessi group 11	The score is 8 out of 10, the lumpia skin isn't crispy at all, but so far, it's delicious
7.	Group 12	The structure of purple sweet potato is good, maybe don't make it too dense so it doesn't stick to your teeth.
8.	Group 13	For the product from lubiler, the rating is 5 stars, it is very delicious, but there is a suggestion from me to add sweetness or sugar to the purple sweet potato.
9.	Hanifa group 9	It tastes less sweet and less lumbery but it's delicious, the rating is quite good.
10.	Fransiska group 10	The lubiler is delicious, the chocolate is thick, the sweet potato is not stingy. But not dry enough. Rating 8 out of 10
11.		The melted sweet potato is delicious, soft but not sweet enough, but delicious, the score is 8 out of 10.
12.	Guti Group 6	Soft, not tasty, but delicious.
13.		It's delicious but doesn't melt a bit

Based on several tests and several stages, the use of purple sweet potatoes as the main ingredient for making Lubiler certainly runs smoothly and very well. Apart from using purple sweet potatoes as the main

ingredient for making, of course we will market the products that we have made using the digital marketing techniques that have been explained previously, we have some of the first digital marketing, namely Instagram milkshakes and so on, as well as the uses of using purple sweet potatoes or This effort is to train our entrepreneurial spirit as students. This entrepreneurial spirit will be needed later after we complete our studies.

Based on the percentage of product tests where many reviews explain or assess the products we make, namely 4.5 out of 5. 8 or 9 out of 10. We can conclude that our product is at an almost sufficient maximum level where our product is suitable for sale and marketing. From here we can also conclude that the creativity we make from purple sweet potatoes is successful and interesting, of course, and we can market it later.

D. Conclusion

Purple sweet potato is a type of sweet potato that is often found in Indonesia apart from the white, yellow and red ones (Lingga, 1995). The purple sweet potato type *Ipomoea batatas* L. Poir has a fairly deep purple color in the flesh of the sweet potato, so it attracts a lot of attention. According to Pakorny et al., (2001) and Timberlake and Bridle (1982) the purple color of sweet potatoes is caused by the presence of purple anthocyanin pigments which spread from the skin to the flesh of the sweet potato. This concentration of anthocyanin is what causes several types of purple sweet potato to have different shades of purple.

Purple sweet potatoes are suitable for product processing. This time, purple sweet potatoes are put into spring roll wrappers which are then filled with chocolate. Of course, with several reviews, our product which we will market will certainly get a good and good response, of course from other fellow students, because the use of purple sweet potatoes as the main ingredient for basic lu beler preparations through digital marketing techniques to improve students' entrepreneurial spirit is certainly good and very well done. As you all know, purple sweet potatoes are probably tired of being processed into chips or the same food ingredients, of course here we are. will produce the latest purple sweet potato preparations that are creative and contemporary, of course.

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