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MATHEMATICS CILOK WITH CARROT CONTENT AS A HEALTHY AND EDUCATIONAL STREET FOOD INNOVATION

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Abstract:
Cilok is a popular street food because it is practical, satiate, and cheap. Behind that, nutrition's cilok has low value, and street food has a negative stigma. Then, the Indonesian population does not consume enough fruit and vegetables. Therefore, adding vegetables, shape modifications, and hygienic packaging to cilok products is necessary so that people do not have to worry about consuming their favorite street food, creating a relatively high market opportunity. Based on this, Cilok Mathematics is here as a unique, healthy, and educational street-food innovation. The production process is divided into three stages: making, preparing peanut sauce, and packaging. It is hoped that the Cilok Mathematics product can expand the market while maintaining quality so that, in the future, this product has the potential to operate stably and consistently. Cilok Mathematics will register product patents, trademarks, and halal certificates in the next plan. Apart from that, in the production process, a production house will be promoted at the bazaar or other events, and each team will carry out promotions in their area so that Cilok Mathematics can become more widely known.

Keywords: street food, cilok, math cilok, carrot

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INTRODUCTION

The culinary business is a business that will not be eroded by time because one of the basic human needs is food. The food business sector that is a promising business opportunity is street food or street food (Lestari & Sudarsono, 2021). According to (Hadinata, 2022), Rakhman, A. Z stated: "Street food has several advantages compared to retail/shops, namely that it is easier to access, faster, has various types, suitable tastes, therefore it attracts the attention of many children and teenagers, even adults." One of the street foods that is popular with people is cilok.

This round-shaped snack filled with meat boiled until it has a chewy texture is very popular with people, especially children. However, behind this, the nutritional content contained in cilok has low nutritional value. This statement was driven by research conducted by Hidayati in (Misnati & Pomalingo, 2021), which states that "semi-moist foods such as cilok, mendoan, bakwan, fried thymus, and fried sausage, weigh per portion only 5 to 30 grams, with a protein value of between 0 and 3.2 grams."

Apart from the low nutritional content of cilok, it turns out that people have a bad stigma regarding street food. Hidayati and Lina in (Hadinata, 2022) revealed that "There are even those who think negatively from a health perspective, that street food is not good for health because it is considered less hygienic, because the snacks are served close to the main road and the lack of understanding of sellers and buyers about hygienic food." Based on negative statements regarding the nutritional content of cilok and the public's stigma about street food, the making of cilok must be modified again to become healthy street food. Apart from that, according to the 2018 Indonesian Basic Health Research results,

as many as 95.5 percent of the Indonesian population still do not consume sufficient portions of fruit and vegetables (Mustakim et al., 2021). One way that can be done is to add vegetables to the cilok.

Vegetables are a food source rich in fiber, vitamins, and minerals that are very beneficial for health (Widani, 2019). In Indonesia, there are many diverse vegetable plants, including carrots. According to data from the Central Statistics Agency (BPS), Indonesia can produce 720.09 thousand tons of carrots throughout 2021 (Salsabilla, 2022)

So, by adding vegetables in the form of carrots to cilok, people do not need to worry about consuming one of their favorite snacks because the nutritional content is sufficient. The cilok can also be modified in shape to increase public interest in this healthy cilok. It is also necessary to convey the hygienic production and packaging process of cilok so that the negative stigma about street food can be broken. This is a profitable target market. Based on this statement, we want to make and sell a product, namely Cilok Mathematics with carrot content, as a healthy and educational street-food innovation.

Street Food

The increasing demand for food, known as street food, occurs in restaurants or eateries and roadside traders. Almost every street corner has street vendors (Anis Rosyiatul & Reliani, 2016). This creates very high competition and rapid changes involving people's eating habits and lifestyles (Alfiero et al., 2017). According to The Food and Agriculture Organization (FAO) (Hadinata, 2022), "Street food is ready-to-eat food and drinks prepared and sold by vendors and hawkers, especially on streets and other similar public places."

Cilok

Cilok is a typical snack from Bandung, West Java Province, which comes from the word "*Aci*" or Sundanese for tapioca flour, which is the essential ingredient for making it, and the word "*dicolok*" describes the stick that is stuck into the cilok as a way of eating it. Apart from tapioca flour/aci, the ingredients for making cilok are wheat flour, water, pepper, salt, and garlic.

According to (Rohmah & Handayani, 2013), The nutritional content contained in cilok per 100 grams is:

Table 1. Cilok nutritional information per 100 grams

Nutrition Information	per 100 grams
Energy	1113kj 266 kcal
Fat	2.57 g
Saturated fat	0.526 g
Polyunsaturated Fat	0.642 g
Monounsaturated Fat	1.168 g
Cholesterol	41 mg
Proteins	2.45g
Carbohydrate	58.17 g
Fiber	0.8g
Sugar	2.43 g
Sodium	221 mg
Potassium	48 mg

Source: (Rohmah & Handayani, 2013)

Carrot

According to Amiridun in (Mogi, 2019) states that: "Carrots are a bulbous plant with a life cycle of 12-24 months which is capable of storing large amounts of carbohydrates for flowering plants. It is identified that there are more than 600 different types of Beta Carotene."

According to Berlian and Hartuti in (Putri et al., 2016) carrot plants in the nomenclature or systematics (Taxonomy) of carrot plants are classified as follows:

1) Division: Spermatophyta (seed plants)
2) Sub Division: Angiosperms (seeds found in fruit)
3) Class: two pieces or split seeds)
4) Order: Umbelliferales / Umbelliferae
5) Family: Apiaceae / Ammiaceae
6) Genus: Daucus
7) Species: Daucus carota L.

METHOD

Pre Production

1) Planning Stage
   The first step we took during the planning stage was a market survey. This activity is an initial step in starting a business to know market conditions consumer interest, and planning further innovation. The second step at this stage is to conduct a feasibility study on the business to be run. This activity was conducted to determine whether the Cilok Mathematics business had long-term and profitable prospects.
2) Preparation phase
   Our activities at this stage are preparing all the needs, starting from the equipment and raw materials needed and providing a place to support the Cilok Mathematics production process.
3) Product Procurement Stage
   Making product samples is needed as a first step to determine the quality of Cilok Mathematics products before they are marketed in large quantities.

Production

1. Tools and materials
   The process of making Mathematical Cilok with a recipe measuring 50 bowls with the equipment used includes scales, basins, knives, cutting boards, mortars, silicone spatula, choppers, blenders, trays, number molds, pans, ladles, steamers, kitchen napkins, drains, cooking tongs, electric gallon pump, gloves. Then, the consumables used in production are 1.15 kg of wheat flour, 1.25 kg of tapioca flour, 50 grams of carrot flour, 60 grams of stock powder, 5 grams of ground pepper, 30 cloves of garlic, 5 teaspoons of salt, 500 grams of breast fillet, *5* pcs carrots, 5 spring onions, 3 liters of water, cooking oil, 20 packets of peanut sauce, paper bowl, stickers, duck spoon, plastic clip, 1 kg plastic.
   Ways of making:
   a. Making carrots:
      1) Grind 30 cloves of garlic and cut the spring onion into small pieces, put the breast fillet into the chopper, then grind.
      2) Cut the top and bottom of the carrot and peel the skin, cut it into several pieces, and put it into the blender to be pureed.
      3) Next, boil the mashed garlic, salt, and water into a pot.

4) Then add flour, tapioca flour, carrot flour, bouillon powder, pepper, and chopped scallions into the basin, then stir until everything is well mixed.
5) When the water for the garlic and salt has boiled, add the water to the batter in the basin and stir again.
6) After mixing everything well, slowly stir the fillet breast, mashed carrots, and tapioca flour.
7) If all the dough has been mixed well, prepare a tray and a greased number mold.
8) Then, take the dough little by little and print it using a number mold.
9) Next, prepare boiling water in a large pot and give 5 tbsp of oil so it does not stick.
10) Boil the cilok until all floats.
11) After all, floats lift and drain.
12) If you want to make a frozen cilok, put the cilok into 1kg of plastic and vacuum using an electric gallon pump. Prepare a steamed steamer, then put the boiled cilok into the steamer to steam for 1 hour
13) Prepare a steaming pot, then simmer the boiled cilok to steam for 1 hour.
14) Remove the cooked cilok and put the cilok into a paper bowl

b. Making peanut sauce:
1) Prepare 20 packets of peanut seasoning, open and put into a basin.
2) Next, add enough hot water, then stir until well mixed.
3) When the peanut seasoning is smooth, prepare a plastic clip.
4) Then, put the peanut sauce into the plastic clip to be inserted into the paper bowl with cilok.

2) Packaging

Cilok Mathematics is packaged using a paper bowl with a minimalist design, colors matched to the product logo, and includes easy math questions. Each Cilok Mathematics package contains 10 ciloks in the shape of 0-9, peanut sauce separated and wrapped in a plastic clip so it doesn't spill easily, and a spoon.

3) Marketing

Marketing for Cilok Mathematics products is carried out using a pre-order system 8 times, promoted via social media, namely Instagram, TikTok, and WhatsApp. On Instagram, a business account has been created regarding Cilok Mathematics products, and there is an uploaded schedule regarding product promotions so buyers can find the latest and detailed information. Cilok Mathematics consumers also give testimonials in Instagram posts to attract market share using the results of reviews from buyers who have used Cilok Mathematics. On TikTok, we also promote and provide product information in every upload, increasing opportunities to attract consumers. On WhatsApp, each member of the Cilok Mathematics team will upload a story and promote it to their respective contacts via chat. Apart from social media, we encourage Cilok Mathematics products directly to friends, relatives, and neighbors.

Post Production

At this stage, reporting and evaluation activities are carried out. The reporting stage includes activity data reports, starting from the pre-production, production, and packaging, to marketing stages with a duration of 4 months, which aims to determine the sequence and development of the business and the profits obtained so that accurate data is obtained for evaluation.

RESULTS AND DISCUSSION

Mathematics cilok sales graph:

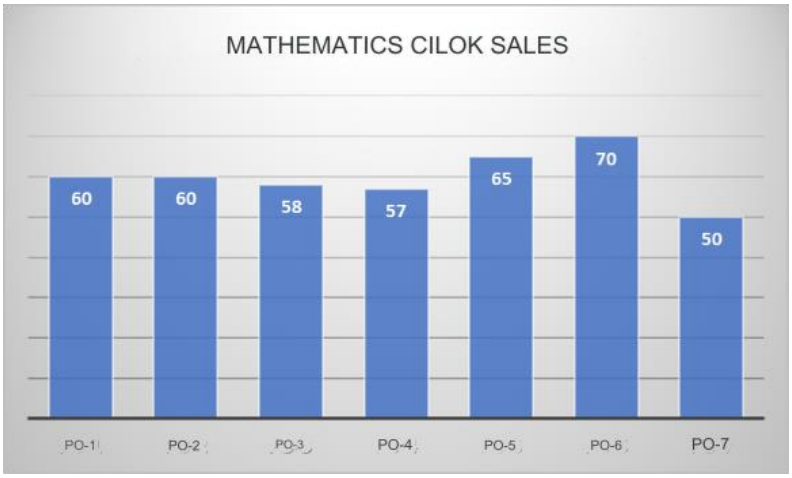

Figure 1. Cilok Mathematics Sales Chart

Total sales of Cilok Mathematics from *PO-1* to *PO-8* amounted to IDR 3,890,000 with a Cost of Production (HPP) of IDR 2,780,301, so a profit of IDR 1,109,699 was obtained.

Year	2023	2024 (CASH FLOW PROJECTION)
Cash Flow From Operating Activities		
Sale	3,890,000	24,000,000
Purchase of raw materials	(2,964,250)	(17,785,500)
Expense payments	(1,270,600)	(2,742,800)
Net cash flow from operating activities	(344,850)	3,471,700
Cash flow from investing activities		
Sale (purchase) of fixed assets	(1,350,242)	(113,000)
Cash flow from financing activities		
Business investment	6,250,000	-
Net increase (decrease) in cash and cash equivalents	4,554,908	3,358,700
Cash and cash equivalents at the beginning of the period	-	4,554,908
Cash and cash equivalent at the end of the period	4,554,908	7,913,608

Figure 2. Cilok Mathematics Cashflow Analysis Table

In 2023, cash flow from operating activities will still experience overspending because cash inflow from sales is only made for 2 months. If sales are carried out stably during 2024, then cash flow from location activities will increase so that cash and cash equivalents held will increase.

CONCLUSION

Cilok Mathematics is a unique, healthy, and educational street-food innovation. Cilok is in the shape of a number made from wheat flour and tapioca flour filled with chicken, which is then boiled until it has a chewy texture, and adds carrot flour. And carrots have been mashed to contain vitamin A, K1, and B6. The packaging used is in the form of a premium paper bowl. , practical and easy to carry anywhere without fear of spillage, and is added with a minimalist-designed sticker using colors that match the product logo. Some math questions add educational value and provide an attractive visual form to increase consumer appeal. Cilok Mathematics aims to improve street food *quality* in the

community and utilize carrots as a raw material to add nutritional value to cilok. This product is sold for IDR 8,000.00, and consumers will get 10 cilok pcs ranging from numbers 0-9 and peanut sauce. Sales of CIlok Mathematics for 2 months with 8x Pre Orders reached 490 products, so the profit earned was IDR 1,109,699. Therefore, Cilok Mathematics has promising business sustainability potential.

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