



## Innovation in Processing Binahong Leaves into Crispy Bina Bite Brownies to Create Small Home Industry Businesses

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**Abstract** . Indonesia is a country rich in natural resources, many plants can grow well in this country. Plants are very useful for humans, because plants are a source of food and medicine for humans. The development of the era makes herbal plants not only used as medicinal ingredients, but can also be used as food ingredients. Many herbal plants can be used for food ingredients, one of which is the binahong plant ( *anredera cordifolia* ). Binahong plants grow creeping and easy to grow anywhere . Usually found in people's yards for fences, besides that it can be consumed to increase body immunity by boiling and then drinking. All parts of the binahong plant can be used for medicine. Binahong leaves contain alkaloid compounds, flavonoids, polyphenols, saponins and antarquinoxones.

Keywords: Binahong Leaf Processing, Brownies Crispy Bina Bite , Creating Small Industrial Businesses

### 1. BACKGROUND

Indonesia is a country rich in natural resources, many plants can grow well in this country. Plants are very useful for humans, because plants are a source of food and medicine for humans. The development of the era makes herbal plants not only used as medicinal ingredients, but can also be used as food ingredients. Many herbal plants can be used for food ingredients, one of which is the binahong plant (*anredera cordifolia*). The binahong plant grows creeping and grows easily anywhere. Usually found in people's yards for fences, besides that it can be consumed to increase the body's immunity by boiling and then drinking. All parts of the binahong plant can be used for medicine. Binahong leaves contain alkaloid compounds, flavonoids, polyphenols, saponins and antarquinoxones.

Binahong leaves are used to treat ulcers, relieve pain, improve digestion, lower cholesterol and heal wounds. Binahong leaves are not only used for healing wounds but can also be used for beauty and food and beverage ingredients. Among the community, binahong leaves have not been utilized optimally, therefore training and explanations about binahong plants are needed, such as introducing their benefits, types and nutritional content. Binahong leaves can be processed into food, can be created to innovate industrial products to make them more useful. Can be used as an additional ingredient in food, cakes, bread, drinks and the like, so that they can produce unique products and become new products and can be accepted by the community. Therefore, in this study, the author created a product innovation using binahong leaves to be made into brownies to create a home industry (Thahirah & Ichsan, 2022a).

Home industry is an industry that does not require many employees, its workforce comes from family members and closest relatives without being tied to working hours. Home industry

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creates binahong leaves to become plants that are more useful for the community. Therefore, the author created the research title "Innovation of Binahong Leaf Processing into Bina Bite Crispy Brownies to Create Small Home Industry Businesses"

## **2. THEORETICAL STUDY**

Home industry is a small industry whose employees involve family members and close relatives. Located at home and not bound by working hours (Hasan, 2021). Product innovation is the process of developing creative ideas that can later be used to change old products into new products or obtain new, more useful findings (Kojo, 2018). Food processing is the process of changing food ingredients into ready-to-eat food for consumption, by cooking using cooking methods that are appropriate to the type of food ingredients and the dish (Panjaitan, 2022).

Brownies are cakes that have a dense texture and are blackish brown in color and have a sweet taste. There are 3 types of brownies, namely steamed, baked and crispy brownies (Sulaeman, 2021).

Binahong leaves are herbal plants that have many properties to cure various diseases such as hemorrhoids, maintain the body's immune system, prevent stroke, gout and other diseases. In addition to curing diseases, binahong leaves can also be used as an additional ingredient in food, can be cooked directly as a side dish for stir-fries, made into drinks such as boiled or made into juice and used as an additional ingredient in other foods. There are two types of binahong plants, namely green and red binahong plants, usually binahong plants grow climbing in the yard (Thahirah & Ichsan, 2022).

In this study, journals were used as research references, the first journal entitled "Physicochemical and Hedonic Characteristics of Making Binahong Herbal Drinks" with a completely randomized design research method with 3 interventions and three replications, the first S1 (500 ml of boiled binahong leaf water with the addition of 5 grams of cinnamon powder) S2 (500 ml of boiled binahong leaf water plus 10 grams of cinnamon powder) S3 (500 ml of boiled binahong leaf water plus 15 grams of cinnamon powder). The results of the organoleptic test of binahong leaf herbal drinks are herbal drinks that are S3 with an aroma value of 4.40, taste 3.73, color 4.50, this journal was written by (Pagune, 2023) . The second journal entitled "Formulation of Adding Binahong Leaves to Acceptability and Protein Content in Potato Croquettes" with an experimental research method and a completely randomized design. In this study, the addition of binahong leaves of 20gr, 30gr, 40gr was obtained and affected the acceptability. The formulation that can be accepted by the community is perkedel added with 20gr of binahong leaves, this journal was written by (Thahirah & Ichsan, 2022a).

The third journal entitled "Baked Brownies Made from Pumpkin Seeds" with a qualitative descriptive research method and obtained the results of baked brownies made from a mixture of pumpkin seed flour which have a delicious taste, delicious aroma, soft texture, and attractive appearance. Based on the questionnaire, 13 out of 15 panelists were interested in buying baked brownies made from pumpkin seed flour if they were sold on the market. Baked brownies can last for six days at room temperature. Making baked brownies made from pumpkin seed flour costs Rp. 36,327, this journal was written by (Ananda & Koeswiryono, 2023). The fourth journal entitled "Substitution of Binahong Leaf Flour (*Anredera Cordifolia*) on the Quality of Catfish Meatballs (*Clarias Gariepinus*)" with a randomized design research method. The results of this study are catfish meatballs with the addition of binahong leaf flour which can affect water content, ash content and organoleptic tests including color, taste, aroma (Nur Aini, Elly Yuniarti Sani, 2022).

The fifth journal entitled "The Influence of Creativity and Product Innovation on Business Progress at Roemah Brownies Gemirasary Bandung" with a descriptive analysis research method, with the results showing that product creativity needs to be carried out for business progress and success, there is a difference in the magnitude of the influence of creativity and product innovation on business success both partially and simultaneously (Sulaeman, 2021).

### **3. RESEARCH METHODS**

This study uses quantitative research methods with data collection techniques using documentation, literature studies, experiments and questionnaires. The research process was carried out from May to July, which was carried out at the researcher's house in Gondanglegi rt 18/07, Gondangsari, Juwiring, Klaten. Researcher do study At home intended For streamline time in research, materials needed is at around house, available supporting facilities and infrastructure.

In the research process consists of from a number of the first flow preparation ingredients, preparation tools, then preparation recipe For make crispy binahong brownies, then after the product finished made organoleptic tests were carried out involving 50 panelists consisting of from 10 panelists trained and 40 panelists from public general.

In this study the author need do experiment For produce the desired crispy binahong brownies, including: equipment needed for making crispy binahong brownies as following:

**Table 1. Equipment for Making Crispy Binahong Brownies**

No	Tool Name	Qty	specification
1	Gas stove	1 Unit	Gas
2	Oven	1 unit	Tank / gas
3	Baking Pan	3 pcs	Stainless steel
4	Pan	1 pcs	Stainless steel
5	Stainless bowl	2 pcs	Stainless steel
6	Plastic bowl	5 pcs	Plastic
7	Balloon whisk	1 pcs	Stainless steel
8	Paintbrush	1 pcs	Silicone
9	Strainer	1 pcs	Plastic
10	Spoon Eat	1 pcs	Stainless steel
11	Scales	1 pcs	Digital
12	Spatula	1 pcs	Silicone
13	Knife	1 pcs	Stainless steel
14	Cutting Board	1 pcs	Plastic
15	Jar	3 pcs	Plastic

Source: Research Data 2024

#### 4. RESULTS AND DISCUSSION

This study discusses the composition of making crispy binahong brownies and the level of public acceptance of crispy binahong brownies. The purpose of this study is to add innovation to brownies to create small home industry businesses. In this study, the experiment of making crispy Binahing brownies was successfully made and can be accepted by the community. The innovation of this product produces crispy brownies with the addition of binahong leaf powder .

##### **Ingredients for Making Crispy Brownies**

Materials used in making crispy brownies is chocolate sticks , margarine, eggs , granulated sugar , flour flour , milk powder , baking powder, leaves binahong . and the costs spent as much as Rp. 44,672.

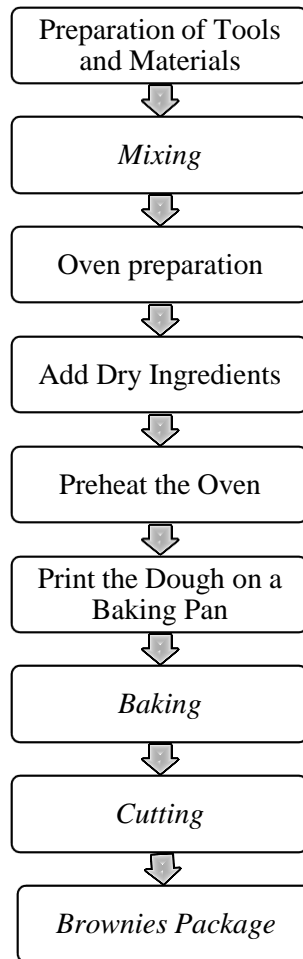
**Table 2. Composition of crispy binahong brownies**

No	Material name	Amount
1	Chocolate stem	200 gr
2	Margarine	60 gr
3	Egg	250 gr
4	Sugar	10 grams
5	flour wheat	90 gr
6	Milk powder	30 grams
7	Baking powder	5 grams
8	Powder binahong	10 grams
9	Binahong leaves	20 grams

Source: Research Data , 2024

### Crispy Binahong Brownies Making Process

The following is Process flow for making crispy binahong brownies

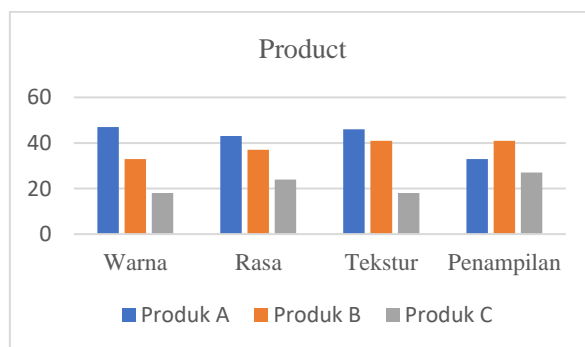


Source: Research Data 2024

**Figure 1. Flowchart for Making Crispy Binahong Brownies**

### Binahong Crispy Brownies Product Assessment Questionnaire Recap

Based on results from product testing , it was found recap explained in the graph the following



Source: 2024 Assessment Data

**Figure 2. Summary of the assessment of crispy binahong brownies**

Based on the data above, crispy binahong brownies were made based on the author's idea to create brownie innovations and create a small home industry by combining them with binahong leaves. This experiment was carried out with a simple manufacturing process and did not require much time. The costs required were also not that much, so that the right formulation for making crispy binahong brownies was obtained.

The results of the questionnaire assessment of the crispy brownies product involved 50 panelists taken from the general public of Gondanglegi Village RT 18/07 and employees of Lorin Solo Hotel. Panelists were asked to assess the crispy binahong brownies product based on aspects of color, taste, texture, and appearance. There are three products available, namely Products A, B and C. Product A adds 10% binahong leaves, Product B 25% and Product C 50%. The following is a detailed explanation of the assessment of crispy binahong brownies:

1. Color

Color is the main thing that attracts consumers or panelists because it can be seen directly with the sense of sight so that it can make panelists interested in tasting the product. Based on the questionnaire assessment, 86% of panelists liked the color of product A, 74% of panelists liked product B and 48% of panelists liked product C.

2. Flavor

Taste is the tongue's response when receiving stimulation given by food, there are four, namely sweet, salty, bitter, sour. The taste of crispy binahong brownies consists of a sweet taste obtained from chocolate bars and sugar, there is a bitter taste obtained from binahong leaves. The taste of product A received an assessment of 94%, the majority of panelists were satisfied with the taste of product A. Product B received an assessment of 66% of panelists and product C received an assessment of 36% of panelists, the majority of panelists did not like product C because it tasted bitter.

3. Texture

Texture is an assessment related to touch such as low moisture content so that the food is crispy and dry, high moisture content so that the food is wet and soft. Based on the product assessment, the assessment of product A was obtained 92% of panelists liked product A, product B 82% of panelists, product C 64% of panelists so that product C requires improvement in texture.

4. Appearance

Appearance is an aspect of assessment that is carried out when the food is served and will affect the consumer's appetite which includes the shape, size, aroma when not yet

consumed. Based on the assessment of the questionnaire consisting of 50 panelists, product A was obtained with an assessment of 86% liking, Product B by 82% and Product C 54%.

## **5. CONCLUSION AND SUGGESTIONS**

### **CONCLUSION**

Crispy biahong brownies are innovation from the author to develop ideas and develop various processed brownies made from herbal plants. Based on the author's experiments on making crispy brownies, it can be concluded as follows:

1. The experiment conducted by the author was successful and obtained a crispy binahong brownies product with a composition using chocolate bars, chicken eggs, granulated sugar, margarine, powdered milk, binahong powder, wheat flour, baking powder. The making includes, the first preparation of tools and materials, then melting the chocolate bars and margarine, beat the eggs and granulated sugar until well mixed, add powdered milk, flour, baking powder and binahong powder gradually and strain. Then stir well, add the melted chocolate bars, stir well, then line the baking sheet with baking paper and heat the oven, then print the dough and then bake at a temperature of 150°C for approximately 45 minutes, then lift and cut while still hot.
2. Based on the questionnaire obtained from 50 panelists, the product with the highest rating is product A, with a taste score of 94%, color 86%, texture 92%, appearance 86% so that the average obtained from product A is 89.5%. Product B gets a taste score of 66%, color 74%, texture 82%, appearance 82%, so that an average score of 76% can be obtained. Product C gets the lowest rating among the 2 products above, namely with a taste score of 36%, color 48%, texture 36%, appearance 54% so that it gets an average score of 43.5%. Based on this assessment, the product that is most accepted by the public is product A because it has the right level of sweetness, bright color, crunchy texture, and attractive appearance.

### **SUGGESTION**

Based on the results of the research conducted by the author, the author can provide the following suggestions:

1. Suggestions for the products produced are that the sizes should be the same.
2. Improve the taste of products B and C so that they are liked by the public, by adding cheese, almonds or chocolate sprinkles toppings.
3. Use the latest and most modern equipment, such as an electric oven, so that the brownies can cook evenly.

4. Suggestions for home industries, with the success of the experiment of making crispy binahong brownies, it can be used to start a business or add product variants to the business that has been done.

## **THANK-YOU NOTE**

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