

2ND EDITION

E-EXTENDED
ABSTRACT

**INTERNATIONAL
AGROTECHNOLOGY
INNOVATION
SYMPOSIUM (i-AIS)**



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INTERNATIONAL AGROTECHNOLOGY INNOVATION SYMPOSIUM (i-AIS)

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ABOUT FACULTY OF PLANTATION AND AGROTECHNOLOGY

The Faculty of Plantation and Agrotechnology was established in 2010 at Universiti Teknologi MARA (UiTM). The mission of the faculty is to play the vital role of producing well-trained professionals in all areas of plantation and agriculture-related industries at national and international levels.

Bachelor of Science (Hons) Plantation Technology and Management is a three-year program that strongly emphasizes the various aspects of Production Technology, Management, and Information Technology highly sought after by the agricultural and plantation sectors. Students in this program will be fully trained to serve as professionals in the plantation sector and related industries. They will have ample opportunities to fulfill important positions in the plantation industry such as plantation executives. This program provides a strong balance of technology and management courses essential for the plantation industry such as management of plantation crops, soil fertility, plantation management operation, plantation crop mechanization, and agricultural precision. As an integral part of the program, students will be required to undergo industrial attachment to gain managerial skills in the plantation industry.

The faculty is highly committed to disseminating, imparting, and fostering intellectual development and research to meet the changing needs of the plantation and agriculture sectors. With this regard, numerous undergraduate and postgraduate programs have been offered by the government's intention to produce professionals and entrepreneurs who are knowledgeable and highly skilled in the plantation, agriculture, and agrotechnology sectors.

PREFACE

International Agrotechnology Innovation Symposium (i-AIS) is a platform to be formed for students/lecturers/staff to share creativity in applying the knowledge that is related to the world of Agrotechnology in the form of posters. This virtual poster competition takes place on the 1st of December 2022 and ends on the 8th of January 2023. This competition is an assessment of students in determining the level of understanding, creativity, and group work for the subject related to agrotechnology and being able to apply it to the field of Agrotechnology. The i-AIS 2022 program takes place from December 1, 2022, to January 8, 2023. The program was officiated by the Dean of the Faculty of Plantation and Agrotechnology, namely Prof. Madya Ts. Dr. Azma Yusuf. The program involves students from faculties of the Faculty of Plantation and Agrotechnology (FPA) and HEP participating in i-AIS 2022, namely, the Faculty of Education and Pre-Higher Education. This program involves the UiTM student and some of the non-UiTM students which come from the international university and the local university. Two categories are contested, namely UiTM and non-UiTM. To date, students from these programs have shown remarkable achievements in academic performance and participation in national as well as international competitions.

This competition is an open door for the students and lecturers to exhibit creative minds stemming from curiosity. Several e-content projects have been evaluated by esteemed judges and that has led to the birth of this E-Poster Book. Ideas and novelties are celebrated, and participants are applauded for displaying ingenious minds in their ideas.

It is hoped that such an effort continues to breed so that there is always an outlet for these creative minds to grow.

Thank you.

Dean
On behalf of the Organizing Committee
Conference Chair
Universiti Teknologi MARA
Faculty of Plantation and Agrotechnology
<http://fpa.uitm.edu.my>

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PRODUCTION OF PINEAPPLE BOBA FROM PINEAPPLE PUREE: MD2 VARIETIES, BUBBLE PINE

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ABSTRACT - The purpose of this innovation is we want make a different flavour and taste for boba. We replace original boba with pineapple puree and make boba pine. This study was conducted with 5 repetitions of pineapple boba produced according to the amount of water and the amount of pineapple puree used. This observation was made on the concentration of mixed ingredients, liquid concentration, coarse fiber rate, and texture and taste test and get 20 respondents of 20 based on score value criteria. For our innovation, we get many suggestions that can make us to improve the quality and attractiveness of products to be sold in the market. we will try to do the best boba pine for our customers. Following all the result, the discussion for our product is more to improve and being better than before. We must study and try many times to get a good product for texture and taste. So, it can get proper product for people.

Keywords: Boba pine, ananas comosus, pineapple puree, original boba

INTRODUCTION

The pineapple, (*Ananas comosus*) is a tropical plant with an edible fruit and the most economically significant plant in the family Bromeliaceae. The pineapple is indigenous to South America, where it has been cultivated for many centuries. Pineapple also originally from Southern Asia. In Philippines, Thailand, Hawaii, Ivory Coast, Kenya, Taiwan, Malaysia & Australia as a main producer of pineapple. In Malaysia, pineapple cultivation on peat soil. Pineapple fruit is acid but kindly sweet. There are many types of pineapple such as Spanish (Josapine, Gandul , Mas Merah), Cayenne (Nanas Sarawak) and Queen (Moris, Yankee). All these types has different characteristic and taste. For this innovation, we use pineapple puree that from MD2 varieties. The research and experiments were carried out in Kg Seri Mendapat, Merlimau Jasin and was carried out throughout the month of December. The ingredients we used were pineapple puree from MD2, white sugar, tapioca flour, water, yellow coloring, and pandan leaves. This experiment was do 5 repetitions of pineapple boba produced an according to the amount of water and the amount of pineapple puree used. This observation was made on the concentration of mixed ingredients, liquid concentration, coarse fibre rate, and texture and taste test.

MATERIAL AND METHOD

Research and experiments were carried out in Kg Seri Mendapat, Merlimau Jasin. The research was carried out throughout the month of December. The ingredients used were pineapple puree, *Ananas comosus* from the MD2 type, white sugar, tapioca flour, water, yellow coloring, and pandan leaves. This study was conducted with 5 repetitions of pineapple boba produced according to the amount of water and the amount of pineapple puree used. The treatments tested were (1) the Addition of pineapple puree with a ratio of 1:6, (2) the Addition of pineapple puree with a ratio of 2:6, (3) the Addition of pineapple puree with a ratio of 3:6, (4) Addition of pineapple puree with a ratio of 4: 6, (5) Addition of pineapple puree with a ratio of 5: 6. This observation was made on the concentration of mixed ingredients, liquid concentration, coarse fiber rate, and texture and taste test. For the texture and taste test, a panel of 20 people was randomly selected with an evaluation based on score value criteria. Score texture (1 = soft, 2 = not chewy, 3 = somewhat chewy, 4 = chewy, 5 = very chewy) and taste (1 = dislike very much, 2 = dislike, 3 = like somewhat, 4 = like, 5 = very like). The characteristics of panelists are family members who are 25 - 50 years old and have different educational backgrounds. Data is taken by filling in a questionnaire from a google form.

The implementation of the research began with the processing of an MD2 pineapple. The process of making this pineapple boba goes through several stages, namely the fruit is washed and cleaned of dirt, then crushed using a blender. The result of the blender is filtered using a filter cloth and the result is pineapple juice. Pineapple puree is obtained from pineapple pomace diluted with water twice. The mixture of pineapple pomace and water was heated to a temperature of 80o C and cooled until a thick pineapple puree was obtained. The cooled pineapple juice will be set aside for the next process of measuring and weighing the sweet potato flour according to different weights into 5 types of samples. Each sample contains a difference in the number of sugar weights, flour weights and different pineapple puree. For each preparation bowl, the use of cassava flour, weight of sugar, the weight of water, and drops of different dyes are:

Table 1: The Effect of The Addition of Pineapple Puree on The Mixture, Chewiness, and Thickness of Boba Pineapple.

Sample	Water (ml/l)	Tropical flour (g)	Sugar (g)	Pineapple puree (g)
A	40	50	15	20
B	40	55	20	25
C	40	60	25	30
D	40	65	30	35
E	40	70	35	40

Research on this treatment is done in a closed room and the preparation must be in a clean condition. Each sample bowl of the mixture should be kneaded into a round shape of around 0.5cm-1cm only, this boba kneading should be done quickly and put into boiling water at 100°c. until the boba seeds become ripe and float on the surface, then they are lifted and soaked in cold water to prevent them from clumping and sticking. Next step, heat the water until it boils, add the pandan leaves and sugar according to the measurement, wait until the sugar dissolves. After that, add the pineapple boba soaked in water, strain, and add it to the sugar water solution, until it thickens and is covered by the sugar water. This is done by stirring until it boils for 10 minutes.

Pineapple puree juice contains a lot of organic acids and minerals that can help for healthy bone strength. This is because pineapple has a certain amount of phosphorus, calcium, manganese, zinc, and copper. Pineapple is also fat-free, cholesterol-free, and has a lot of sodium and sugar. low. In addition, can relieve vomiting, pineapple has vitamin B6 which is good for reducing the urge to vomit. Wanting to vomit can be caused by indigestion while pineapple is rich in digestive enzymes which help to digest food and not leave the stomach feeling heavy or too full.

Steps to make pineapple boba

- [1] Wash and cut in half the MD 2 pineapple.
- [2] Cut the fruit and put it in a blender, blend until smooth and filter
- [3] Put the pineapple puree in a saucepan and cook for 10-15 minutes until thickened, set aside and let cool
- [4] Weigh each sample into the bowl, that is tropical flour, and the weight of the pineapple puree is also recorded.
- [5] Next, mix the sample mixture by placing a little dye according to the number of different drops, 1,2,3,4,5.
- [6] Stir the mixture until thick and not runny to avoid the mixture being limp or too hard
- [7] Prepare the water in the pot, and wait until the water boils, the boba test for each sample should be quick according to the appropriate temperature.

- [8] Pick up the boba that has been cooked and floats and soak it in plain water for a few minutes to prevent it from clumping.
- [9] Heat the pot and add a little water, and add the sugar weighed according to the sample, stir until it boils and add the boba that was soaked a while ago for 5-7 minutes, and it looks thick.
- [10] Put the cooked pineapple boba into the container.

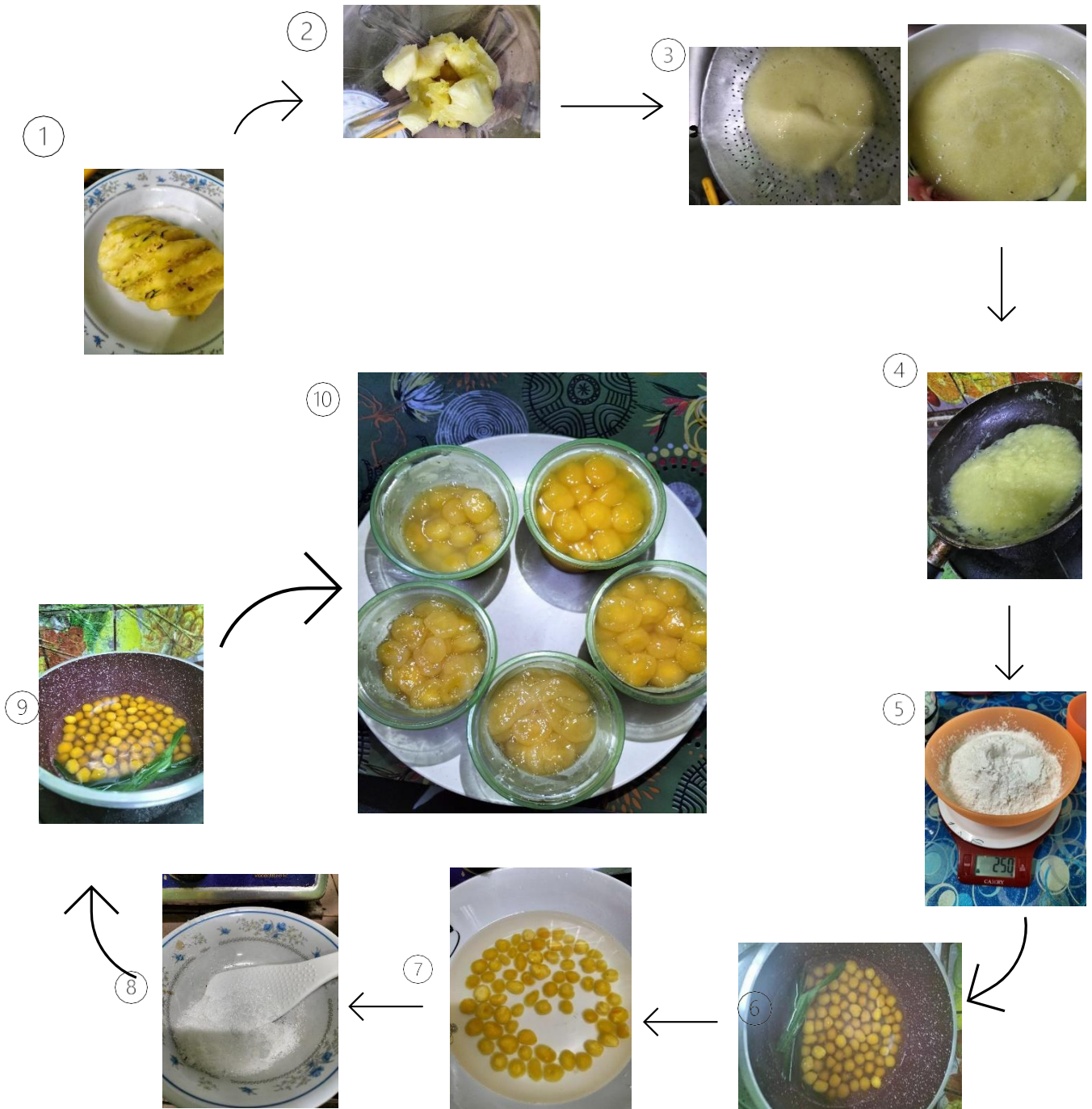


Figure 1: Steps of Making Pineapple Boba

RESULTS AND DISCUSSION

The new product that we create is “Boba Pineapple”. This is a new flavour that we select to study it. The pineapple also has many benefits for improving our health. The benefits of pineapple are loaded with nutrients. Pineapple also contains a trace amount of phosphorus, calcium, zinc, vitamin A and so on. It also may boost immunity and suppress inflammation. So the pineapple is one of the fruits that give many advantages for our body.

The people surveyed follow their level like students, employed and unemployed. The total of results to our survey is 20 respondents. 60% of female and 40% of male. The age of respondents majority is 75%, 19 to 24 years, and the others are 20%, 25 to 29 years and 5%, 30 to 59 years. The occupation of respondents are 65% students and 35% employed.

Product of Qualification

Table 1

	Yes	No	Maybe
1. Have you ever seen, known, and tasted pineapple boba made from pineapple puree extract?	5%	90%	5%
2. Do you agree if our boba pineapple product is on the market?	95%	5%	-

Based on the result, it shows the percentage that people have known, seen and tasted the pineapple boba that made from pineapple puree extract. So, through the survey many people have never seen and know about it. The percentage of respondents is 90 percent never seen and 5 percent ever and maybe to see this product.

TABLE, IMAGE AND FIGURE

Where do you think our products can be found?

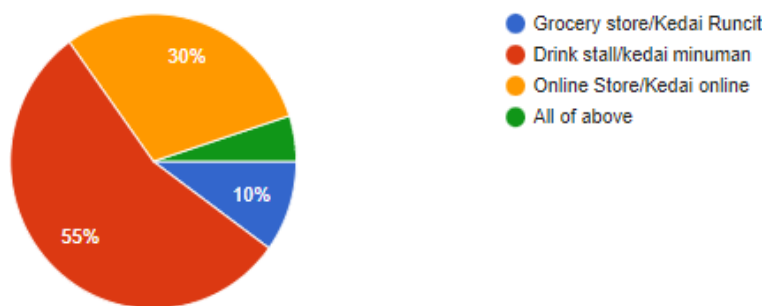


Figure 2

Based on the survey, the total marketable percentages are 55% drink stall, 30% online stores, 10% grocery stores and 5% are all places. The results of selected drink stalls are more than others. So, it's definitely easy to get it and it can also brew water to try a new flavour of water with boba pineapple mix.

Taste

1. Tasteless, 2. Sour, 3. Moderate, 4. Sweet, 5. Too Sweet

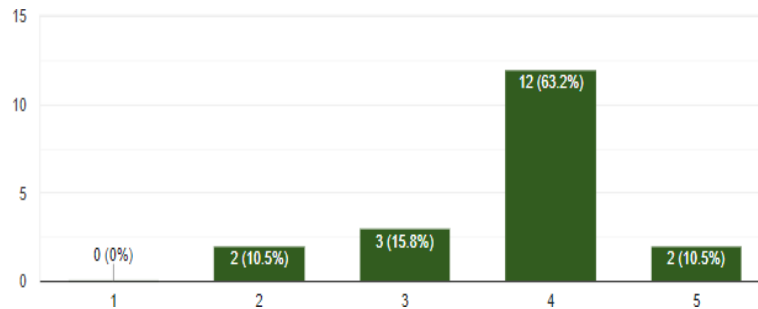


Figure 3: Types of taste

Based on the result, the total percentage of taste is 63.2% sweet, 15.6% moderate and both of sour and too sweet is 10.5%. The major of respondents choose sweet of the taste product. The product also we create is for young until senior citizen so it good for taste not too sour and not too sweet. Maybe, me must try again and again to get a moderate taste for easy to mix with new flavour of water.

Texture

1. Soft, 2. Too Soft, 3. Hard, 4. Chewy, 5. Too Chewy

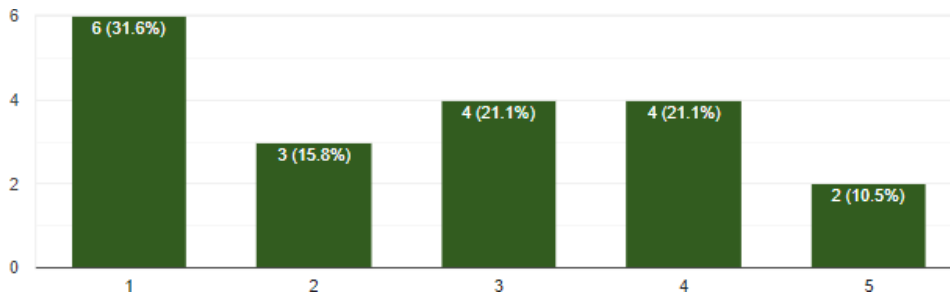


Figure 4: Textures of The Product

Based on the result, the total percentage of the highest texture product is 31.6 percent soft and the total percentage of others is 21.1 percent hard and chewy, 15.8 percent is too soft and 10.5 percent is too chewy. The aim of product that we must create is the texture soft and not too chewy because it easy for senior citizen to chew the boba pine. That we know, the boba that ever have at market is chewy and sometime is too chewy. It also give problem for chew the boba properly.

Shape

1. Too big, 2. Big, 3. Moderate, 4. Small, 5. Too small

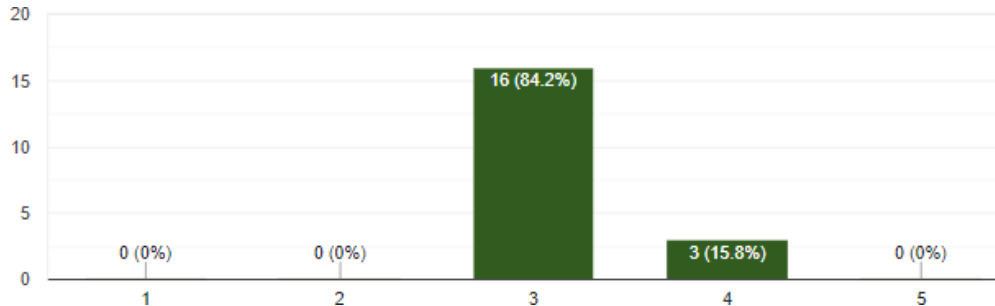


Figure 5: Sizes of the Product

Based on the result of respondents, the shape of this product is moderate 84.2 percent and small 15.8 percent. The better shape good if just moderate because not too big and not too small so easy to chew. It look interesting when not too big and not too small. So, we think good for our product is doing in moderate shape only.

Colour

1. Pale, 2. Dark, 3. Moderate, 4. Bright, 5. Too Bright

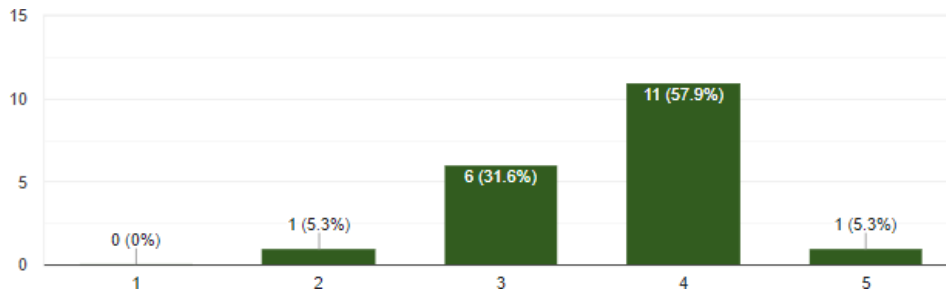


Figure 1.5

Based on the result, the colour is for look interesting and to attack customer to want it. So, the survey of the product is bright 57.9 percent, moderate 31 percent, dark 5.3 percent and too bright 5.3 percent. So the good and interesting colour for the product is surely bright. So, we must improve our product to get all of this product is same colour.

Purchase Intent

What is the appropriate price for our product?

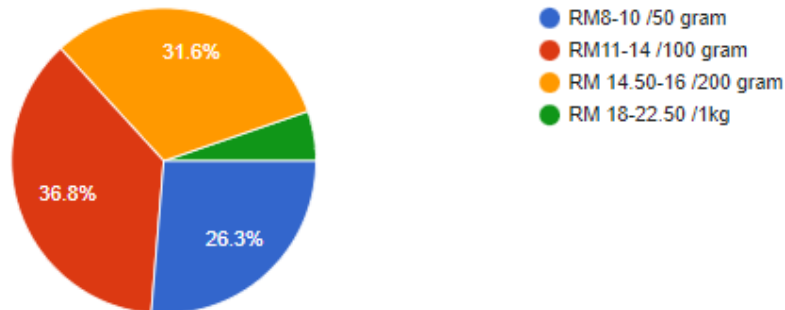


Figure 6

Following the result of the respondents, the appropriate price for our product is RM11 to RM14 of 100 gram. The 200 gram is RM14.50 to Rm16 also have public responses. So, we will discuss to choose between this price to put at or product. It surely not expensive and well worth getting it.

How likely would you to be purchase this bosa pine?



Figure 7

Based on the result of respondent, the likely to be purchase of this boba pine is mostly want purchase the boba. So, it gives us the spirit to continue this product to be sold in the market.

Table 1: Show any suggestion for our product

1	Distribute widely
2	Good new flavour for boba product
3	A brilliant idea that can be replaced with various other fruits
4	No
5	-
6	No
7	Can improve again
8	Suitable for banquets, prepare special packaging to store for a long time
9	No
10	Don't make it too sweet
11	spread more information on the product
12	Perfect
13	No
14	Sour or sweet?
15	I think the price for the boba per gram is quite expensive. Lowering the price would be good.
16	the baby pineapple boba
17	Hope your company could do a soft launch to give a tester and get feedback before your grand launching
18	Need to be marketed widely such as in retail and wholesale stores
19	Make transparent color
20	No have

Based on the suggestions from the respondents, we will improve our skills and products before selling it in the market. These suggestion are very helpful for us to improve the quality and attractiveness of products to be sold in the market. we will try to do the best boba pine for our customers. Following all of the result, the discussion for our product is more to improve and being better than before. We must study and try many times to get a good product for texture and taste. So, it can get proper product for people.

CONCLUSION

In a conclusion, the product that our choose is new favour and don't have any stall that sell this product. So, we think with a new product it can change taste us to try it. The pineapple also have benefit for our body. It may boost immunity and suppress inflammation. We create product not too sour and not too sweet so the all of people from age 13 until more than 60 years old can eat the boba.

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