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Formulation of Seasoned Sauce Product for Betong Instant Noodle

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Abstract. The purpose of this study was to develop the seasoned sauce for instant Betong noodle. The developed seasoned sauce formula consisted of garlic, sugar, black soy sauce, soy sauce and vegetable oil in quantity of 24.5%, 14%, 1.5%, 24% and 36% respectively. The ratio study of seasoned sauce product per rehydrated Betong noodle 117 grams indicated that 50 grams of seasoned sauce per rehydrated Betong noodle 117 grams was the most favorite. The physical characteristics of seasoned sauce product for Betong instant noodle were the color of L*, a* and b* with value of 17.02, 11.29 and 23.04 respectively and the Water Activity (a_w) with value of 0.60. The chemical characteristics were 5.09 pH and the quantity of salt, sugar, moisture, protein, fat, ash and fiber were 2.85%, 1.04%, 8.24%, 0.74%, 37.55%, 6.83% and 0.91% respectively. Meanwhile, the result from consumers' acceptance survey revealed that 31.3% of consumers rated "Liked very much" with average score of 7.31 ± 1.44 .

1. Introduction

The instant food is the food products obtain from the production process through embellishments or through the heat and make it dried to be able to keep it for a long time. There must be additional process before consumption such as adding hot water, boiling, steaming and etc. The popular instant food are frozen food recipe and instant noodle. Especially, the instant noodle is commonly popular consumed in Asian people. The instant noodle produce from wheat flour and added eggs as a small ingredient which it help the color and taste of the noodle. There three main steps which are mixing, rolling into thin sheets, and cutting into the strip. This produce the fresh noodle with high humidity and cannot be stored for a long time. Hence, the transformation of fresh noodle by make it dry and become an instant noodle which have low humidity and can be stored for a long time [1] Betong instant noodle is very famous and popular consume in Thailand's Three Southern Border Provinces. It has a unique feature which are sticky and soft [2] The instant noodle's ingredient are wheat flour, water, and salt and may add some natural color and blend it together by knead then rolling into thin sheets, cutting into the strip, streamed, bundle it an dried by solar heat or other sources. It have to boiling in hot water to make it soft before consumption. [3] After that, it can be used to produce many types of fast food such as Stir-fried Fresh rice-flour noodles in thick sauce, salad, fried noodle and etc. It is necessary to add the right among seasoning sauce to get the desire taste in various cooking which using Betong Instant Noodle. Moreover, if add incorrect quantity seasoning sauce, this may effect to the taste or the invariability. There is a rather tricky and inconvenient method of preparing ingredients. Therefore, the research project proponent is interested in studying the development of Seasoned Sauce Product for Betong instant noodle to be accepted by consumers and relay to the entrepreneurs of producing Betong instant noodle in Yala Province, Narathiwat Province, Pattani Province and other interested. To encourage



entrepreneurs by sell Instant noodle and seasoned sauce in the same pack in order to facilitate the cooking of customers and easily carried during travel, such as during a trip to Haji in Saudi Arabia, where people in Thailand's Three Southern Border Provinces often bring dry food which easy cooking with them or to be consumed in Thailand's Three Southern Border Province, other regions or neighbor such as Malaysia. Thai food has a taste that accepted by people around the world, which is considered as a part of strengthening the community and society to be the stability of local society and nation.

2. Theoretical Background

Hurdle technology is the combination of different preservation techniques as a preservation strategy. The critical limits are being used by the industry when each hurdle such as heat treatment, water content, pH and stor-age temperature is applied alone. Fundamental based theoretical concepts of F-value (hurdle: heat treatment), water activity (hurdle: water content) and glass transition (hurdle: glassy state; depending on water, storage temperature, and structure) are the most successful in determining food stability during food processing and storage. These concepts (i.e. each hurdle) are usually applied to specific types of products, for examples F-value to canned foods (i.e. high moisture); and water activity and glass transition for dried and frozen foods. The F-value is based on commercial sterility, water activity by state of water (i.e. bound or free) and glass-rubber transi-tion by structural mobility. However, more than 60 hurdles may involve in food preservation. In achieving the desired safety by only one hurdle, high severity in processing needs to be applied. This caused significant damages to the nutritional and sensory quality of foods. For this reason, it is important to have multi-hurdles approach for developing safe and wholesome food products. The hurdle effect has fundamental importance for the preservation of foods, since the hurdles provide a control to microbial spoilage, food-poisoning and other undesired changes. The advantages of hurdle concepts are (1) it can avoid the severity of one hurdle for preservation, (2) it can give synergy of combination, and (3) many of the hurdles come from past experience (i.e. tradition or culture). Currently huge numbers of products are being developed based on the multi-hurdles. The combinations and the levels of hurdles are determined based on the empirical experiments. However, it is a challenge to food scientists and engineers to have unified concept or approach for determining food stability considering multi-hurdles, such as heat treatment, water content, pH, salt, spices, preservatives, packaging and storage temperature. Stability map was proposed based on the state diagram (i.e. states and/or phases of a food as a function of water or solids content and temperature). Recently macro-micro region concept in the state diagram has been proposed and relative stability map is postulated in the 13 micro-regions. In order to achieve safety, the proposed micro-region concept showed potential to combine multi- hurdles, or to provide a guide on the hurdles need to be used in each micro-region. [4]

3. Materials and Method

Raw material

- Sugar, Lin Brand. Thai Multi-Sugar Company Limited Karnchanaburi Province, Thailand
- Black soy sauce, Deksomboon Brand. Yan Wal Yun Company Limited Sakhon Samut Province, Thailand
- Soy sauce, Deksomboon Brand. Yan Wal Yun Company Limited Sakhon Samut Province, Thailand
- Vegetable oil, A-ngun Brand. Thai Vegetable Oil Public Company Limited Nakornpathom Province, Thailan
- Dried galic Saree. Market Muang District Yala Province, Thailand

Method

(1) Study the formula of Seasoned Sauce Product for Betong instant noodle which accepted by consumers

The study of 5 formulas of Seasoned Sauce Product for Betong instant noodle which the same ingredient with the seasoned sauce of Stir fried noodle with soy sauce. Used this formula to produce the seasoned sauce then used this seasoned to fried Betong instant noodle and do the sensory

test by ranking for preference [5] Used 35 the panelist to selected the highest Rank sum formula to use in the next.

Table 1 the formula of Seasoned Sauce Product for Betong Instant Noodle

| Ingredient | Formula 1 (percent) | Formula 2 (percent) | Formula3 (percent) | Formula 4 (percent) | Formula 5 (percent) |
|--------------------|--------------------------------|--------------------------------|-------------------------------|--------------------------------|--------------------------------|
| Garlic | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 |
| Sugar | 15 | 14.5 | 14 | 13.5 | 13 |
| Black soy sauce | 0.5 | 1 | 1.5 | 2 | 2.5 |
| Soy sauce | 24 | 24 | 24 | 24 | 24 |
| Vegetable oil | 36 | 36 | 36 | 36 | 36 |

The process of producing the Seasoned Sauce Product for Betong instant noodle

Put the vegetable oil in the pan and add garlic, sugar, soy sauce, and black soy sauce (Mix soy sauce and black soy sauce together) and stew it to tap 105 0c with 5 minutes then packed in sterile glass bottles and close the lid tightly. Then will get the seasoned sauce of Betong instant noodle.

(2) Study the ratio of seasoned sauce effect to Betong instant noodle which consumer acceptance.

Study the ratio of seasoned sauce effect to Betong instant noodle which one unit of consumption (The suggestions of producer recommend consumer to consume the food product each time.) The quantity of instant noodle product in on serving is 50 grams.

Next, rehydrate instant noodle by soak in the cool water for 15 minutes or hot water for 3 minutes then set it to drain, the result is the instant noodle have more weight 117 ± 1.15 grams, then study the ratio of rehydrate Betong instant noodle 117 grams per seasoned sauce 5 level were 30, 35, 40, 45, and 50 grams which the following step; Add the seasoned sauce product of Betong instant noodle in the hot pan with each level and and fried rehydrate Betong instant noodle 117 grams together, then add some eggs, and kales 23.5 grams per each, then cook and do the sensory test by the ranking for preference method by 35 panelist, selected the ratio that the consumer give the highest rate and packed for sale.

(3) Study the characteristics of seasoned sauce product for Betong instant noodle

Analyze the physical characteristics of seasoned sauce product for Betong instant noodle were the color of L^* a^* and b^* with color meter device and value of a_w . The chemical characteristics were pH with pH meter device, quantity of salt, sugar, moisture, protein, fat, ash, and fiber. [6]

(4) Study the consumers' acceptance survey

Test the consumers' acceptance survey of seasoned sauce product by fried with rehydrated Betong noodle which ready to eat. Test the consumer accepted by the sensory test 9 Point hedonic scale (1 = Dislike the most 2 = Dislike much 3 = Dislike at moderate level 4 = Dislike a little 5 = cannot say like or dislike 6 = like a little bit 7= like at moderate level 8 = like very much 9 = like the most) and evaluate by finding the percentage from the consumer evaluation score.

4. Results and Discussion

(1) The study of formula's seasoned sauce product for Betong instant noodle

To study of 5 formula of Seasoned Sauce Product of Betong instant noodle, then selected by the sensory test by ranking for preference which 1 define as the preference rank 1 and 5 defined as the preference rank 5. The study used 35 panelist to test the preference order. The result is the 5 formula seasoned have a total of ranking preference between 81- 119, with the seasoned sauce formula 3 have

the highest preference rating as show in table 2, which is a formula that consists of garlic, sugar, black soy sauce, soy sauce and vegetable oil were 24.5%,14%,1.5%,24 and 36% respectively.

Table 2 Preference order of Seasoned Sauce Product of Betong instant noodle

| Tester | Preference | | | | |
|------------------------------------|------------------|------------------|-----------------|-------------------|------------------|
| | Formula1 | Formula2 | Formula3 | Formula4 | Formula5 |
| 1 | 4 | 3 | 2 | 1 | 5 |
| 2 | 3 | 2 | 1 | 4 | 5 |
| 3 | 2 | 1 | 3 | 5 | 4 |
| 4 | 5 | 2 | 1 | 3 | 4 |
| 5 | 2 | 3 | 1 | 5 | 4 |
| 6 | 2 | 3 | 5 | 4 | 1 |
| 7 | 1 | 5 | 2 | 3 | 4 |
| 8 | 3 | 5 | 1 | 2 | 4 |
| 9 | 2 | 3 | 1 | 4 | 5 |
| 10 | 5 | 4 | 1 | 3 | 2 |
| 11 | 3 | 4 | 5 | 2 | 1 |
| 12 | 4 | 5 | 1 | 3 | 2 |
| 13 | 4 | 5 | 1 | 2 | 3 |
| 14 | 1 | 2 | 4 | 3 | 5 |
| 15 | 3 | 1 | 2 | 5 | 4 |
| 16 | 4 | 1 | 3 | 5 | 2 |
| 17 | 4 | 1 | 2 | 5 | 3 |
| 18 | 1 | 5 | 4 | 3 | 2 |
| 19 | 2 | 1 | 5 | 4 | 3 |
| 20 | 3 | 1 | 5 | 4 | 2 |
| 21 | 3 | 4 | 1 | 2 | 5 |
| 22 | 5 | 3 | 2 | 1 | 4 |
| 23 | 2 | 3 | 4 | 5 | 1 |
| 24 | 5 | 4 | 1 | 2 | 3 |
| 25 | 5 | 4 | 2 | 1 | 3 |
| 26 | 5 | 3 | 2 | 1 | 4 |
| 27 | 5 | 3 | 4 | 1 | 2 |
| 28 | 5 | 3 | 1 | 2 | 4 |
| 29 | 5 | 4 | 1 | 2 | 3 |
| 30 | 5 | 4 | 1 | 2 | 3 |
| 31 | 2 | 1 | 5 | 3 | 4 |
| 32 | 5 | 2 | 1 | 4 | 3 |
| 33 | 2 | 3 | 1 | 4 | 5 |
| 34 | 4 | 5 | 3 | 2 | 1 |
| 35 | 3 | 5 | 2 | 1 | 4 |
| Total of ranking preference | 119 ^a | 108 ^a | 81 ^b | 103 ^{ab} | 114 ^a |

Note 1 defined as the preference rank 1 and 5 defined as the preference rank 5.

* The total of ranking for preference which the same horizontal character is not difference in statistically ($p \geq 0.05$)

By Formula 3: There is first ranking preference. Average ranking preference rating 81

Formula 4: There is second ranking preference. Average ranking preference rating 103

Formula 2: There is third ranking preference. Average ranking preference rating 108

Formula 5: There is forth ranking preference. Average ranking preference rating 114

Formula 1: There is fifth ranking preference. Average ranking preference rating 119

Statistical analysis methods

Calculation values LSD_{rank} by follow Fisher and Yates (1942)

$$\text{Formula T} \quad \left(\left[\frac{12}{bt(t+1)} \sum_{j=1}^t X_j^2 \right] - 3b(t+1) \right)$$

t = Number of examples

j = Value from 1 to t

b = Number of testers

i = Value from 1 to b

df = t-1

$$\begin{aligned} T &= \left\{ \left[\frac{12}{(35)(5)(5+1)} \right] \left[(119)^2(108)^2(81)^2(103)^2(114)^2 \right] \right\} - 3(35)(5+1) \\ &= (12/1050)(55,991) - 630 \\ &= 9.89 \end{aligned}$$

From the table value X^2 , df = 4, p = 0.05 = 9.49

Therefore Value $T_{calculate} > X^2_{df=4, 0.05} \rightarrow$ accepted $H_a \rightarrow$ the example is different at $p < 0.05$

Use formula $LSD_{rank} = 1.96 [bt(t+1)/6]^{1/2}$

t = Number of examples

b = Number of tasters

$$\begin{aligned} LSD_{rank} &= 1.96[(35)(5)(5+1)/6]^{1/2} \\ &= 1.96[175]^{1/2} \\ &= 1.96[13.23] \\ &= 25.93 \end{aligned}$$

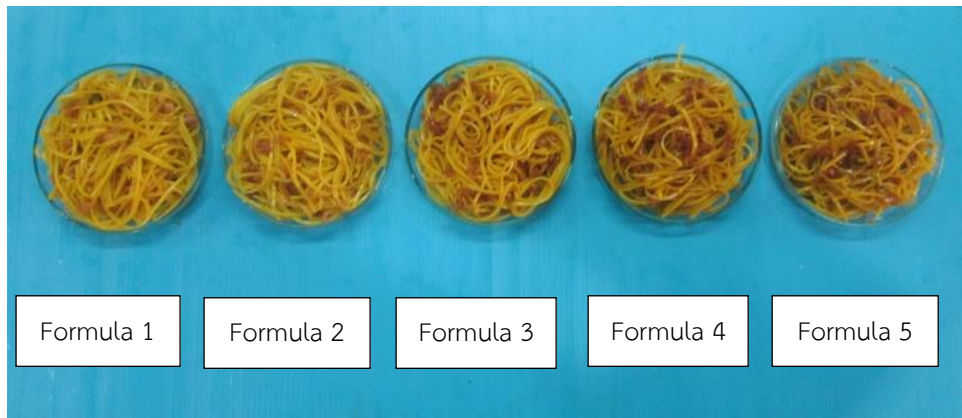
When comparing the difference values of rank sum of each pair compared to LSD_{rank}

| | | | |
|---------------------|---|-------|---------------|
| A-B = 119-108 = 11 | < | 25.93 | No difference |
| A-C = 119-81 = 38 | > | 25.93 | Difference |
| A-D = 119-103 = 16 | < | 25.93 | No difference |
| A-E = 119-114 = 5 | < | 25.93 | No difference |
| B-C = 108-81 = 27 | > | 25.93 | Difference |
| B-D = 108-103 = 5 | < | 25.93 | No difference |
| B-E = 108-114 = 6 | < | 25.93 | No difference |
| C-D = 81-103 = 22 | < | 25.93 | No difference |
| C-E = 81-114 = 33 | > | 25.93 | Difference |
| D-E = 103-114 = -11 | < | 25.93 | No difference |

Note A = Formula 1, B = Formula 2, C = Formula 3, D = Formula 4 and E = Formula 5



(a) Seasoned Sauce



(b) Betong instant noodle with Seasoned Sauce



(c) Fried Betong Instant Noodle ready to eat

Figure 1 Seasoned Sauce Product of Betong Instant Noodle (a) Seasoned Sauce (b) Betong instant noodle with Seasoned Sauce (c) Fried Betong instant noodle ready to eat.

(2) Study the ratio of seasoned sauce to Betong instant noodle which consumer acceptance.

The study of ratio of seasoned sauce 5 level are 30, 35, 40, 45, and 50 grams to rehydrate Betong noodle quantity 117 grams. And then fried seasoned sauce with Betong noodle for ready to eat and do the sensory test and do ranking for preference by 1 mean 1 defined as the preference rank 1 and 5 defined as the preference rank 5 an the participate tester 30 panelist has found that the ratio of seasoned sauce to Betong noodle in 5 level has preference ranking score between 62-147 in table 3 and difference ($p < 0.05$) which the ratio 5 is seasoned sauce quantity 50 grams to hydrate Betong noodle quantity 117 grams. The first ranking of preference difference from other ratio in the statistics ($P < 0.05$) and selected the ratio of seasoned sauce to rehydrate Betong noodle in this level to packed for sale.

Table 3 The preference ranking of original seasoned sauce to Betong instant noodle.

| Taster | Preference | | | | |
|------------------------------------|------------------|------------------|------------------|------------------|-----------------|
| | Formula1 | Formula2 | Formula3 | Formula4 | Formula5 |
| 1 | 5 | 2 | 4 | 3 | 1 |
| 2 | 5 | 4 | 3 | 2 | 1 |
| 3 | 4 | 5 | 3 | 2 | 1 |
| 4 | 5 | 4 | 3 | 2 | 1 |
| 5 | 5 | 4 | 3 | 2 | 1 |
| 6 | 5 | 2 | 1 | 3 | 4 |
| 7 | 4 | 5 | 3 | 2 | 1 |
| 8 | 4 | 5 | 2 | 3 | 1 |
| 9 | 5 | 4 | 3 | 2 | 1 |
| 10 | 4 | 5 | 2 | 3 | 1 |
| 11 | 1 | 5 | 4 | 3 | 2 |
| 12 | 4 | 2 | 5 | 1 | 3 |
| 13 | 4 | 1 | 2 | 5 | 3 |
| 14 | 5 | 4 | 2 | 3 | 1 |
| 15 | 5 | 4 | 3 | 1 | 2 |
| 16 | 4 | 5 | 2 | 3 | 1 |
| 17 | 5 | 3 | 4 | 2 | 1 |
| 18 | 5 | 2 | 3 | 4 | 1 |
| 19 | 3 | 5 | 2 | 4 | 1 |
| 20 | 3 | 5 | 4 | 1 | 2 |
| 21 | 5 | 3 | 4 | 2 | 1 |
| 22 | 3 | 4 | 5 | 2 | 1 |
| 23 | 4 | 3 | 1 | 2 | 5 |
| 24 | 1 | 5 | 2 | 3 | 4 |
| 25 | 3 | 1 | 2 | 4 | 5 |
| 26 | 5 | 4 | 2 | 3 | 1 |
| 27 | 5 | 4 | 3 | 2 | 1 |
| 28 | 5 | 2 | 3 | 4 | 1 |
| 29 | 4 | 5 | 3 | 2 | 1 |
| 30 | 5 | 3 | 4 | 2 | 1 |
| 31 | 3 | 5 | 4 | 1 | 2 |
| 32 | 5 | 3 | 4 | 1 | 2 |
| 33 | 4 | 5 | 3 | 1 | 2 |
| 34 | 5 | 4 | 3 | 1 | 2 |
| 35 | 5 | 4 | 2 | 1 | 3 |
| Total of ranking preference | 147 ^a | 131 ^a | 103 ^b | 82 ^{bc} | 62 ^c |

Note 1 defined as the preference rank 1 and 5 defined as the preference rank 5.

* The total of ranking for preference which the same horizontal character is not difference in .statistically ($p \geq 0.05$)

Statistical analysis Method

Calculation values LSD_{rank} by follow Fisher and Yates (1942)

$$\text{Formula T} \quad \left(\left[\frac{12}{bt(t+1)} \right] \sum_{j=1}^t X_j^2 \right) - 3b(t+1)$$

t = Number of examples

j = Value from 1 to t

b = Number of testers

i = Value from 1 to b

df = t-1

$$\begin{aligned} T &= \left\{ \left[\frac{12}{(35)(5)(5+1)} \right] \left[(119)^2(108)^2(81)^2(103)^2(114)^2 \right] \right\} - 3(35)(5+1) \\ &= (12/1050)(55,991) - 630 \\ &= 9.89 \end{aligned}$$

From the table value X^2 , df = 4, p = 0.05 = 9.49

Therefore Value $T_{\text{calculate}} > X^2_{df=4, 0.05} \rightarrow$ accepted $H_a \rightarrow$ the example is different at $p < 0.05$ use formula $LSD_{rank} = 1.96 [bt(t+1)/6]^{1/2}$

t = Number of examples

b = Number of testers

$$\begin{aligned} LSD_{rank} &= 1.96[(35)(5)(5+1)/6]^{1/2} \\ &= 1.96[175]^{1/2} \\ &= 1.96[13.23] \\ &= 25.93 \end{aligned}$$

When comparing the difference values of rank sum of each pair compared to LSD_{rank}

| | | | |
|--------------------|---|-------|---------------|
| A-B = 147-131 = 16 | < | 25.93 | No difference |
| A-C = 147-103 = 44 | > | 25.93 | Difference |
| A-D = 147-82 = 65 | > | 25.93 | Difference |
| A-E = 147-62 = 85 | > | 25.93 | Difference |
| B-C = 131-103 = 28 | > | 25.93 | Difference |
| B-D = 131-82 = 49 | > | 25.93 | Difference |
| B-E = 131-62 = 69 | > | 25.93 | Difference |
| C-D = 103-82 = 21 | < | 25.93 | No difference |
| C-E = 103-62 = 41 | > | 25.93 | Difference |
| D-E = 82-62 = 20 | < | 25.93 | No difference |

Note A = Formula 1, B = Formula 2, C = Formula 3, D = Formula 4, E = Formula 5

(3) Characteristics of developed formula of seasoned sauce

Physical attribute

The color L^* , a^* and b^*

Value of L^* is the brightness value of the product starting from the precious white color which the value of L^* equal to 100 changed to the black color which value of L^* equal to 0 value of L^* of the seasoned sauce is 17.02, value of a^* if positive value will be the red value and a^* is negative value is green color, seasoned sauce a^* equal 11.29 and value b^* if positive value, it will be the value of yellow and value of b^* is negative will be value of blue color, original seasoned sauce value b^* average equal to 23.04.

Value of Water Activity (a_w)

Value of a_w is an important factor that control and prevent the deterioration of food products. Therefore, this effect directly to the shelf life of food products because the value of a_w is the factor that indicates the minimum amount of water in food which microorganisms use for growth and use in various chemical reactions. It can use the value of a_w to assess the type of microorganisms to find the cause of expired food as well as used to control and prevent food deterioration by microorganism's effect. Microorganisms grow under the value of a_w which limited, and often making food to have value a_w lower in the point of microorganisms can grow such as almost all bacteria cannot grow in the value of a_w lower than 0.9 and most mold will not grow at the value a_w lower than 0.7 [7] Seasoned sauce have value a_w equal to the percentage of 0.60 classified the food as a_w in the part of dried food (dried food or dehydrated food) Which dried food means the food that through the process of drying or dehydration to reduce the quality of water in food, this is one of the important way to do food preservation. To reduce the quality of water is the way to stop the enzyme and slowing the growth of microorganisms that cause food spoilage and microorganisms create disease (pathogen). Dried food is low water activity food which value of water activity lower than 0.6%, moisture content lower than 15% to protect and control microorganisms than make deteriorate food which are Mold, yeast and bacteria. If it is intermediate moisture food, IMF will have water activity between 0.6%-0.85% and moisture 15%-55% [8] Therefore, it is expected that the seasoned sauce products will long last for several months if kept in a good packaging.

Chemical characteristics

The analysis of chemical characteristics found that seasoned sauce product pH quantity 5.09, quantity of salt, sugar, moisture, protein, fat, ash, and fiber are 2.85%, 1.04%, 8.24%, 0.74%, 37.55%, 6.83% and 0.91% respectively. The pH value is 5.09 classified in the group of food products with moderate acidity which pH between 4.5 -5.3. Therefore, seasoned sauce classified in the group of food products which a_w equal or lower than 0.85 which the pH value higher or lower than 4.5 such as concentrated sweet water or dried fruit. This group of food did not use heat at the sterilizing level. [9] The production process of seasoned sauce product for Betong instant noodle uses many methods of preserving food, known as Hurdle technology [10] which is Heat treatment at 105°C for 5 minutes, combined with the moderate acidity of the product, which these factors help promote the efficiency of microbial disinfection and help the product to have long shelf life. Seasoned sauce contained salt, sugar, moisture, protein, fat, ash, and fiber 2.85%, 1.04%, 8.24%, 0.74%, 37.55%, 6.83% and 0.91% respectively

Table 4 Physical and Chemical Characteristics of Seasoned sauce product for Betong Instant Noodle.

| Characteristic of product | Seasoned sauce product for Betong Instant Noodle |
|---------------------------------|--|
| Physical characteristics | |
| Color | |
| L* | 17.02±0.65 |
| a* | 11.29±0.24 |
| b* | 23.04±0.58 |
| Water Activity (a_w) | 0.60±0.01 |
| Chemical characteristics | |
| PH | 5.09±0.02 |
| Salt (Percent) | 2.85±0.17 |
| Sugar (Percent) | 1.04±0.02 |
| Moisture (Percent) | 8.24±0.18 |
| Protein (Percent) | 0.74±0.05 |
| Fat (Percent) | 37.55±0.70 |
| Ash (Percent) | 6.83±0.08 |
| Fiber (Percent) | 0.91±0.04 |

(4) Study the consumers' acceptance survey of seasoned sauce of Betong instant noodle

Study the consumers' acceptance survey of seasoned sauce of Betong instant noodle of 600 peoples have found that most of consumers accept seasoned sauce of Betong instant noodle in the level of like in the moderate level to the level of like the most 79.7%, the level of like in the moderate level is 28.2%, like very much is 31.3% and level of like the most is 20.2% the average of like 7.31 ± 1.44 in the figure 2;

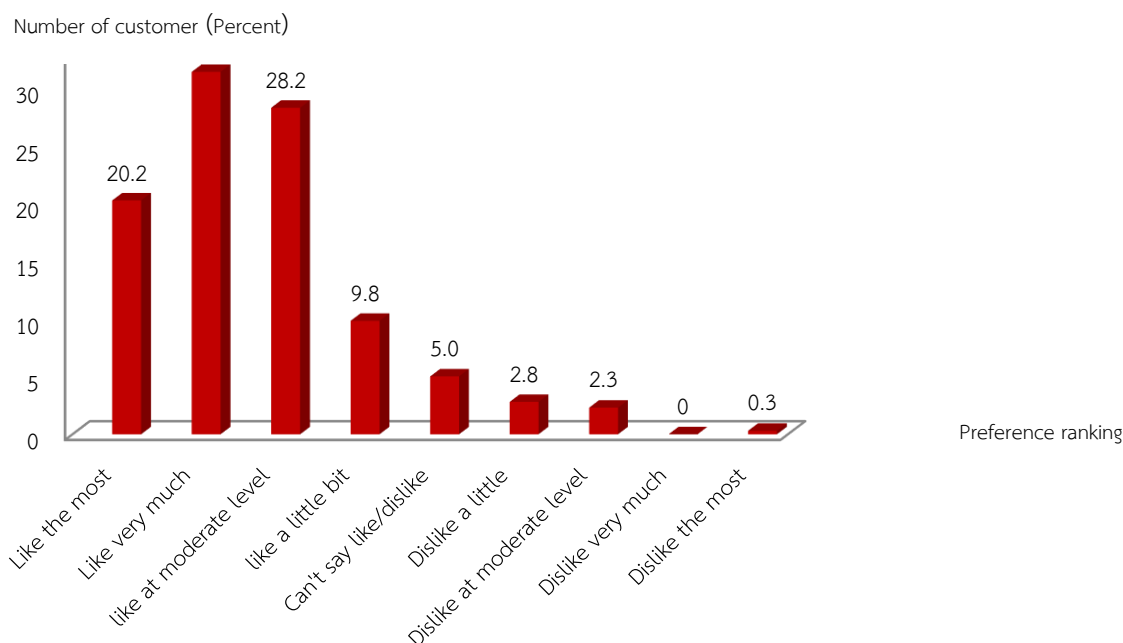


Figure 2 The level of acceptance the formula of seasoned sauce for Betong instant noodle of consumer.

5. Conclusion

The development of seasoned sauce found that the seasoned sauce formula that consumer acceptant the most is consist of garlic, sugar, black soy sauce, soy sauce, and vegetable oil were 24.5%, 14%, 1.5%, 24% and 36% respectively. The ratio study of 50 grams seasoned sauce product per 117 grams rehydrated Betong noodle was the most favorite. The physical characteristics of seasoned sauce product for Betong instant noodle were the color $L^* a^*$ and b^* with value of 17.02, 11.29 and 23.04 respectively and The Water Activity (a_w) with value of 0.60 The chemical were 5.09 pH and the quantity of salt, sugar, moisture, protein, fat, ash, and fiber were 2.85%, 1.04%, 8.2%, 0.74%, 37.55%, 6.83% and 0.91% respectively. The result of consumer acceptance revealed that most of consumer were 31.3% rated "Liked very much" with average score of 7.31 ± 1.44 .

References

- [1] Naiwikul O 1989 *Wheat: Science and Technology* (Bangkok: Kasetsart University Press)
- [2] E-sor A and Kachornkittiya N 2009 *Research Report of The Development of Community Products Packaging in Yala Province* (Yala: Yala Rajabhat University)
- [3] Community Product Standards 2006 *Betong Noodle* (TCPS 1326/2549): Ministry of Industry) (Bangkok: Ministry of Industry)
- [4] Siddiqui M W and Rahman M S 2015 *Minimally Processed Foods* (New York: Springer)
- [5] Anprung P 2008 *Principles of food analysis with sensory* (Bangkok: Chulalongkorn University Bookcentre)
- [6] A.O.A.C 2000 *Official Methods of Analysis of Association of Official Analytical Chemists.* (Washington. DC: The Association of Official Analytical Chemists, Inc)

- [7] Pongsawatmanit R and Wuttijumnong P 2002 *Shelf Life Evaluation of Food Products* (Nakhon Pathom: Kasetsart University)
- [8] Phonchelimphong P and Ratnapnon N 2015 *Intermediate moisture food* [Online] Available: <http://www.Food network solution.com/> [2015, April 26]
- [9] Muninnoppamas W 2017 *Food Processing and Preservation* (Yala: Faculty of Science and Agriculture Yala Rajabhat University)
- [10] Rungsardthong V 2009 *Food Processing Technology* (Bangkok: King Mongkut's University of Technology North Bangkok)