



# Formulation of Seasoned Sauce Product for Betong Instant Noodle

Wipada Muninnopamas<sup>1\*</sup>, Kamontip kanpairo<sup>2</sup>, Suteera Srisuk<sup>2</sup>, Jeerawoot Muninnopamas<sup>3</sup>, and Abdulnaser Hayeesamoh<sup>4</sup>

## 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<sub>w</sub>) 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.

## Introduction

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 [1]. 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, steamed, bundle it and dried by solar heat or other sources. It have to boiling in hot water to make it soft before consumption. [2]. 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.

## Raw material

1. Sugar, Lin Brand. Thai Multi-Sugar Company Limited Kamchanaburi Province, Thailand
2. Black soy sauce, Deksomboon Brand. Yan Wal Yun Company Limited Sakhon Samut Province, Thailand
3. Soy sauce, Deksomboon Brand. Yan Wal Yun Company Limited Sakhon Samut Province, Thailand
4. Vegetable oil, A-ngun Brand. Thai Vegetable Oil Public Company Limited Nakornpathom Province, Thailand

## Materials and Methods

### (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 [3]. 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

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

Ingredient	Formula 1 (percent)	Formula 2 (percent)	Formula 3 (percent)	Formula 4 (percent)	Formula 5 (percent)
Garlic	24.5	24.5	24.5	24.5	24.5
Sugar	15	14.57	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

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<sub>w</sub>. The chemical characteristics were pH with pH meter device, quantity of salt, sugar, moisture, protein, fat, ash, and fiber. [6]

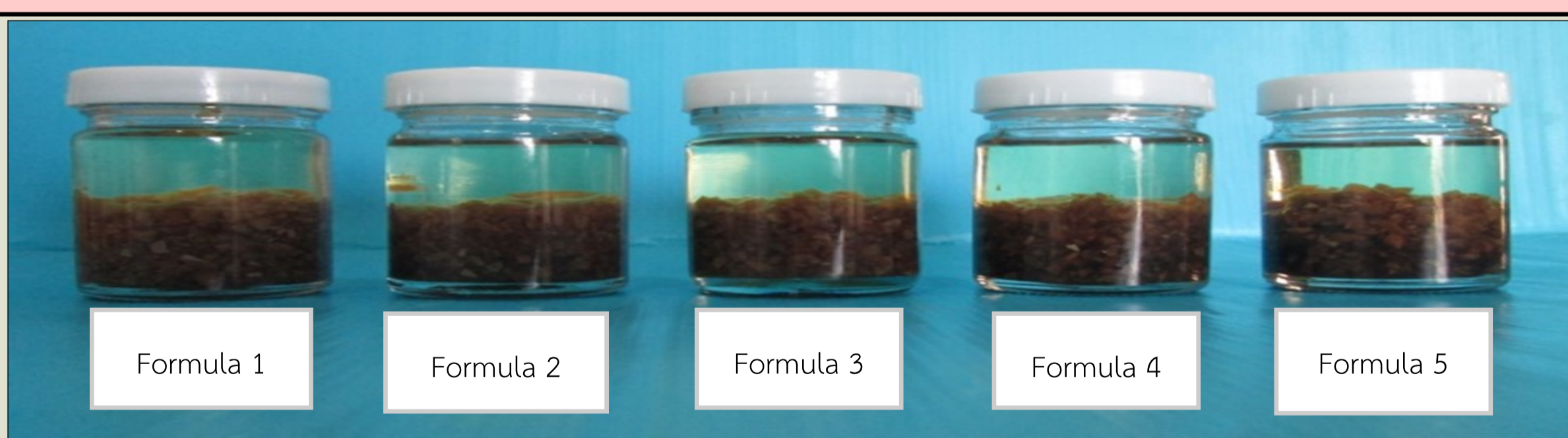
### 4) Study the consumers' acceptance survey

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.

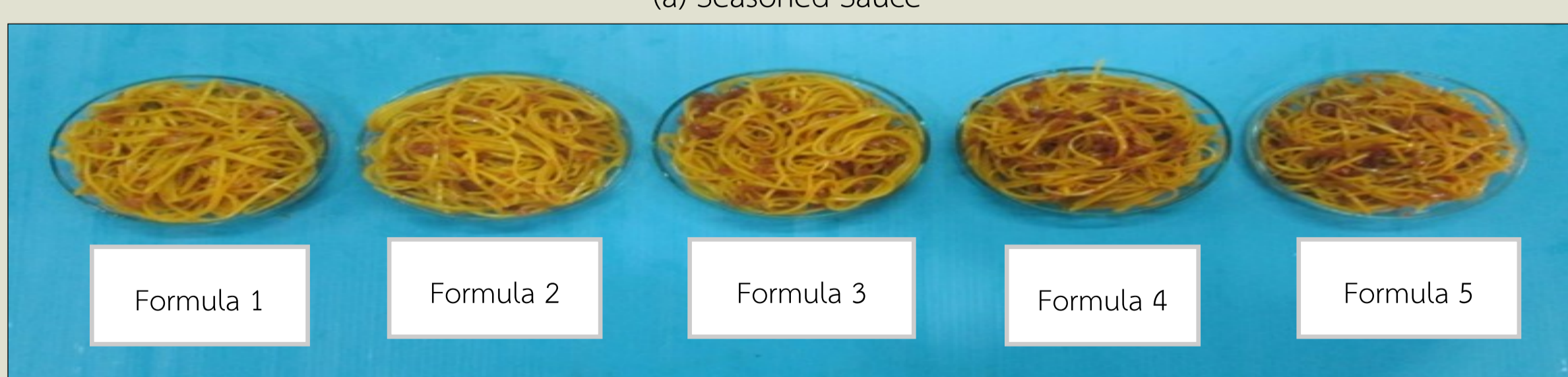
## Results and Discussion

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

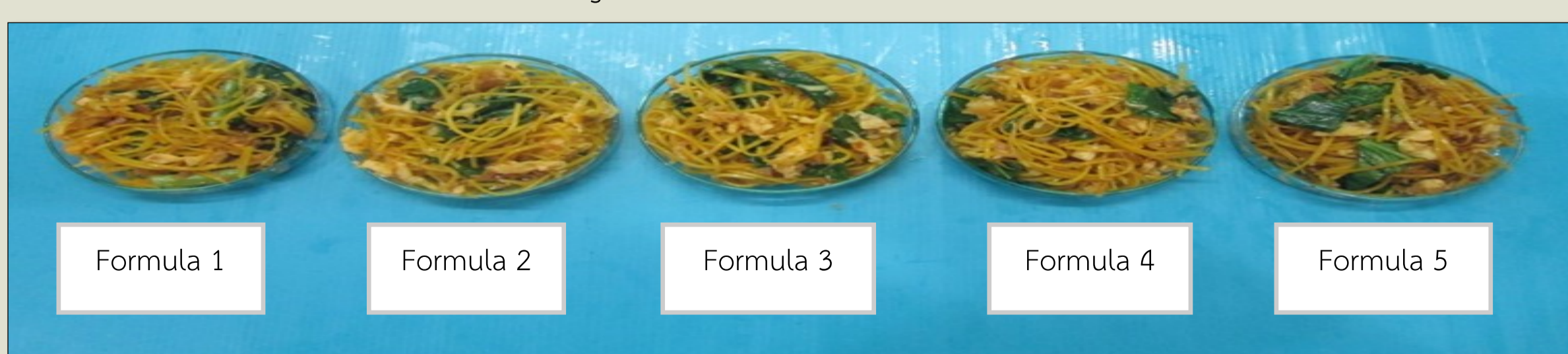
To study of 5 formula of Seasoned Sauce Product of Betong instant noodle, then selected by the sensory test by ranking for preference which 1 define as the preference rank 1 and 5 defined as the preference rank 5. The study used 35 panelist to test the preference order. The result is the 5 formula seasoned 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.



(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.

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

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

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>0.05)

By Formula 1: There is fifth ranking preference. Average ranking preference rating 119  
Formula 2: There is third ranking preference. Average ranking preference rating 108  
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 5: There is fourth ranking preference. Average ranking preference rating 114

### Statistical analysis methods

Calculation values LSD<sub>rank</sub> by follow Fisher and Yates (1942)

$$\left( \frac{12}{bt(t+1)} \sum_{j=1}^t \sum_{i=1}^b x_{ij}^2 \right) - 3b(t+1)$$

t = Number of examples  
j = Value from 1 to t  
b = Number of testers  
i = Value from 1 to b  
df = t-1

$$T = \left( \frac{12}{35(35+1)} \right) \left( \frac{119^2}{108^2} + \frac{81^2}{103^2} + \frac{114^2}{119^2} \right) - 3(35+1)$$

$$= \left( \frac{12}{1050} (55,991) \right) - 630$$

$$= 9.89$$

From the table value  $\chi^2_{df=4, p=0.05} = 9.49$

Therefore Value T<sub>calculate</sub> >  $\chi^2_{df=4, 0.05}$  accepted H<sub>0</sub> the example is different at p<0.05 Use formula LSD<sub>rank</sub> = 1.96 [bt(t+1)/6]<sup>1/2</sup>

t = Number of examples  
b = Number of testers

$$LSD_{rank} = 1.96 \left( \frac{35(35+1)}{6} \right)^{1/2}$$

$$= 1.96 (175)^{1/2}$$

$$= 1.96 (13.23)$$

$$= 25.93$$

When comparing the difference values of rank sum of each pair compared to LSD<sub>rank</sub>

$$A-B = 119-108 = 11 < 25.93 \text{ No difference}$$

$$A-C = 119-81 = 38 > 25.93 \text{ Difference}$$

$$A-D = 119-103 = 16 < 25.93 \text{ No difference}$$

$$A-E = 119-114 = 5 < 25.93 \text{ No difference}$$

$$B-C = 108-81 = 27 > 25.93 \text{ Difference}$$

$$B-D = 108-103 = 5 < 25.93 \text{ No difference}$$

$$B-E = 108-114 = 6 < 25.93 \text{ No difference}$$

$$C-D = 81-103 = 22 < 25.93 \text{ No difference}$$

$$C-E = 81-114 = 33 > 25.93 \text{ Difference}$$

$$D-E = 103-114 = -11 < 25.93 \text{ No difference}$$

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

### (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 and 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 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.

### (3) Characteristics of developed formula of seasoned sauce

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

Characteristic of product	Seasoned sauce product for Betong Instant Noodle
<b>Physical characteristics (Color)</b>	
L*	17.02±0.65
a*	11.29±0.24
b*	23.04±0.58
<b>Water Activity (a<sub>w</sub>)</b>	
	0.60±0.01
<b>Chemical characteristics</b>	
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

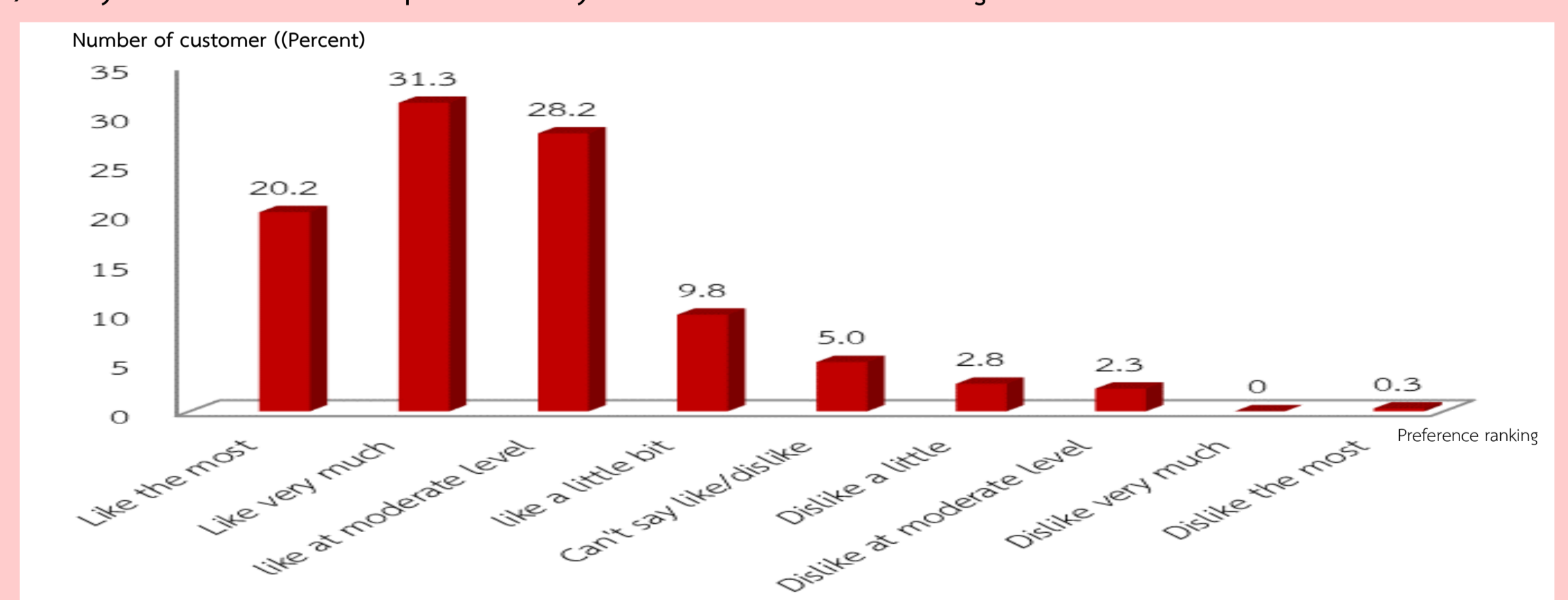


Figure 2 The level of acceptance the formula of seasoned sauce for Betong instant noodle of consumer.

### (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<sub>w</sub>) 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] E-sor A and Kachornkittiya N 2009 Research Report of The Development of Community Products Packaging in Yala Province (Yala: Yala Rajabhat University)
- [2] Community Product Standards 2006 Betong Noodle (TCPS 1326/2549): Ministry of Industry) (Bangkok)
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