

A Study on Making Coconut Honey From

Teltje Koapaha and Tineke Langi *

Abstract— This research aims to study the preparation of honey and coconut skim see the effect of giving sugar to the quality of the honey produced. The research method was a completely randomized design (CRD), consisting of 4 treatments: provision of as much as 0 grams of sugar, 50gram, 100gram and 150gram to skim coconut and coconut hybrid, with 3 replications. The results of the analysis of the level of preference (sensory) and laboratory analyze protein and fat, showed that Coconut Milk Skim coconut cream is good to use to be processed into honey oil, provision/addition of as much as 100 grams of sugar and 150 grams in the manufacture of coconut honey liked panelists, and for adding/giving 100 grams of sugar is considered as an efficient treatment of boundary.

Keywords— Honey, Coconut Honey, Skim, CMC.

I. INTRODUCTION

BASED on Central Bureau of Statistics (BPS) of Indonesia, Indonesia's population on December 31, Year 2012 has stood at approximately 230 million people or nation to the world's four largest population, the activity of population was 75 % activities is Agriculture, and approximately 40 % of the territory land, clear land for cultivation of palm Plant. In the sense that almost every region in Indonesia, many found coconut planting. With an average oil production of 28,000 million per year coconuts or equivalent to 4.8 million tons of copra.

Approximately 80 % of the oil that is used is the only coconut meat to make coconut milk or coconut oil. The process of making coconut oil, which is used only part cream, while the scheme has not been much exploited by Industry Factory or Industrial Housekeeping, and is still a valuable part and is considered waste, whereas the theory thought to contain essential substances essential for human metabolism as protein and fat content. Coconut milk without cream is Skim, still containing 0.26 % fat and 0.31 % protein. (Enig, MG 2009).

According to Raghavendra, S.N. and K.S.M.S. Raghavarao (2010)., Pure coconut milk naturally contains about 54 % water, 35 % fat and 11 % solids non-fat (carbohydrate \pm 6%, \pm 4% protein and other solids) were classified as oil-in-water emulsion. In addition, milk also contains a number of vitamins (vitamin C, B6, thiamin, niacin, folate) and some minerals (calcium, zinc, magnesium, iron, phosphorus). This composition varieties depending on the nature of the raw material (palm fruit), method of extraction and the amount of water added. As with all macroemulsion, coconut milk emulsion is relatively unstable due to the relatively large

particle size (greater than 1 micron). Coconut milk is allowed to stand some time (5-10 hours) will be split into two phases, namely the water-rich phase (skim) on the bottom and the oil-rich phase (cream) on the top.

This study was conducted to utilize skim oil as raw material for making honey, diversification of products, as well as increasing the economic value of refined oil products

II. MATH

A. Research time

This research has been carried out in the Laboratory of the Department of Agricultural Technology, Faculty of Agriculture, University of Sam Ratulangi Manado Indonesia for two months from October to November 2012.

B. Materials and Equipment

Materials used: coconut (skim), sugar, CMC, Alcohol, concentrated H₂SO₄, 0.5 N NaOH, H₂SO₄, 0.25 N, aquades, indicator (red/blue), hexane, and zinc granules. And tools are used: stoves, scales, pans, spoons, oven, refrigerator, filter cloth, measuring cup, erlenmeyer flask, blender, bottle, flask Kjeldahl, Soxhlet, boiling flask, refractometer, a pipette and others.

C. Research Methods

This study used a completely randomized design (CRD) with 4 treatments: provision of as much as 0 grams of sugar, 50 grams, 100 grams and 150 grams, the Coconut and Coconut Skim Hybrid, and treatment be repeated three (3) times.

D. Working Procedure

Procedure of :

1. Creation Scheme Coconut: coconut meat shredded, then blended with water (1:3), and squeezed with filter cloth. Coconut milk is obtained silenced overnight in the refrigerator. There will be three layers of layers of cream, skim and sediment. Carefully removed a layer of cream, to get Skim coating
2. Manufacture Honey Coconut (Coconut Honey): Skim 250 ml coconut, cooked until half of the original (for treatment 0 grams). For the treatment of 50 grams, 100 grams and 150 grams, creating the caramelization then added Skim. Next add 2 grams of CMC, mix until blended. Garbage and heat to a boil, removed and put in bottles available.
3. Observation and Measurement :
 - a. Protein levels. (Anonimuous, 1980). Using the Kjeldahl method is: take 3 grams example, enter into a Kjeldahl flask, add 3 grams Zelenium and 25 ml of concentrated H₂SO₄, then heated so that the green color becomes clear. Once cool, dilute with 250 ml of distilled water and moved to 500 ml boiling flask that had contained there in stone boiling, add 30 %

Teltje Koapaha and Tineke Langi, are with Lecturer in the Faculty of Agriculture, University of Sam Ratulangi Manado Indonesia

NaOH destillation. Furthermore Destillation accommodated 2/3 parts, which are accommodated in the erlenmeyer containing 0.25 N, H₂SO₄ (25 ml) with methyl blue indicator. Titration with 0.5N NaOH until the color changes. Protein levels obtained by the formula:

ml blank - ml titration / grams Example

b. Fat levels. (Sudarmadji, et.al.1981). Uses Soxhlet method are: first sample was dried in an oven to constant weight (105°C) , weigh 5 grams honey and put in Soxhlet. Circulate cooling water through the condensor. Add the extractor and hexane as extraction for 4 hours, repeated for 2 hours. Residues with hexa hexane was distilled until all evaporated and collected as distillate. And residues present in fat pumpkin, a heavy grease and oil.

c. Sugar levels. Determination of sugar refractometer manner, namely Samel was taken with a pipette, and then place it in a glass apparatus. Glass previously cleaned with alcohol. The result can be read after turning the screw where the needle will indicate clearly the limit.

d. Color, taste, smell, are doing with organoleptic testing, which is based on the acceptance test, using a hedonic scale. A level scale is expressed with a value of 1 to the value of 9, namely: Value 9 (Very much like), 8(Very Like), 7(Love) ,6 (kinda like), 5 (regular), 4 (somewhat like), 3. (do not like), 2. (very unlikely), 1. very strongly dislike). Using the 10 panelists, panelists assessment outcome data were analyzed by analysis of variance.

E. Variable Observations and Measurements

Variables observed and measured in this research is as follows:

1. Level of Protein
2. Levels of Fat
3. Sugar
4. Colors, taste, and smell

III. RESULT AND DISCUSSION

A. Content of Protein, Fat and Sugar

The results of the analysis of protein, fat and sugar from coconut honey can be seen in Table 6 content of protein , fat and sugar from coconut honey.

TABLE VI
CONTENT OF PROTEIN , FAT AND SUGAR FROM COCONUT HONEY

Perlakuan	Kandungan					
	Protein (gram)		Lemak (gram)		Gula (%)	
	Kelapa Dalam	Kelapa Hibrida	Kelapa Dalam	Kelapa Hibrida	Kelapa Dalam	Kelapa Hibrida
A (0 gram)	0,3179	0,3157	0,0496	0,0118	3,05	1,67
B(50 gram)	0,3152	0,3161	0,0483	0,0112	26,60	26,15
C(100 gram)	0,177	0,3175	0,0483	0,0116	50,75	44,64
D(150 gram)	0,3190	0,3182	0,0483	0,0112	60,07	58,86
Rata-rata	0,3175	0,3169	0,0483	0,0117	35,12	32,83

B. Taste, Smell and Colour

Tests conducted on the organoleptic attributes of taste, smell and color, average results of an assessment of the taste of Coconut Honey produced can be seen in Table 7 .

TABEL VII
AVERAGE RATINGS PANELISTS TO TASTE COCONUT HONEY

Varieties of Coconut	Average of Treatment (gram)			
	0	50	100	150
Dalam	1,86	5,46	7,46	7,26
Hibrida	1,83	5,46	7,40	7,30

Table 7 shows the treatment of the addition of sugar 0 grams on admission panelists, showed an average value of 1.86 or really do not like the taste of Honey Coconut in scale (hedonic scale).

Treatment of the addition of sugar 50 grams, 100 grams, and 150 grams of the panelists for Honey Coconut acceptance in the range of average values of 5.46 to 7.46 or a little like to like.

For Honey Coconut Hybrid, the addition of 0 grams, acceptance of panelists to taste honey, giving an average score of 1.83 or do not really like. Treatment of the addition of sugar 50 grams, 100 grams and 150 grams, acceptance panelists to taste Honey revolves around the rat - average value of 5.46 to 7.4 or a little like to like.

Results of analysis of variance (appendix 1 and 2), indicating that the addition of sugar treatment gives different results. The next test of the BNT seen that treatment C (addition of 100 grams of sugar) did not differ by treatment D (addition of 150 grams of sugar). This shows that in terms of making Honey Coconut flavor, the addition of 100 grams of sugar is quite unpopular. Due to the increase sugar to 150 grams will give the same acceptance. Average results of research panelist to smell of Honey Coconut generated, seen in Table 8.

TABEL VIII
AVERAGE ASSESSMENT OF THE ODOR PANELISTS HONEY COCONUT.

Varietas Kelapa	Rata-rata Perlakuan (Gram)			
	0	50	100	150
Dalam	4,0	5,6	6,3	6,6
Hibrida	3,3	5,6	6,3	6,6

In Table 8 shows that the addition of treatment 0 grams of sugar, panelists acceptance of the smell of honey showed an average value of 4.0 or rather do not like (on a hedonic scale). Treatment of the addition of sugar 50 grams, 100 grams and 150 grams, admission to the odor panelists Coconut Honey in the range of values 5.6 to 6.6 or a little like to like. For Hybrid Coconut Honey, Honey odor acceptance by panelists showed an average value of 3.3 or dislike the treatment 0 grams of sugar. Treatment adding 50 grams, 100 grams and 150 grams, acceptance panelist to smell rat Honey average value of 5.6 to 6.6 or a little like to like the hedonic scale.

The next test of the BNT in appendix 4, showed that treatment B (addition of 50 grams), C (addition of 100 grams) and D (adding 150 grams) is no different. This shows that in terms of making Honey Coconut smell, the addition of 50 grams of sugar is enough.

TABLE IX
AVERAGE RATING PANELISTS TO COCONUT HONEY COLOR

Varieties of Coconut	Rata-rata Perlakuan (Gram)			
	0	50	100	150
Dalam	4,0	5,6	6,3	6,6
Hibrida	3,3	5,6	6,3	6,6

In Table 9, it is seen that the addition 0 grams of sugar, honey color acceptance panelist on the resulting average value rat 3 or dislike for Coconut varieties. Treatment B (addition of 50 grams), C (addition of 100 grams) and D (the addition of 150 grams), the panelists acceptance Coconut Honey color ranges resulting in an average value of 5.1 to 7.16 or up like usual. LSD, showed that the addition of sugar treatment gives a real difference.

Honey of Coconut Hybrids, 0 grams of sugar treatment gave an average rating of 2.6 or do not like the color of Honey Coconut generated. Treatment B (addition of 50 grams), C (addition of 100 grams) and D (addition of 150 grams) gives an average value of 5.1 to 7.36 or so until like the hedonic scale. The results further by BNT (attachment 6), showed that treatment C (addition of 100 grams) and treatment D (adding 150 grams) provides no real difference. This suggests that in making Honey Coconut terms of color, the addition of sugar 100 grams of treatment is sufficient favored, since the addition of 150 grams of sugar, gives the same acceptance.

From the above data, it can be said that overall the addition of sugar to the taste panelists to Coconut Honey produced showed a quadratic relationship. This means that the addition of sugar has limits, in terms of taste panelists to raise the image quality produced coconut. When the limit is passed, meaning the addition of sugar is no longer raised, but precisely lowers the taste panelists image as shown in Figure 3.

IV. CONCLUSION

1. Sensory Test (A level) suggests that the scheme Coconut (Coconut Milk without cream) both used to be processed into Honey Coconut
2. Quadratic relationship between administration There granulated sugar with honey flavors panelist to the resulting oil . Provision / addition of as much as 100 grams of sugar and 150 grams in the manufacture of coconut honey liked panelists , and for adding / giving 100 grams of sugar is considered as an efficient treatment of boundary.

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