

Original Research Article

FAT AND PROTEIN COMPOSITION AND CONSUMER ACCEPTABILITY OF MODIFIED THAI ICETE (CHA-YEN)

ABSTRACT

Aims: Thai tea is known as Thai ice or "Cha-yen". Apart from Cha Yen or Ceylon other ingredients that may be added to Thai tea are orange water, star anise, sour seeds or red and yellow food coloring and sometimes there are also those who add spices. The purpose of this study is to design a green tea mocca flavor variant that consumers like and combine the green tea mocca flavor variant with seaweed toppings and to find out the proximates and food safety aspects (dyes) of contemporary ice drinks, namely green tea mocca.

Place and duration: This research was analyzed at the Makassar Health Laboratory Center from January, 5 to February, 5, 2023.

Study design : The study (proximate test) was processed descriptively where data was taken from 2 different cafes and then asked to make a taste whose composition and volume comparison had been determined by the researcher. While the sensory test uses an independent T-test. The research data were analysed using analysis of variance (SPSS version 20). Research parameters are color and nutritional value (protein and fat) with treatment A1 : hot tea : sweetened condensed milk : Mocca = 50 ml : 12 ml : 15 grams, A2 : hot tea : sweetened condensed milk = 50 ml : 18 ml : 15 grams and A3 = hot tea : sweetened condensed milk : Mocca = 50 ml : 24 ml : 15 grams.

Results: The research result of the addition of different sweetened condensed milk gave different proximate test result. the average protein and fat content was the A1 treatment = fat content 0.35% and protein content 0.70%, treatment A2 = fat content 0.36% and protein content 0.80% while A3 = fat content 0.36% and protein content 0.87%. While the sensory test the more sweetened condensed milk given the bitter taste of the mocca coffee the less the Thai-tea drink. So that the higher the addition of sweetened condensed milk (A3=24 ml) the more the panelist liked it.

Conclusion: The color combination of the two cafes that compose or design colors is very attractive (25 panelists). While the sensory test the more sweetened condensed milk given the bitter taste of the mocca coffee the less the Thai-tea drink. So that the higher the addition of sweetened condensed milk (A3=24 ml) the more the panelist liked it. Proximate quality A3 = fat content 0.36% and protein content 0.87% Food safety analysis for color also gives safe results (qualitatively negative) and is allowed.

Keyword: *Green Tea, Mocca, Seaweed, Thai Tea*

1. INTRODUCTION

Thai tea is known as Thai ice or "Cha-yen". Apart from Cha Yen or Ceylon other ingredients that may be added to Thai tea are linden water, star anise, sour seeds or red and yellow food coloring and sometimes there are also those who add spices.

Thai tea also has ingredients that can make the body healthy. A source of carbohydrates, as there is sugar and sweetened condensed milk used in the concoction of this drink. Rich in Isoflavones have antioxidant, protein and calcium properties that are excellent for the body. Black tea as the main ingredient of Thai tea is a source of isoflavones, which have antioxidant properties. As we know that this antioxidant property is needed by the body to prevent cancer or coronary heart disease. Protein and Calcium, The milk used in Thai Tea contains protein and calcium which are also very good for the body. Fat, Thai Tea is also a high-fat drink, which is obtained from sugar and milk. The fat content is also higher in Thai Tea which uses coconut milk (Ishlahiyyashop 2021).

Thai tea is a contemporary drink that is widely sold and is increasingly felt by the needs and benefits by the community because in addition to giving the impression of cheap, easy to get and delicious taste and suitable for the tastes of most people also has variations that develops so wide that it nourishes the growth of snack food vendors everywhere including café cafes. Although snack foods have these advantages, it turns out that snack foods are still a risk to health due to concerns about the use of coloring additives. (Sipakkar, 2021)

In order for the public to avoid food and drinks that can endanger health, the government has set standards and requirements so that food and beverages are suitable and safe for consumption by the public in this case stated in Law Number 23 of 1992 concerning health article 21 paragraph 1: "Food and beverage security is organized to protect the public and food and beverages that do not meet health requirements" (BPOM RI 2010).

The aims of this study: Designing green tea mocca flavor variants that consumers like and analyzing the fat and protein levels as well as color additives of green tea mocca topping seaweed pudding.

2. MATERIAL AND METHODS

MATERIALS

The raw materials used in this study were green tea, mocca coffee sachet, sweetened condensed milk technical seaweed (seaweed flour). Chemical Analysis Materials Technical concentrated H₂SO₄ and p.a.(pro analyst chemicals), HCl 0.1 N, NaOH 32%, 5 ml H₃BO₃ Methyl red indicator, phenolphthalein (pp) indicator, Alcohol 70%, CaCO₃, oxalic acid, concentrated HCl. K₂SO₄. Na₂S₂O₃ solution. BCG-MR indicator. Ethylmethylketone. Acetone.

RESEARCH PROSEDURE

Ingredients:

- 1/2 cup hot tea (50 ml) of (5 tea sachets : 500 ml of hot water)
- 3 tbsp (15 g) creamer powder and mocca cafee
- 2 tbsp (10 g) granulated sugar
- 2 tbsp (12 ml) white sweetened condensed milk
- Ice cubes
- Technical Seaweed (seeweed Flour)

Stir greentea powder and granulated sugar into hot water then add sweetened condensed milk and Mocca powder (as per the research treatment, add ice cubes. Add seaweed toppings from Technical Seaweed Meal Pudding.

Research Treatment

A1 = hot tea : sweetened condensed milk : Mocca cafee = 50 ml : 12 ml : 15 grams

A2 = hot tea : sweetened condensed milk : Mocca = 50 ml : 18 ml : 15 grams

A3 = hot tea : sweetened condensed milk : Mocca = 50 ml : 24 ml : 15 grams

EXPERIMENTAL DESIGN

Chemical analysis : Proximate Analysis (Parameter to be observed is fat and protein content) and dye analysis.

Sensory analysis : Panelist of 25 people gave an assessment based on the level of preference for the sample presented and stated the assessment in the checklist. Panelist ratings ranged from very like (6) like (5) really like (4) neutral (3) less like (2) dislike (1). (Organoleptic assessment list is attached).

The experimental design used in this study was to use an independent t-test (independent t-test).

ANALYSIS DATA

The research data were analyzed using analysis of variance using SPSS version 20

3. RESULTS AND DISCUSSION

3.1 Beverage Profile

Figure 1. show the profile of the Thai Tea drink in a glass designed with interesting color variations. The sale of ice drinks in the Makassar (Antang) area, many are individual businesses and some are managed by café agents around the Antang area of Makassar city began to scatter along the main road of the Antang axis. The sales price of contemporary drinks with different types is \$1 - \$2.

Sanitation from traders, serving tools and the environment of selling on contemporary ice drinks are regulated in the Ministry of Health Regulation Number 942 of 2003 concerning Guidelines for Sanitary Hygiene Requirements for Snack Food. The results of comparison with Government Regulations, state that some are in accordance with the Permenkes (Regulation of the Minister of Health of the Republik of Indonesia), from all articles and paragraphs, some are not. The profile of the drinks can be designed by the bartender very attractive to café customers. Of the 25 respondents interviewed spontaneously about the design or how to arrange the color of thaitea mocca drinks topped with seaweed, all gave satisfactory scores (4-5) of the design or liking for the color arrangement of the appearance of the drinks made. Give me a model of thai tea drink model layer over mocca cofee. The usual ones are sold in café cafes






Figure 1. Bartender Design (Profile of The Thai Tea Drinks)

3.2 Proximate Analysis and Coloring of Green Tea Mocca Drink

The analysis carried out is a proximate analysis, namely protein and fat levels. Food safety analysis includes qualitative dye analysis.

Table 1. Research Results of Proximate and Dye Green Tea Mocca topping Seaweed

Beverage profile (Design Bartender)			
Treatment	A1 : hot tea : sweetened condensed milk : Mocca = 50 ml : 12 ml : 15 grams	A2 : hot tea: sweetened condensed milk = 50 ml : 18 ml : 15 grams	A3 = hot tea : sweetened condensed milk : Mocca = 50 ml : 24 ml : 15 grams
Proximate levels	Fat : 0,35% Protein : 0,70 %	Fat:0,36% Protein : 0,80%	Fat:0,36% Protein : 0,87%
Dye	Negative	Negative	Negative

The average value of protein content in greentea mocca topping seaweed ranges from 0.70% for A1 treatment, A2 0.80% and A3 = 0.87%. The effect of different additions of different foodstuffs on the protein content of greentea mocca ice drink topping seaweed can be seen in table 1.

The results obtained protein levels that were treated with condensed milk concentration into the drink (greentea that had been dissolved in hot water, condensed chocolate milk, and mocca cafee flour) coated with seaweed toppings. Liquid condensed chocolate milk ultimately has a higher protein influence as in A3 treatment than A2 treatment and A1 treatment, because it is from sweetened condensed milk. According to Santoso et al.(1999) the protein content of sweetened condensed milk is 8.1%. The combination of antra coffee and milk as well, gives a preferred taste sensation. In terms of nutrition, milk has a high content of carbohydrates, proteins and vitamins and minerals while coffee contains more caffeine, elkanittrin, amino acids. In terms of the benefits of milk as a source of energy and recovery, coffee stimulates energy. Coffee is considered to be able to help fat metabolism become a source of energy.

The combination of tea (greentea) and real milk is not good in terms of nutrition because the content of tannins and polyphenols in tea can interfere with the absorption process of protein i, because polyphenols and tannin acids can bind proteins in the intestine even though protein is needed for growth and development. The nutritional content of tea protein (0 grams)

According to Zakiah, (2020), the content of a cup of milk (243 ml) contains 74 calories, 3.2 grams of fat, 9.8 mg of cholesterol, 42 mg of sodium, 159 mg of potassium, 8.4 g of carbohydrates, and 3.1 grams of protein, 11 percent calcium and 3 percent of vitamin A. While the content of coffee, instant with sugar, taste of moka powder contains 459.9 calories, 64% carbohydrates, 31% fat and 5% protein (IDN Medis, 2020).

The average fat content value in greentea mocca ice drink topping seaweed pudding is influenced by the addition of different foodstuffs ranging from 0.35% A1, A2 = 0.36% and A3 = 0.36. The effect of different additions of different foodstuffs on the fat content of ice drinks can be seen in Table 1.

The results state that all drinks give the same value in their fat content, which is caused by the same components of foodstuffs, namely a mixture of milk, coffee and tea. It is known that SKM milk (sweetened condensed milk) contains a total fat of 30% protein 3% and 67% carbohydrates (Batubara S et al., 2023)

The use of dyes and artificial sweeteners has been regulated by the government through the Regulation of the Minister of Health of the Republic of Indonesia No. 239 / MENKES / PER / V / 1985 (Menkes : Regulation of the Minister of Health of the Republik of Indonesia)concerning the use of coloring agents, concerning food additives and SNI 01-2895-1992 concerning the use of additives.

Identification of synthetic dyes by qualitative methods is usually done as a preliminary identification (Mudjajnto, 2005). The results of qualitative dye analysis state that the synthetic dye used is negative (qualitative analysis).

4. CONCLUSION

The color combination of the two cafes that compose or design colors is very attractive (25 panelists). While the sensory test the more sweetened condensed milk given the bitter taste of the mocca cafee the less the thai-tea drink. So that the higher the addition of sweetened condensed milk (A3=24 ml) the more the panelist liked it. Proximate quality A3 = fat content 0.36% and protein content 0.87% Food safety analysis for color also gives safe results (qualitatively negative) and is allowed.

REFERENCES

- Anonymous.. 2020. "Thai Tea "A Contemporary Drink from Thailand. [Http ://www. Campaniarestauran. Com/Thai-Tea-Modern-Drinks-from -Thailand](http://www.Campaniarestauran.Com/Thai-Tea-Modern-Drinks-from-Thailand). Accessed 21 Juli 2020.
- [BPOM RI] Food and Drug Supervisory Agency. 2010. Herbal Preparation Reference. Jakarta: Badan Food and Drug Supervisory Agency.
- Batubara S. Et al. 2023. Sweetened Condensed Milk High in Sugar and Low in Nutrition (a collection of doctors). (Accessed 2 Februari 2023).
- Brannon. 2007. Green Tea: New Benefit from an Old Favorite. *Nutrition Dimension Inc*: 1-6.
- Effendi DS, Syakir M, Yusron M. 2010. Cultivation and Postharvest Tea. Jakarta: Center for Plantation Research and Development.
- Gardjito. 2011. Yogyakarta Tea: Kanisius page 20
- Ghani. 2002. *Basics of Tea Cultivation*. Jakarta: Penebar Swadaya.

- Global Tea Hut. 2015. Special Harvest Moon Extended Edition "Morning Dew" Tea Powder The Cha Jing By The Tea Saint, Lu Yu *Tea and Tao Magazine*.
- Ishlahiyashop 2021. In Sipakkar. 2021. Analysis of the Effect of Positioning on the Purchase Decision of Thai tea drinks in Students of the Faculty of Economics. Riau Islamic University. (Skripsi) Pekanbaru.
- Karori *et al.* 2007. Antioxidant Capacity of Different Type of Tea Products. *African Journal of Biotechnology* 6:2287-2296.
- Mahfudloh A. 2008. The Success and Growth of Tea Cuttings (*Camellia sinensis* (L) O Kuntze) GMB 4 and GMB 7 clone of Several Kinds of Growing Media (skripsi). Bogor, Bogor Agricultural Institute.
- Melati HP. 2009. *The Magic of Tea: A Million Benefits and Stories a Cup of Tea*. Jakarta: Hikmah. page 9
- Najibah. 2002. The Meaning of Praying to Ancestors in the Concept of Confucianism (Skripsi). Jakarta, IAIN Syarif Hidayatullah Jakarta.
- Panggalih AD. 2010. Effect of Packaging Type Storage Temperature on the Shelf Life of Green Tea (Skripsi). Bogor. Bogor Agricultural Institute.
- Poltekes Bandung, 2002. Guide and Practicum Journal of Food Additive Analysis Department of Health Analysis Poltekes : Bandung
- Rahayu M, Susianti S, Sihontang VBL. 2012. A Preliminary ethnobotanical study on useful plants by local communities in Bodogol Lowland Forest, Sukabumi, West Java. *J Trop Biol Conserv* 9(1):115-125.
- Rahardian D. 2011. Black Tea Processing Technology. Eleven March University, Surakarta.
- Rahimah. 1996. Tea Plantation.. Medan: Faculty of Agriculture, University of North Sumatera.
- Rohdiana D. 2015. Teh: Process, Characteristics and Functional Components. *Food review Indonesia* X (8): 34-37.
- Santoso, Soegeng dan Anne Lies Ranti. 1999. Health and Nutrition. Publisher PT PT Rineka Cipta, Jakarta.
- Sari DN. 2009. Green Tea Production Process at PT Rumpun Sari Kemuning 1 Ngargoyoso Karanganyar [skripsi]. Surakarta, Sebelas Maret University.
- Sartika D. 2003. Management of Tea Plantation (*Camellia sinensis* (L) O Kuntze) at Rumpun Sari Kemuning Plantation PT. Astra Agro Lestari Tbk. Karang Anyar Jawa Tengah [Skripsi]. Bogor, Bogor Agricultural Institute.
- Sipakkar. Okaditiya. 2021. Analysis of the Effect of Positioning on the Purchase Decision of Thai tea drinks in Students of the Faculty of Economics. Riau Islamic University. (Skripsi) Pekanbaru.
- Soekarto ST. 1990. Quality Control and Standardization. Bogor: Departemnt of Cultural Education, Inter-university Center for Food and Nutrition IPB.
- Songnian S. 1999. *Zhongguo Diyu Wenhua Congshu: Dianyun Wenhua*. Shenyang: Lianong Jiaoyu Chunbnshe.
- Subantoro R. 2005. Cuttings in Improving the Quality of Tea (*Camellia Sinensis* O.K). Production . *Jurnal of Agricultural Sciences* 1(2):75-85.
- Supriyanto. 2014. Study on Making Cocoa Leaves tea (*Theobroma cacao* L) as Refreshment Drink . *AGRITECH* 34(4):422-428.
- Tan H. 2014. 8 Chinese People's Cultural festival. Tionghoa.info/8-festival-budaya-orang-Tionghoa/ (accessed 13 Desember 2017).
- Tanuwijaya Y. 2009. Tea Ceremony as a Part of Chinese Culture [skripsi]. Depok: Faculty of Cultural Sciences University of Indonesia. Wikipedia, Moka. wikipedia.org/wiki/Moka, accessed 7 November 2020.
- Wiseman. 2002. *Nutrition and Health*. New York: Taylor & Francis Inc.
- Xu N, Chen ZM. 2002. Green Tea, Black Tea and Semi-fermented Tea. In: Tea: bioactivity and therapeutic potential. Medicinal and Aromatic Plants-Industrial Profiles. Taylor and Francis, London.
- Zakiah. 2020. in Towaha J. 2013. Content of Chemical Compounds in Tea Leaves (*Camellia sinensis* L.). *News of Industrial Plant Research and Development*. 3(19).

UNDER PEER REVIEW