Journal of Research in Food and Nutrition
Volume 1, Issue 1, 2024, PP: 19-21
www.aytinpublications.com

Research Article

Development of Chayote Leaf Tea

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Abstract

Chayote leaves are boiled and made into a tea infusion to help reduce symptoms of coughs, colds, indigestion, kidney stones, and hypertension (Thao, 2018). In the process of decoction, it involves long boiling where some of the nutrients are lost and it could create other chemical reactions that might harm the human that consumes it. The study was conducted to develop Chayote Leaf tea using different tea processes and determine its general acceptability. The young and matured leaves were freshly harvested and underwent into three (3) tea processing namely white tea, green tea, and black tea. The sample products were evaluated by 90 respondents using 9-point Hedonic Scale. The result revealed that the 3 tea processes were rated Very Much Like. However, the green tea processing of Chayote Leaf got the highest mean amongthe processes. The study also concluded that Chayote leaf were acceptable in different tea processes.

Keywords: Chayote Leaf, Tea Processing, General Acceptability.

Aricle Information

Recieved: 30 September 2024

Accepted: 23 October 2024

Published: 26 October 2024

Cite this article as:

Emilie S. Estelloso, Jenny B. Mamacus, Janice E. Reynes, *et al.* Development of Chayote Leaf Tea. Journal of Research in Food and Nutrition, 2024; 1(1); 19-21.

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Introduction

Tea has been promoted for having a variety of positive health benefits. Drinking tea has been a health-promoting habit since ancient time. It helps to prevent wide variety of diseases due to its dietary source of biological active compounds (Khan & Mukhtar, 2007). Recent studies suggest that green tea may help reduce the risk of cardiovascular disease and some forms of cancer, promote oral health, reduce blood pleasure, help with weight control, improve anti-bacterial and antivirastic activity, provide protection from solar ultra violet light, and increase bone mineral density.

Tea is also to have anti-fibrotic properties, and neuro protective power (The Complete Book of Natural and Medicinal Cures, trans. 1996). There are variety of sources taken in the parts of the plant to be made as tea. Local people making decoction in the leaves of Chayote for curing stomach ache. Chayote has potential benefits on human health. Its fruit, stem and leaves contain multiple nutrients and has anti-inflammatoryproperties that can aid in the treatment of high-blood pressure, kidney stones and indigestion. It can also help support weight loss efforts, as it is low in calories and fibrous (Viera et. al, 2019). It has several bioactive compounds known for health benefits (Vieira et al., 2019). Putri, et al., (2013) conducted a study on safer alternative for hyperuricemia which they administered Chayote leaf extracts. Researchers confirmed a significant decrease of at least 25% of uric acid levels after using the appropriate effective dose of extracts. The study noted that the uric acid lowering effect of Chayote could be attributed to chemicals called flavonoids.

Decoction is the common method used to make herbal tea however it involves long boiling where some of the nutrients are lost and it could create other chemical reactions that might harm the human being. In order to prevent the danger of wrong processes, the researchers were encouraged to develop a Chayote leaf tea which undergoes correct process of making tea.

Objectives

This study was conducted to develop Chayote leaf tea. Specifically, it aimed to:

1. Develop chayote leaf tea using different tea processing;
2. Determine the general acceptability of Chayote leaf tea.

Methodology

Development of Chayote Leaf Tea Processes

The development of Chayote leaf tea wasmade into three processes in making tea namely white, green, and black tea. It used matured and young leaf of Chayote. The entire process of producing tea can be broken into the following steps: withering, rolling, oxidization, drying, sorting, and packing.

General Acceptability of the Chayote Leaf Tea

The three (3) sample products made in different tea processing were evaluated by 90 respondents. The 9-point Hedonic scale was used to determine its general acceptability. Descriptive statistic namely frequency count and weighted mean were used to describe the gathered data.

Presentation, Analysis and Interpretation of Data

Develop Chayote Leaf Tea

The Chayote leaves was treated and underwent disinfection process. Several trials were conducted to standardize the process of making white, green, and black tea. The figure 1 below show the three processes.

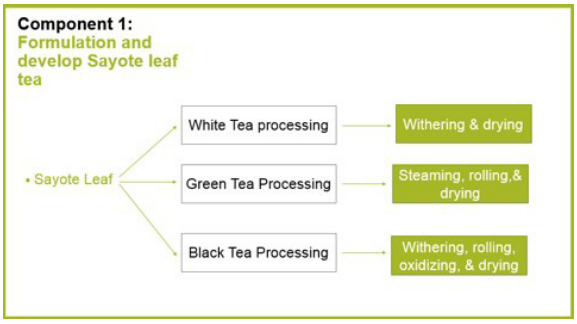

Figure 1. *Development of Chayote Leaf Tea*

The processes involved appropriate temperature and length of time to wither the chayote leaves. Different preparation and processes were made in order to obtain the standard making of tea. The white tea processes which the leaves were withered at 72 hours and dried it at 65 Celsius. Meanwhile the green tea process, the leaves were steamed, cooled and gently rolled one by one. Another rolling was done before drying (mechanical drying) at 80 C. And lastly, black tea process, the leaves underwent withering for 13 hours and then rolling. The rolled leaves allow it to oxidize/ferment for 3 hours and dry it in at 65 C. The finished products were packed and sealed. As cited in the book of Mudgil and Barak (2018) that witheringprocedure for short period of time (12 hours) at low temperature (10 C-15 C) produces good flavored tea as compared to long time period (20-30 hrs) at high temperature (25 C-30 C). Moreover, fermentation process affects color and flavor characteristics of the tea.

The General Acceptability of Chayote Leaf

Table 1 shows the general acceptability of Chayote Leaf tea. The data revealed that the sample product of three processes were rated as Very Much Like and obtained the weighted mean of 8.07, 8.16, and 8.12 respectively. It implied that the product was appreciated and accepted by the ninety (90) respondents. Moreover, green tea process got the highest mean among the three tea processes. Hilal (2017) said that fermentation affects the smell and taste of the tea. The taste is no more bitter but mild and gives pleasant mouth feel. Black tea is made with fermented tea leaves and has the highest caffeine content and forms the basis for flavored teas like chai, along with some instant teas (Edgar, n.d). Moreover, green tea is made with steamed tea leaves and has a high concentration of Epigallocatechin gallate (EGCG). Green tea has most antioxidant as well as antibacterial against oral and food-borne pathogen. Leafy herbal tea extracts may have the potential as natural preservativesin various foods, Oh et. al (2013).

Table 1. *The General Acceptability of Chayote Leaf Tea*

	Mean	Verbal Description
T1-White Tea process	8.07	Very Much Like
T2-Green Tea process	8.16	Very Much Like
T3-Black Teaprocess	8.12	Very Much Like

Legend:

Nominal range	Description
8.20- 9.0	Extremely Like
7.30- 8.19	Very Much Like
6.40- 7.29	Moderately Dislike
5.50-6.39	Slightly Dislike
4.60-5.49	Neither Like or Dislike
3.70-4.59	Slightly Dislike
2.80-3.68	Moderately Dislike
1.90-2.79	Very Much Dislike
1.0-1.89	Extremely Dislike

Conclusions, and Recommendations

Based on the findings, the researchers concluded that Chayote leaf tea differ its taste according to its tea processes. The tree (3) types of tea were appreciated by the respondents and rated it with Very Much Like. Moreover, the green tea process got highest mean among the processes.

Based on the result, the researchers recommend the following for the improvement of the study.

1. Conduct organoleptic evaluation to the ChayoteLeaf Tea.
2. Submit the Chayote Leaf Tea for nutritional and phytochemical analysis.
3. Conduct marketability study on Chayote leaf tea.

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