Royal International Global Journal of Advance and Applied Research
Peer Reviewed International, Open Access Journal.
ISSN: 2998-4459 | Website: https://rlgjaar.com Volume-2, Issue-7 | July - 2025

Original Article

Organoleptic Analysis of Edible Tea Containing Natural Dye Extract of Clitoria ternatea Flower source

Dattaguru Chandrakant Patkar
Dr. A. P. J. Abdul Kalam University, Indore, P. O. Jhalaria, Arandia, (M.P.), India

Manuscript ID:
RIGJAAR-2025-020710

ISSN: 2998-4459
Volume 2
Issue 7
Pp.49-51
July 2025

Submitted: 06 June 2025
Revised: 20 June 2025
Accepted: 10 July 2025
Published: 31 July 2025

Correspondence Address:
Dattaguru Chandrakant Patkar
Dr. A. P. J. Abdul Kalam University, Indore, P. O. Jhalaria, Arandia, (M.P.), India
Email: dcpatkar11@gmail.com

Quick Response Code:

Web. https://rlgjaar.com

DOI:
10.5281/zenodo.16874928

DOI Link:
https://doi.org/10.5281/zenodo.16874928

Abstract

This research work is for the analysis of tea as a type of food which contain natural dye source. This dye which was used in the tea was extracted from clitoria ternatea (aparajita) flower as a natural food dye. The aparajita flower dye was added into the tea and taken as a sample of food product for Organoleptic Analysis. This tea was prepared by homemade method of tea preparation. Some parameters which are important during the organoleptic evaluation are used for this analysis of tea sample. In this research work the given tea samples was evaluated by taking responses by the selected members. And these selected members were expert in this organoleptic Analysis. This evaluation was based on score points given by the members to these parameters. The quality of this tea as a food containing aparajita flower dye was analyzed on the basis of score points taken by the selected members for evaluation. The given organoleptic analysis of the tea containing blue dye of clitoria ternatea flower is performed by extracting this dye thorough pure water medium. This bluish food dye then converted onto the powder formed by filtration and evaporation of this aqueous solution this dye. The tea containing this aparajita dye was edible and acceptable.

Keywords: *Aparajita dye, tea, organoleptic analysis, parameters, food quality.*

Introduction

The food dye is important to the acceptability of food by the consumers. The food is essential thing to the all types of organisms. The interest toward the good quality and attractive food is increased. The edible attractive and good quality tea can be produced by using some natural colours. The food production industries are also giving challenges for such a food products. The synthetic dyes have some allergic effects due to toxic properties. The use of such synthetic dyes can show imbalance in our environment and also can produce environmental pollution. This natural food dye can be used to minimize the use and effects of synthetic food colours [1]. The food color extracted by natural sources is giving rich quality and good appearance to the food. The aparajita flowers as natural food colour source and can be used for this tea preparation [2].The natural food dye production is necessary to minimize the use toxic synthetic dyes. The food dye obtained from aparajita. The clitoria ternatea or aparajita flowers are edible and providing bluish colour to the tea and therefore this tea is very attractive appearance. These beautiful aparajita flowers also have some important pharmacological activities and can be used in preparations of medicine [3].The natural food dye which added to the food products should give good appearance to the food and should not change the unpleasant taste to that food product. In this research the food quality of aparajita flower tea is evaluated.

Materials: Clitoria ternatea (aparajita) flower source, Water, pots, writing pen, glass cups, ingredients for tea.

Objectives:

The research work for natural food products can increase the awareness about the health and the nature. The increasing demand of natural food by the consumers can fulfill through the development in natural food products. The use of natural food dye during food production is beneficial for the food industries to increase the acceptability of food by the consumers.

Data and Methodology:

The aparajita flowers source were collected from local gardens.

How to cite this article:
Patkar, D. C. (2025). Organoleptic Analysis of Edible Tea Containing Natural Dye Extract of Clitoria ternatea Flower source. Royal International Global Journal of Advance and Applied Research, 2(7), 49–51. https://doi.org/10.5281/zenodo.16874928

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This aparajita flowers dye were extracted through the aqueous medium. The good quality materials for preparation of tea were taken from grocery shop. This tea product was prepared in pure water by using homemade preparation method.

Extraction of dye:

The collected aparajita flowers were washed by using clean water. Then these flower chopped by knife. About 80g blue colour aparajita flowers were added to 1 liter of pure water. This blue colored dye solution was stirred for 15 min. And then this blue coloured aqueous dye solution was kept for 10 hrs. After filtration the blue coloured dye matter was obtained from this aqueous solution. The bluish colour dye matter was obtained after evaporation of this moister containing dye of aparajita flowers source

Dyeing of food products:

The required quantity of blue coloured dye was obtained from the aqueous solution of aparajita flowers. And this dye was added into the tea samples for this analysis. The dried aparajita flowers can be used for preparation of this tea. The required tea samples were prepared by adding powder form of dye while preparation of this tea.

Evaluation method:

The quality analysis of aparajita flower containing tea was performed by the responses taken for some parameters of organoleptic evaluation from five selected members. The important parameters which considered for this analysis are taste, smell and appearance of tea sample. These five experienced members were expert in this evaluation. The score points as responses for this evaluation is recorded in score tables. The organoleptic evaluation was performed three types of samples of this aparajita flower tea. The score scale method was used for this organoleptic evaluation of aparajita flower tea. These three samples of tea were prepared by changing the concentration of dye in the tea product. The score for the parameter for this analysis was maximum up to the 6 score points. Different concentration of dye in the tea is given in following table,

Table 1. Concentration of dye in tea samples

For tea samples	
T_1	0.1 g dye in 100 ml of tea
T_2	0.2 g dye in 100 ml of tea
T_3	0.3 g dye in 100 ml of tea

The additions of all points given by the five members were taken as total points for that parameter of evaluation.

Result and discussion:

The result of this oranoleptic evaluation is based on the score points given by the selected five members. The quality of given tea samples were evaluated by using thefollowing table of score point range for parameter of evaluation of tea samples.

Table2: Score Points Range for Tea Samples

Score points range	
1 or 2 points	Bad quality of tea
3 or 4 points	Good quality of tea
5 or 6 points	Very good quality of tea

a. Evaluation of taste of tea samples:

The evaluation of taste of aparajita flower dyed tea is performed by taking a full cup of tea by the members. This taste of tea was edible and acceptable for all tea samples.The aparajita dye and other ingredients of tea were providing sweet taste to the tea samples. This taste of tea of the given sample was sweet and gave satisfaction to selected members for this analysis. The acceptable sweetness of tea did not change for all these tea samples prepared from the aparajita flower dye. The score for taste of tea samples is given in following table.

Table 3: score for taste of tea samples

Five Members	Tea Sample	Tea Sample	Tea Sample
	T_1	T_2	T_3
A	4	5	4
B	5	6	6
C	4	4	5
D	6	5	4
E	4	6	5
Total	23	26	24

The score for taste of tea samples which given in above table3 is showing the taste of T_2 samples of tea was very good in quality.

b. Evaluation of appearance of tea samples:

The appearance of aparajita Flower dyed tea samples were analysed. These tea samples had bluish shade appearance. The T_3 sample of tea has more score in appearance and T_2 sample also shows good appearance. These all tea samples of different concentration of aparajita flower dye were giving acceptable appearance by the five members.

Table 4: Score for Appearance of Tea Samples

Five Members	Tea Sample	Tea Sample	Tea Sample
	T_1	T_2	T_3
A	5	5	5
B	4	5	6
C	3	6	4
D	6	5	5
E	4	4	6
Total	22	25	26

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The score for appearance of tea samples was given in table 4 is showing that the T_3 sample of tea is very good in appearance as per this evaluatio

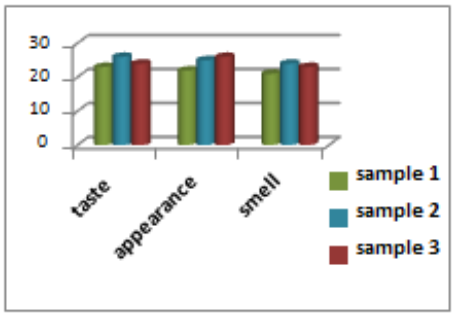
c. Evaluation for smell of tea samples:

The smell of tea samples which prepared by aparajita Flower dye was evaluated. The smell for all samples of tea was similar. The aparajita flower dye which added to the tea samples was based on acceptability of the smell given by tea these samples.

Table 5: Score for Smell of Tea Samples

Five Members	Tea Sample T_1	Tea Sample T_2	Tea Sample T_3
A	4	5	4
B	3	4	6
C	6	5	4
D	5	6	5
E	3	4	4
Total	21	24	23

Chart 1: Total score for tea samples:



The score for this organoleptic evaluation given in above tables and chart is showing that, the given T_2 samples of tea is more acceptable sample and also has better quality as per this evaluation. for smell of tea sample given in table5 was comparatively more to the T_2 sample of tea. As per score for smell the above all tea samples gave almost same smell to the members of this evaluation.

Conclusion:

This performed organoleptic evaluation for tea products by the five members gave the data and showing that the tea sample T_2 is very good in taste. The score for appearance of this aparajita flower tea was comparatively more to T_2 sample of tea. This aparajita flower was not giving unpleasant taste to the all tea samples. These all samples of aparajita flower tea were good in appearance. The T_2 sample of tea was better in quality and also more acceptable than tea samples. Thus, given T_2 sample can be used for best tea preparation.

Acknowledgment
I am Dattaguru Chandrakant Patkar thankful to Dr. Neeta Gupta, from Dr. A. P. J. Abdul Kalam University, Indore, for granting permission to carry out the work.

Financial support and sponsorship
Nil.

Conflicts of interest

The authors declare that there are no conflicts of interest regarding the publication of this paper.

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