Pratidhwani the Echo
A Peer-Reviewed International Journal of Humanities & Social Science
ISSN: 2278-5264 (Online) 2321-9319 (Print)
***Impact Factor: 6.28** (Index Copernicus International)*
Volume-XI, Special Issue, June 2023, Page No.195-197
Published by Dept. of Bengali, Karimganj College, Karimganj, Assam, India
Website: http://www.thecho.in

Study of Acidity in Different Samples of Tea Leaves

Bikash Shit
State Aided College Teacher, Department of Chemistry, Panchmura Mahavidyalaya, Bankura, West Bengal, India

Abstract:

Tea can be described as an agricultural plant that is industrially important because of the produce of its leaves, when immersed in hot water. Tea however is an aromatic beverage that can be prepared in several different ways.

Each method of preparation has a certain effect on the acidity of the beverage. My aim in this project is to capture the difference in the acidity of the beverage by using a universal indicator.

Tea after water, is the world's most popular beverage of consumption, as it is not extremely expensive, and has a pleasant texture and aroma. The leaves are then introduced into hot water, which cause a release in the flavour and color contained in the leaf of the plant. Some people prefer to drink tea in this form, while others prefer it with milk. All this activities cause different outcomes in the pH value of the beverage.

Keywords: Caffeine, Camelia sinensis, Tannins, PH paper, Tea.

Introduction: Tea has become indispensable to the modern society today. An average person in India starts his day with a cup of tea. Now days, a cup of tea has become a pleasant and an almost irresistible offering at any social, official or business meeting. A cup of tea is often taken as a mind-freshner. It is found enjoyable by people of all ages and in all walks of life. This can be primarily attributed to the presence of a stimulant in the tea called caffeine. Besides this stimulant tea also contains various polyphenolic compounds that act as flavouring agents.

Tea is derived from the leaves of an evergreen plant belonging to Camella species. The full height of a tea plant is 5-10 m and seeds are obtained from fully grown plants. This project aims on a careful analyse the acid content of different brands of tea.

Chemistry involved: Tea, which is one of the favourite beverage of Indians, also act as a cardiac respiratory muscles stimulant and as diuretic. The properties of tea may be attributed to the presence of many organic compounds. The flavour and colour of the tea are due to the flavouring agents and their extent varies with source and processing of tea leaves.

The acidity of the tea can be easily tested by the use of pH paper. Tannins (phenolic compounds) are responsible for the acidity of tea and more the amount of tannins present in tea more will be the acidity.

Materials and Method

Appratus Required: Beakers, glass rod, distilled water, tea samples, filter paper, pH paper, bunsen burner and beam balance.

Extraction Procedure

1. At first we take five 250 ml beaker, weight 10g of tea leaves of each sample and put them separately in each beaker.
2. Now then put 200 ml of distilled water in each beaker.
3. And then heat the beaker and filter the extract thus obtained.
4. Now place a drop of the filtered extract from the beaker on the indicator paper piece with the help of a glass rod.
5. Then we observe the colour produced and compare it with the colour provided in the colour chart and also note the pH value from the chart which matches the colour in the indicator paper.
6. Similarly, find out the pH of the filtered extract in all the other beakers and record them in the observation table.

Observations of pH:

Sl.No.	Name of tea sample	pH
1.	Chakra Gold	4.8
2.	Tata Tea	4.9
3.	Red Label	4.6
4.	Taj Mahal	5.1
5.	Tetley Green Tea	4.6

Conclusion: Different samples of tea have different levels of acidity depending upon their tanin content. Higher is the acidity, better is the taste of tea.

From this study we have concludes that Taj Mahal Tea and Tata Tea have the highest pH and they possess a mildly bitter taste. Red Label Tea and Green Tea has the lowest pH, with a very bitter taste.

In future we can perform by using the sentiment analysis like having the review of the people who has tasted the tea, instead of using the normal data. By using this method it gives more precised analysis on the quality of tea when compared to the normal data that we have done at present.

Reference:

1. Indian pharmacopoeia, 1996,3rd edition, vol. I, 81.
2. Anjana Srivastava, Sand,N.K., and Gupta, K.C., Indian Drugs, 1992.
3. https://WWW.teaclass.com/lesson_0210.html.
4. https://youtu.be/EHqMk0vflZQ.
5. Mathur Anjali, G. Prem Rishi Kranth, Basava Laharika, Alla Maneesh of Quality Analysis Of Tea With The Help Of Machine Learning Algorithms.