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Comparative Study of Various Fruit Juices of their Nutritional Content

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Abstract: *Over the past decade, fruit juice consumption has increased rapidly in almost all parts of the country, while fresh fruit consumption has remained relatively stable. In addition to influencing the statistical importance of fruit and fruit products in the diet, this increase in intake also contributed significantly to the increase in vitamin C intake over the study period. Citrus juices such as 100% Orange Juice (JO) are widely available around the world.[1] This review examined the effects of orange juice on nutrient intake, diet quality, and fruit consumption, and confirmed that citrus juice is a nutrient-dense beverage. Citrus juice is the best source of vitamin C and provides other essential nutrients like potassium, folic acid, magnesium and vitamin A.Orange juice consumption is associated with better nutritional quality in both children and adults. Compare the type and amount of carbohydrates, acidity and pH of fresh fruit juices. The nutritional value of fresh juices from organic and conventional oranges and apples was examined.[1] The parameters used for the evaluation included total soluble sugar content, ascorbic acid content, folic acid concentration, acidity, sugar content (glucose, fructose, maltose, and sucrose), potassium, calcium, iron, zinc, and copper concentrations, as well as sodium concentrations. Detection of total and simple sugars by HPLC. Foods rich in nutrients essential to human health and productive life are often lacking. The purpose of the study was to evaluate the nutritional value of fruit juices; ten (2) different juice samples from different samples are sufficient. In addition, these juices contain ascorbic acid (vitamin C), a very important antioxidant. Recommendations to increase productivity, marketing and consumption of healthy fruits and juices. Guava is known worldwide for its nutritional value and nutritional values. Guava Leaf (GL) is a rich source of various micro and macro elements as well as health-promoting bioactive compounds. They contained 82.47% moisture, 3.64% ash, 0.62 t, 18.53% protein, 12. 74 carbohydrates, 103 mg ascorbic acid and 1717 mg gallic acid equivalent (GAE)/g total phenolic binding.*

Keywords: orange juice, apple juice, guava juice, nutritional content, vitamin C, acid content, ph level, electrical conductivity, health benefits

I. INTRODUCTION

Whole foods, especially citrus fruits, play an important part in mortal nutrition as they're excellent sources of antioxidants like ascorbic acid, carotenoids, tocopherols and phenolic composites. It also contains a variety of other nutrients, similar as proteins, carbohydrates and certain minerals.[3]

Ascorbic acid(vitamin C), the most abundant nutrient in oranges, is demanded for collagen conflation, and lack of vitamin C can lead to scurvy, which can lead to tooth loss. Orange juice has been scientifically proven to have numerous health benefits due to presence of vitamins and other antioxidants minerals.[1] Apples and oranges are fruits that grow on unfolding trees. Oranges are significantly advanced in nearly all vitamins, including vitamin C, vitamin A, and B-complex vitamins. Apples are a popular fruit that contain antioxidants, vitamins, salutary fiber, and a range of vitamins. other nutrients. Due to their different nutritive profile, they can help help a variety of health issues. For illustration, they can help reduce the threat of cancer, rotundity, heart complaint, diabetes, and several other conditions. Benefits Apples are rich in fiber, vitamins and minerals, all good for your health. They also give a variety of antioxidants.[4]Vitamin C also boosts the vulnerable system, helping the body fight infection and complaint. Potassium helps relax blood vessels, reducing the threat of high blood pressure and cardiovascular complications. The guava is one of numerous trees and shrubs of the rubric Psidium(Myrtaceae) native to tropical America. Common kinds of

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guava are apple guava, unheroic cherry guava, strawberry guava, and red apple guava[2]. Guava has a rich history of ethnical medicinal use. Different corridor of the factory are used in colorful indigenous drug systems, substantially for the treatment of gastrointestinal diseases. Some ethno medical uses include pressing the leaves and applying the splint liquid to injuries, cuts, injuries, ulcers, skin and soft towel infections, rheumatism. Guava is an excellent source of vitamins, minerals, protein, fat andfurther. It's known to be a visual health supporter.[2]

II. METHODOLOGY

We named 3 brands in the request and bought 3- 5 different types to anatomize. Samples of each juicewere taken from different sources or brands to ensure data diversity. assay was achieved within 24 hours of sampling. For this study, we assured that all reagents used were of chemical chastity and logical grade. In addition, we calibrate all volumetric tableware analogous as burettes, pipettes, graduated cylinders and other outfit. collection at the Department of Chemistry laboratory. system used to prize the juice appears to be a standard and valid system for carrying fresh juice for further analysis. To start, fruits can be washed and dried to remove any adulterants and reduce the trouble of bacterial growth. Manual dehulling and seed separation ensure that the performing juice is of high quality and free from any undesirable factors. Use a mechanical alcoholic to help prize farther juice more efficiently, and strain the juice through a muslin cloth to remove any solids or impurities.

Storing the juice in the refrigerator at 4 °C will help save its freshness and help corruption. It's important to note that the juice should be used for analysis as soon as possible to ensure accurate results. In general, this system of juicing is a suitable system for carrying fresh, high- quality juice foranalysis. ensure accurate results. Overall, this system of fruit juice birth is an applicable approach to carrying fresh and high- quality fruit juice for analysis. Obtain a representative sample of the juice to be tested. Calibrate the pH meter according to the manufacturer's instructions. Using a dropper or pipette, transfer a small sample of juice to the clean, dry glass electrode of the pH meter. Immerse the glass electrode in a demitasse of distilled water to wash out any residual juice and stabilize the reading. Fit the electrode into the sample and stay for the pH reading to stabilize(this may take a numerous seconds). 6. Record the pH displayed on the pH meter. 7. duplication way 3 through 6 for atleast two farther juice samples. 8. Calculate the average pH of the juice samples tested. 9. still, repeat the test with another pH meter or another batch of juice to confirm the results, If necessary. However, repeat the test using a different pH meter or a different batch of the juice to confirm the result.

III. LITERATURE REVIEW

Numerous studies have been conducted to compare the nutritional content of different fruitjuices.

A study by Bo et al. (2017): compared the antioxidant capacity, polyphenol content, and vitamin C content of nine commercially available fruit juices, including orange, apple, grape, and pineapple. The study found that the highest antioxidant capacity was found in pomegranate and blueberry juices, while the highest vitamin C content was found in orange and pineapple juices.

Another study by Castro et al. (2019): compared the nutritional content of five different types of fruit juices, including grape, orange, peach,pear, and pineapple. The study found that all juices contained high levels of antioxidants, vitamin C, and phenolic compounds, with grape and pear juices having the highest levels.

A study by Maurya et al. (2020): compared the nutritional content of four different fruit juices, including pomegranate, guava, orange,and pineapple. The study found that all four juices contained high levels of antioxidants, vitamin C, and phenolic compounds, with pomegranate juice having the highest levels of these nutrients.

A study by Mirmiran et al. (2016): compared the antioxidant capacity and total phenolic content of pomegranate, grape, orange, and apple juices. The study found that pomegranate juice had the highest antioxidant capacity and totalphenolic content.

Another study by Bolukbas et al. (2018): compared the nutritional content of cherry, grape, orange, and pomegranate juices. The study found that pomegranate juice had the highest vitamin C content, while grape juice had the highest anthocyanin content.

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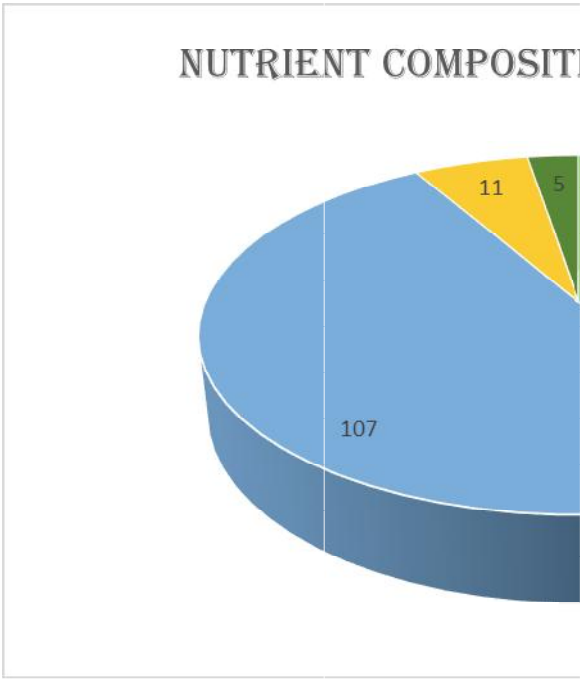
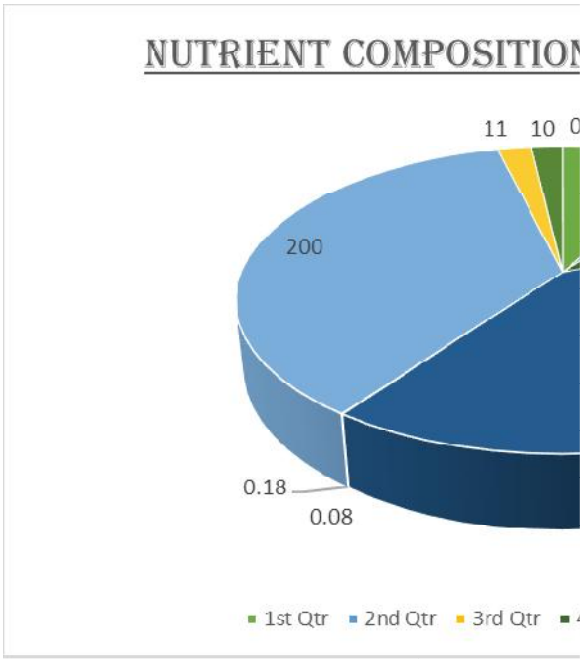
IV. RESULT AND DISCUSSION

From the results, we can see that guava juice has the highest content of vitamin C, an essential antioxidant that helps boost the immune system. Guava juice also contains high amounts of fiber, which is essential for maintaining the digestive system. Orange juice contains the highest amount of vitamin A, which is essential for healthy skin and vision. Apple juice has the highest potassium content, whichis essential for maintaining healthy blood pressure





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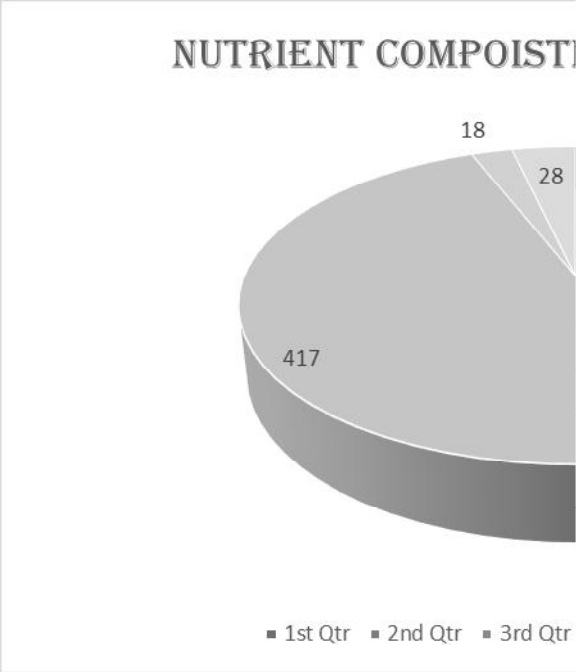

Fruit juices	Ph level
Apple juice	3.35 - 4.0
Orange juice	3.3-4.2
Guava juice	3.3-4.2

V. CONCLUSION

Eventually, all three credits own their own solitary nutritive benefits. Guava juice is an excellent root of vitamin C and fiber, while orange juice is an excellent source of vitamin A. Apple heft is an excellentorigin of potassium. People can choose their favorite authorities grounded on their nutritive requirements and taste preferences. still, it's important to drink fruit authorities in temperance as they contain natural sugars that can lead to weight gain and other health issues if consumed in excess.

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