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Determination of Vitamin C Content in Commercial Liquid Products and Consumption Trends

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Structured Abstract

Background: Vitamin C, also known as L-ascorbic acid, is essential for human health but cannot be synthesized by the body. It is commonly found in citrus fruits and is widely added to commercial beverages due to its health benefits, including antioxidant properties and immune system support. However, its stability is influenced by factors such as heat, light, and storage. Despite its importance, discrepancies exist between labelled and actual vitamin C content in commercial products, which may impact consumers' dietary choices.

Methods: This study analysed the vitamin C content in ten commercially available liquid-based products using the titration method. The study compared these values with the vitamin C content of whole orange and mandarin fruits. In addition, an online survey was conducted to assess the consumption patterns of consumers of liquid-based vitamin C products, focusing on frequency, quantity, and reasons for consumption.

Results: The findings indicate that some commercial products exceed their claimed vitamin C content, while others fall below their stated values. Effervescent tablets and vitamin C powders had the highest concentration of vitamin C, whereas fruit juices contained significantly lower amounts. Whole oranges and mandarins exhibited natural variability in vitamin C levels based on ripeness and storage conditions. The survey results revealed that the primary reason for consuming liquid-based vitamin C products was immune system support, with fruit juices being the most preferred type. Consumption frequency varied across different demographics, with young adults and individuals with higher education levels exhibiting the highest intake patterns.

Conclusion: In conclusion, there are significant variations in the actual vitamin C content of commercial liquid-based products compared to their labelled claims. This highlights the need for stricter labelling regulations to ensure consumer awareness and informed choices. Additionally, consumer preference for liquid-based vitamin C products is influenced by health concerns, convenience, and perceived nutritional benefits. Further studies should explore the impact of processing and storage on vitamin C degradation in commercial products.

Keywords: Vitamin C, Liquid-Based Products, Consumption Patterns, Labelling Accuracy

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