

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

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Structured Abstract

Background: Vitamin C boosts immunity, antioxidants, and physiology (Murererehe et al., 2022). Reduces oxidative stress and chemical damage linked to chronic diseases like cardiovascular and neurological disorders (Doseděl et al., 2021). Vitamin C boosts vitamin E's health benefits. Vitamin C pills, capsules, and chewables are stable, convenient, and easy to take (Carr & Rowe, 2020; Feng et al., 2021). Vitamin C labels and contents vary, posing accuracy and safety hazards. Scurvy and gastrointestinal difficulties can result from underdose and overdose (Schlueter & Johnston, 2011). These changes and marketing claims can mislead buyers about product reliability and efficacy (Aikin et al., 2019). Vitamin C concentration in solid-based commercial goods is compared to claims to remedy these difficulties. Comparing commercial and fresh fruit vitamin C. The study evaluates vitamin C supplement use, demographics, and causes. This aids the survey by indicating consumer tastes. This study will explain vitamin C content abnormalities, identify reliable products, and examine trends for supplement buyers. Goals 3 and 12 promote ethical, healthy eating. Results strive to educate customers, increase safety, and improve public health.

Methods: Drugstores, convenience stores, and Shopee supplied tablets, gummies, candies, capsules, and jellies for the study. Fresh retail oranges and mandarins were used to compare solid-based commercial vitamin C to natural sources. 0°C–4°C cold storage protected samples. Vitamin C titrated with DCPIP/iodine. Early DCPIP vitamin C levels were pale pink. Pink sample endpoints were few. Samples were titrated with iodine for vitamin C. Vitamin C content was compared against labelled claims using variance (%). To improve our data, 50 Google Forms-randomized respondents completed a solid-based vitamin C product intake questionnaire. The questionnaire covers gender, age, education, and use. Likert and closed-ended multiple-choice were utilised. SPSS evaluated vitamin C usage and demography.

Results: Capsules deviated most from vitamin C labels, followed by candies, gummies, jelly, and tablets. Vitamin C-wise, jelly was closest to fresh fruit. Commercial vitamin C pills differ from natural sources, proving their trustworthiness. These product preferences were surveyed by age, gender, education, and salary. Tablets were the most popular solid-based vitamin C product due to their stability, simplicity, and use. Most respondents use 1–2 solid vitamin C tablets monthly. Improving health and immunity drove consumption. This shows consumer trust and health maintenance dependence on certain products, supporting product variation analysis.

Conclusion: This study found that capsules have the most vitamin C variability and tablets the least. The closest vitamin C content to fresh fruits was jelly, indicating commercial products can mimic nature. Responders typically take tablets 1–2 times a week for immunity and wellness. Through product research and consumption behaviour, this study reveals that commercial products need effective labelling and quality control to build consumer confidence. These findings assist buyers balance preferences, reliability, and health benefits when buying vitamin C solid-based commercial goods.

Keywords: Vitamin C, Solid-based Commercial Products, Variation, Consumption Pattern, Fresh Fruits

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