Application of the Quality Function Deployment (QFD) Method in the Development of Instant Functional Beverages

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Abstract:

This study presents the application of the Quality Function Deployment (QFD) methodology in the development of instant functional beverages, with the aim of aligning product characteristics with consumer expectations. By identifying key consumer requirements—such as fast solubility, pleasant taste and aroma, high nutritional value, natural composition, convenient packaging, and safety—a structured QFD approach was employed to translate these needs into specific technical parameters, including melting time, protein and vitamin C content, pH level, fiber concentration, flavor type, packaging quality, and microbiological indicators. A House of Quality matrix was constructed to visualize the relationship between consumer demands and engineering specifications, allowing for the prioritization of critical product attributes. The study also analyzed the interdependencies among technical parameters, facilitating more informed design decisions. The results demonstrate that QFD is an effective tool for optimizing product design and development processes, ensuring that the final formulation of instant functional beverages meets both market demands and quality standards.

Keywords:

Quality Function Deployment (QFD), instant functional beverages, consumer requirements, product development, customer satisfaction.