

Innovative Practices in Sustainable Horticulture

(Volume - II)



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Mr. Saddam Hussain is a dedicated research scholar specializing in Plant Physiology under the Faculty of Horticulture at SKUAST-Kashmir. His research primarily focuses on the cultivation of microgreens—nutrient-dense superfoods with immense potential for enhancing nutritional security. Through innovative growing techniques, he aims to improve crop sustainability and human health.



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Chapter-7

Preharvest Factors Affecting And Postharvest Quality In Horticultural Crops

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Abstract- The quality of horticultural crops is significantly influenced by both preharvest and postharvest factors, which affect their marketability, nutritional value, and shelf life. Preharvest factors such as climate, soil conditions, irrigation, fertilization, pruning, and pest management play a crucial role in determining the initial quality of fruits, vegetables, and ornamental plants. Genetic factors, cultivar selection, and cultural practices also impact the biochemical composition, texture, and appearance of produce. Postharvest quality is further influenced by handling, storage conditions, packaging, and transportation. Factors such as temperature management, humidity control, and

postharvest treatments can either extend or shorten the shelf life of horticultural commodities. Understanding the interplay between preharvest and postharvest factors is essential for optimizing crop quality, reducing postharvest losses, and ensuring consumer satisfaction. This paper explores the key preharvest and postharvest factors that affect the quality of horticultural crops and suggests strategies for maintaining optimal produce quality from farm to market.

Keywords: Preharvest factors, postharvest quality, horticultural crops, shelf life, storage conditions, packaging, postharvest losses.

Introduction-

A critical priority in today's world is securing food availability for the expanding global population while simultaneously promoting sustainable development through reduced food losses. Postharvest losses exacerbate food insecurity, diminish farmers' earnings, and contribute to inefficiencies in the global food system. The challenge of postharvest losses arises from the need for interventions at multiple stages, the integration of various technologies, the complexity of value chains, and the underdevelopment of food systems (Bekele, 2021). The quality of horticultural crops is influenced by various factors that occur before and after harvest. Preharvest factors determine the initial quality of produce, while postharvest handling and storage conditions affect its shelf life and marketability.