Title Preharvest ways of enhancing the phytochemical content of fruits and vegetables
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Abstract

Purpose of review: The objective of the present review is to provide a template for multidisciplinary teams interacting in the horticultural field in the design of fruits and vegetables with regards to phytochemicals. The review covers a brief update of specific phytochemicals from horticultural crops with established health effects. The available literature was surveyed to highlight studies dealing with enhancing or using phytochemicals in developing horticultural produce based on plant breeding, bio-engineering and cultural practices.

Recent findings: Fruits and vegetables are a source of an array of phytochemicals, which are responsible for health protection and disease prevention. Regular consumption of fruits and vegetables has been strongly linked to a reduction in the risk of cardiovascular disease, cancer, diabetes and age-related disorders. Production of phytochemicals in fruits and vegetables is affected by many pre- and postharvest factors including farming practices and environmental factors such as microclimate, location, growing season, soil type and nutrients, plant maturity, postharvest storage and processing, but the most important factor is the specie and genetic make up of the plant.

Directions for future research: The use of novel cultural practices and development of new genetic lines to enhance phytochemical levels are the main directions that research should take in the near future. However, during the course of this research, it will be necessary to keep in mind postharvest considerations such as maintaining the phytochemical content up to the consumer. A very high phytochemical content at harvest does not guarantee that these phytochemicals will reach the consumer. Integrated quality production and management must be considered as a global target to reach.