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Editorial

Postharvest Handling of Horticultural Products

Maria Dulce Antunes [1,*], Custódia Gago [1] and Adriana Guerreiro [2]

[1] MED—Mediterranean Institute for Agriculture, Environment and Development & CHANGE—Global Change and Sustainability Institute, FCT, Universidade do Algarve, edf. 8, Campus de Gambelas, 8005-139 Faro, Portugal
[2] CEOT—Centre for Electronics, Optoelectronics and Telecommunications, FCT, Universidade do Algarve, edf. 8, Campus de Gambelas, 8005-139 Faro, Portugal
* Correspondence: mantunes@ualg.pt

Fruit and vegetables are in a live state after harvest. Continued respiration results in carbon dioxide production, moisture, and heat, which influence the storage environment, packaging, and refrigeration requirements. A current knowledge of good practices for the harvest and postharvest handling of fresh horticultural products is fundamental due to their high perishability [1,2]. It is estimated that 30% of produced horticultural commodities are lost in the process between harvest and consumption [3]. The reduction in these losses is imperative nowadays, because it will impact back the amount of produced food, with benefits on agricultural inputs, water and land use, contributing to the sustainability of agriculture and the planet.

Over time, postharvest researchers have looked for the best ways and technologies that allow us to reduce quality loss after harvest and increase the storage capacity of horticultural products with the aim of reducing their losses.

In this "Special Issue" of the *Horticulturae* MDPI journal we intended to collect a series of research recently conducted on the subject. This Special Issue contains 13 scientific papers covering different areas of the postharvest handling of horticultural products. The subjects covered report on the knowledge of the physiology and biochemistry of the horticultural commodities and the study of technologies that can improve product quality and storage, reducing postharvest loss.

Raspberries are of the most perishable fresh fruit. Although classified as non-climacteric fruit, several studies have reported that fruit ripening and abscission are regulated by ethylene production from the receptacle [4–6]. To understand the relationship between ethylene production and fruit quality at the beginning of the ripening process, ref. [7] reported ethylene and ripening parameter changes in fruit at 0 and 10 °C. They conclude that ethylene production is negatively correlated to firmness through ripening, but not with SSC or titratable acidity. Moreover, the positive correlation between firmness and CO_2 production in the whole fruit suggests a ripening behavior for 'Heritage' raspberry, raising the importance of further studies on the physiology of non-climacteric fruit ripening.

Physiological disorders in long-term cold storage are a key issue concerning postharvest losses in susceptible horticultural commodities. The physiology of the disorder and pre- and postharvest technologies that reduce those physiological disorders have a major impact in the postharvest industry. In the present "Special Issue", four papers report on apple, pear, and peach. For apple, the effects of 1-MCP and $CaCl_2$ on fatty acid composition and their relationship with storage physiological disorders were studied [8]. A new method to induce superficial scald in stored pear was developed by [9] in order to better study the mechanisms of physiological disorder developments. The postharvest treatment with calcium and ascorbic acid was reported to reduce symptoms of chilling injury in peaches storage [10].

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In banana, the enzymes involved in the browning of the cut-end surface were studied; it was found that postharvest treatments with oxalic acid could significantly reduce browning, improving fruit quality [11].

Tomato is a very important crop worldwide. In this Special Issue, three studies of this fruit are presented. The maintenance of tomato quality was improved over its shelf-life using calcium chloride, hydrogen peroxide, chitosan, and ozonated water postharvest fruit treatment [12]. Different packaging materials and storage temperatures were studied to reduce okra pod decay through storage and marketing [13].

A kinetic model for the effect of the vibrations of fruit after harvest on their quality during storage was presented [14]. Another paper reports the effect of transport temperature and vibration on final tomato fruit quality [15]. Additionally, the bruising impact drop in guava fruit was modulated by using image processing and response surface methodology, with the objective to reduce the impact bruising incidence of guava throughout its supply chain [16].

Another study provides a scientific basis for investigating the molecular mechanisms of pepper storage tolerance via transcriptomics and metabolomics [17].

One paper also presents the importance of ethephon treatment, a commercial product releasing ethylene, on the abscission of palm fruit, which are grown for seed oil production [18].

Vase life is one of the most important factors that determines the marketability of cut flowers. A study on hydrangea flowers reports the importance of preservative solutions in order to improve the water balance for each distribution stage in its supply chain [19].

This Special Issue provides a valuable contribution for the understanding of the horticultural products' postharvest physiology and implementation of technologies to reduce quality loss during the supply chain. In this way, this Special Issue contributes to reductions in food loss, promoting the sustainability of agriculture.

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