

**Title** Where systems biology meets postharvest

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### **Abstract**

According to the dictionary, a system is something like “a group or combination of interrelated, interdependent, or interacting elements forming a collective entity”. In postharvest, fresh harvested food crops can be considered isolated small scale systems. Postharvest research aims to understand the quality of these ‘systems’ as influenced by postharvest conditions. The phenotypic quality of horticultural produce is based on genetic traits that are expressed through a cascade of reactions subject to complex regulatory mechanisms and diverse environmental conditions. Ultimately, to fully understand postharvest phenomena, a systemic approach that links genetic and environmental responses and identifies the underlying biological networks is required. Thanks to the development of high throughput omics techniques such system-wide approaches have become a viable option to support traditional postharvest research. This review provides an overview of systems biology and how it can lead postharvest research into a new era.