Title Hypobaric and hyperbaric treatments for the control of postharvest decay of strawberries, sweet cherries and table grapes

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Abstract

Post-harvest decay can induce serious loss of strawberries, sweet cherries and table grapes, both in the field and even more so during storage. In recent years, changes to European legislation have reduced the number of fungicides available for the control of such diseases. Moreover, fungal isolates resistant to some of the fungicides used frequently appear, and combined with the increasing request of consumers for fruit free from fungicide residues, this has stimulated research towards the discovery or setting-up of alternative methods for the control of post-harvest decay of fruit. Among these, the use of physical means is the method under particular investigation. Over the last few years, the use of hypobaric and hyperbaric treatments has been set up for the control of post-harvest decay of some fruit, including strawberries, sweet cherries and table grapes. Hypobaric treatments at 0.25 and 0.50 atm can significantly decrease gray mold in these fruits. Moreover, other rots can also be reduced after these treatments, such as Rhizopus rot of strawberries, and brown rot and blue mold of sweet cherries. Recently, the use of short hyperbaric treatments at 1.5 atm have proven to be effective in the control of post-harvest decay in sweet cherries and table grapes, although it was not effective for strawberries. The mechanisms of action linked to decay reduction during and following such hypobaric and hyperbaric treatments are under investigation.