

Title New approaches to postharvest disease control in Europe
Author M. Mari, F. Neri and P. Bertolini.
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Abstract

Alternatives to fungicide treatment to prevent postharvest fruit losses have been studied. Applications of (a), biological control agents (BCAs), (b) plant bioactive compounds and (c) elicitors of resistance showed results that were interesting but still far from a practical application in Europe. So far, despite the substantial progress obtained with BCAs, no biofungicide has been registered in Europe to control postharvest pathogens, also because of insufficient and inconsistent performance. The use of plant bioactive compounds has shown that the treatment conditions (concentration, form of application, formulation, exposure time, time of treatment, etc.) can strongly influence their efficacy. The different responses found in many studies indicate a cultivar specificity in the product-pathogen-volatile interaction. Apart from efficacy, a barrier to the use of plant bioactive compounds may be the off-odours caused in fruits and vegetables, and/or phytotoxicity. Elicitors (acibenzolar, chitosan, jasmonate, salicylic acid, heat, etc.) showed sometimes inconsistent fungicidal activity, limited to fungistatic effects and related to treatment timing and the developmental stage of the plant. Heat treatments by hot water dips, hot dry air, vapour heat or very short water rinse and brushing appear more promising. To overcome the drawbacks that have arisen with these methods, integration of the antagonist with other treatments such as low toxic substances, heat, etc. has been proposed; this strategy could produce an additive or synergic effect on disease control and obtain satisfactory levels of disease reduction.