

Title Resistance induced by elicitors in melons for control of postharvest disease in China
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Abstract

Melons (*Cucumis melo* L.) are the most important crop grown in the northwestern provinces of China but are highly perishable after harvest. Decay is caused mainly by *Alternaria alternata*, *Fusarium* spp., *Rhizopus stolonifer* and *Trichothecium roseum*. Postharvest treatment with imazalil and iprodione has been successful in controlling decay of melons. However, concerns about potential impact on public health and environment, as well as development of pathogen resistance to the fungicides, have stimulated the search for alternative control methods. Resistance induced by elicitors, such as acibenzolar-S-methyl (ASM), harpin and soluble silicon, can be part of postharvest disease control of melons. Latent infection and decay of fruit were decreased significantly by pre- or postharvest treatment with these chemicals. Treated fruit developed resistance to pathogen infection. Resistance induced was systemic, broad-spectrum and long-lasting, but rarely provided complete control. The mechanism of induced resistance involved is the accumulation of PR proteins, defence enzymes, antifungal compounds, increasing of activated oxygen, and lignification of epidermal cells. In order to maximize the efficacy of resistance elicitors, a greater understanding of the effect of maturity, postharvest environmental factors, and their interactions is required. Changes in quality induced in fruit also need to be evaluated.