

Title Mechanisms of resistance and susceptibility of mango fruits to fungal attack, and their modulation by post-harvest handling and storage

Author D. Prusky

Citation ISHS Acta Horticulturae 820:487-492. 2009.

Keyword fruit resistance; postharvest diseases; disease control; modulation of resistance

Abstract

Colletotrichum gloeosporioides spores germinate on mango fruits and produce appressoria that also germinate and then become quiescent. The mechanism of resistance of unripe mango fruits to fungal attack is complex and several factors have been found to be involved in its expression. The presence of fungitoxic amounts of preformed antifungal compounds was correlated to fruit resistance. Resistance could also be induced by modulation of particular stages, such as the synthesis of the 5-substituted resorcinol during the postharvest period. This regulation can be done by the application of various elicitors as postharvest treatments and by means of synthetic elicitors. Induction of resistance seems to occur by a series of early events in which the pathogen and the host release reactive oxygen species. Resistance of mango fruits can also be affected by modulation of the secretion of specific pectolytic enzymes of the pathogen. The general understanding of the fruit biosynthetic pathways that lead to formation of preformed and inducible barriers, and of the modulation of pathogen virulence factors contributing to fungal colonization will provide the basis for novel mango fruit protection strategies that could lead to the reduction of pesticide use in the future.