

Title Improved control of moldy-core decay (*Alternaria alternata*) in Red Delicious apple fruit by mixtures of DMI fungicides and captan

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Citation European Journal of Plant Pathology, 118, Number 4, 349-357, 2007

Keywords Disease control; *Malus sylvestris* var. *domestica*; Moldy-core disease; Sterol inhibitors

Abstract

The sterol biosynthesis inhibitors bromuconazole and difenoconazole and tank mixes of each fungicide with captan were applied to apples and evaluated as controls for moldy-core and fruit decay caused by *Alternaria alternata*. Effectiveness of a mixture of bromuconazole and captan in controlling colonization by the fungus was also evaluated. Decay formation by *A. alternata* on mature detached fruits was partially inhibited by bromuconazole at $0.5 \mu\text{g ml}^{-1}$ and was completely inhibited at $50 \mu\text{g ml}^{-1}$; it was significantly affected by either bromuconazole at $5 \mu\text{g ml}^{-1}$ or captan at $1,250 \mu\text{g ml}^{-1}$, and was completely inhibited by their mixture. In general, three foliar applications of bromuconazole or difenoconazole in the field, during the bloom period, reduced the numbers of infected fruits by 40–60% compared with untreated control trees. However, tank mixes of either fungicide with captan improved control of moldy-core in fruits at harvest. Tank mixtures of bromuconazole and captan also significantly reduced the percentage of fruits colonized by *A. alternata* when sampled at various days after full bloom. Artificial inoculations in the orchard at full bloom did not change the inhibitory effects of the tank mixtures. Large-scale demonstration trials in commercial orchards supported these findings. The inhibitory effects of tank mixes on decay development in detached fruits, and on moldy-core in the field indicate that a control programme based on mixtures of either bromuconazole or difenoconazole with captan during the bloom period can effectively reduce moldy-core on Red Delicious apples.

<http://www.springerlink.com/content/g86v7521422t31m8/fulltext.pdf>