

Sensitivity of *Botrytis cinerea* from Greenhouse Vegetables to DMIs and Fenhexamid

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Two hundred isolates of *Botrytis cinerea* were collected from greenhouse vegetables between 2003 and 2006 to determine their baseline sensitivity to triadimefone, penconazole, tebuconazole and fenhexamid. Mean values of 50% effective concentrations (EC₅₀) of inhibiting growth were 4.853±5.102, 0.41±0.215, 0.19±0.099 and 0.36±0.891 mg l⁻¹, respectively (mean±SD). Individuals of *B. cinerea* in the population differed by a factor (EC₅₀ of the least sensitive isolate / EC₅₀ of the most sensitive isolate) of 6625, 20, 603 and 1800, respectively. Naturally fenhexamid-resistant isolates were detected with an unexpected high frequency of 10% although the pathogen population had never been exposed to this fungicide. The resistance level (mean EC₅₀ of resistant isolates / mean EC₅₀ of sensitive isolates) was 19.5. These naturally resistant isolates also were resistant *in vivo*, and there was no significant difference in growth rate, conidial production or pathogenicity ability between naturally resistant and wild sensitive isolates. These results indicated that there was a potential risk of practical resistance if fenhexamid was applied alone. Negative cross-resistance was observed between fenhexamid and tebuconazole in 90% of the naturally resistant isolates. Moreover, an obvious synergism of the antifungal activity of fenhexamid by tebuconazole was demonstrated in some of the naturally fenhexamid-resistant isolates.

KEY WORDS: *Botrytis cinerea*; (negative) cross-resistance; sensitivity baseline; demethylation inhibitors (DMIs); fenhexamid.

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