

Physiological Characteristics of Benomyl-resistant Mutants in an Entomopathogenic Fungus, *Metarhizium anisopliae*

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An entomopathogenic fungus, *Metarhizium anisopliae*, has been used as an important mycopesticide. But the fungus can not be applied with benomyl, which is widely used to control plant pathogens, because *M. anisopliae* is very susceptible to the fungicide. So, benomyl-resistant mutants were obtained spontaneously or by UV irradiation in benomyl-treated media and their physiological characteristics were investigated. Eight mutants growing stably and normally well were selected. No significant differences in conidia or hyphal shape, conidia viability, mycelial biomass, or virulence to the diamondback moth were observed between the wild type and its mutants. Most of the mutants grew slower on media containing 250 $\mu\text{g/ml}$ benomyl, 4% chitin or 1% skim milk, but S-18 and S-19 did not show any difference from the wild type. Especially, the two spontaneous mutants, S-18 and S-19, grew well at benomyl concentrations up to 50 times or more than that which inhibits wild type proliferation. These results suggest that S-18 and S-19 could potentially be used with concurrently the fungicide, benomyl.