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Molecular tools to diagnose strobilurin resistance in *Mycosphaerella fijiensis*

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Abstract

A point mutation in the cytochrome b gene has been described as conferring resistance to strobilurin fungicides in *Mycosphaerella fijiensis*. Based on the sequence of the cytochrome b gene, PCR primers were designed for detection and differentiation of sensitive (S) and resistant (R) isolates either through allele specific PCR amplification or allele unspecific PCR followed by allele specific *Ita* I digest. Both approaches were validated either with mixtures of fungal DNA obtained from S- and R-isolates, or with DNA from banana plants artificially inoculated with S- and R-isolates. The described molecular methods are highly sensitive and specific for detecting strobilurin resistance in field populations of a range of plant pathogens including *M. fijiensis*, and are complementary to classical sensitivity bioassays.

Keywords: molecular diagnosis, PCR, strobilurin resistance, cytochrome b, *Mycosphaerella fijiensis*.