



Distribution of mating-type alleles and M13 PCR markers in the black leaf spot fungus *Mycosphaerella fijiensis* of bananas in Brazil

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ABSTRACT. The fungus *Mycosphaerella fijiensis* is the causative agent of black sigatoka, which is one of the most destructive diseases of banana plants. Infection with this pathogen results in underdeveloped fruit, with no commercial value. We analyzed the distribution of the *M. fijiensis* mating-type system and its genetic variability using M13 phage DNA markers. We found a 1:1 distribution of mating-type alleles, indicating *MAT1-1* and *MAT1-2* idiomorphs. A polymorphism analysis using three different primers for M13 markers showed that only the M13 minisatellite primers generated polymorphic products. We then utilized this polymorphism to characterize 40 isolates from various Brazilian states. The largest genetic distances were found between isolates from the

same location and between isolates from different parts of the country. Therefore, there was no correlation between the genetic similarity and the geographic origin of the isolates. The M13 marker was used to generate genetic fingerprints for five isolates; these fingerprints were compared with the band profiles obtained from inter-simple sequence repeat (UBC861) and inter-retrotransposon amplified polymorphism analyses. We found that the M13 marker was more effective than the other two markers for differentiating these isolates.

Key words: *Musa* sp; Polymorphism; Mating-type; ISSR; IRAP