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Research Article

Molecular Variability Among the Isolates of Seed-Borne *Macrophomina phaseolina* Infecting Sesame Seeds

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Abstract

Sesame (*Sesamum indicum* L.) is an earliest oilseed crop originating from India, widely cultivated across different climates worldwide known as the "Queen of the Oilseeds". Seeds are the economically significant part of the crop and it contains high oil and protein concentrations, making it highly valued for its nutritional content and delightful flavour. Sesame cultivation faces challenges particularly concerning biotic agents with diseases caused by *Macrophomina phaseolina* being a major threat. Moreover, this pathogen's seed-borne nature possesses a direct threat to human health when infected seeds are consumed. Twelve *M. phaseolina* isolates from different genotypes/cultivars showed distinct cultural, morphological and molecular variability. The RAPD study using 40 primers revealed cent per cent polymorphism with OPA 2, OPE 1 and OPE 3, while OPA 3 and OPA 18 exhibited the lowest polymorphism (85.71% and 83.33%). Most isolates belonged to cluster B, indicating genetic similarity, while cluster A included only four isolates. Molecular variability amongst the isolates of *M. phaseolina* infecting sesame seeds were analyzed using molecular marker RAPD.

Key words: *Macrophomina phaseolina,* molecular variability, seeds, sesame, RAPD

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