

Morphological and molecular variation among the isolates of *Trichoderma longibrachiatum* by using RAPD markers

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Received : 10.04.2019

RMs Accepted : 29.05.2019

Published : 29.07.2019

In order to utilize the full potential of *Trichoderma* species in specific applications, precise identification and characterization was vital. The morphological study was based on different parameters like colony growth, colony colour, and pigmentation. Molecular techniques are important analytical tool to characterize genetic variability and diagnosis of microbial population. Molecular variability among the isolates of *T. longibrachiatum* was studied by using Random Amplified Polymorphic DNA (RAPD). The ITS-1 and ITS-4 universal primer were successfully used to amplify genomic DNA. Twenty (20) RAPD primers of OPA series were tested, of which 15 primers produced 113 scorable bands among them 110 bands were polymorphic and level of polymorphism was up to 97.34 %. Three primers namely OPA-8, OPA-9 and OPB-19 each showed one monomorphic band. Similarity coefficient ranged from 0.21 to 0.55, indicating the significant diversity among isolates. On the basis of dendrogram the tested culture were divided into 6 clusters, the cluster A consist TL-1 (Akola), TL-2 (Amravati) and TL-3 (Bhandara). Cluster B consist only one isolate i.e. TL-4 (Buldhana). Cluster C consists of TL-5 (Chandrapur). Cluster D consist of TL-6 (Gadchiroli). TL-7 (Gondia) and TL-8 (Washim) isolate are in cluster E and TL-9 (Yeotmal) isolate was in separate cluster F. It indicates that there is genetic diversity among the isolates of *T. longibrachiatum* isolated from different districts of Vidarbha region.

Key words: *T. longibrachiatum*, morphological, molecular variation, RAPD markers
