Research Article

Molecular Diversity Analysis of Fusarium wilt (*Fusarium oxysporum* f.sp. *lentis*) of Lentil Across India

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Abstract

Lentil (*Lens culinaris* Medik.), a crucial *Rabi* pulse crop, is severely prone to Fusarium wilt (*Fusarium oxysporum* f. sp. *lentis* (Fol)), leading to substantial yield losses globally. Countless strains had evolved, and their pathogenicity varied. In this instance, the significance of understanding isolates' morphological and genetic diversity is assumed, an aspect that has rarely been investigated in India. Henceforth, the current investigation was focused on the Fusarium disease survey throughout India and found 40 to 50 per cent of seed infection. Subsequently, 120 samples were collected from the survey, and of these forty isolates were selected for morphology and genetic variability. Variations like colony color, growth rate, and conidial morphology were observed among the isolates. Further, the genetic diversity analysis used 6 RAPD primers, revealing 46 reproducible bands with 94.92 per cent polymorphism. Clustering with UPGMA showed four distinct clusters with a 20 per cent similarity coefficient representing different locations. This information is beneficial for the breeder to plan the breeding strategies to develop resistant cultivars against Fol isolates.

Key words: *Fusarium oxysporum* f. sp. *lentis* (Fol), genetic diversity, lentil wilt, RAPD

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