

## GENETIC DIVERSITY IN *Sclerotium rolfii* POPULATIONS BASED ON MYCELIAL COMPATIBILITY GROUPS IN GUILAN PROVINCE, IRAN\*

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### Abstract

*Sclerotium rolfii* is a soilborne fungal pathogen that causes southern blight disease on a wide range of agricultural crops. This study was performed to evaluate genetic diversity of the fungus based on mycelial compatibility groups (MCGs) in Guilan province. MCG for 92 pure isolates collected from 12 host species were assessed according to the mycelial-barrage response on PDA. Mycelia of isolates in the same MCG intermingled (a compatible reaction), whereas mycelia of isolates from different MCG formed a cleared antagonism zone in the area of mycelial contact (incompatible reaction). Sclerotia formed on either side of this zone for most incompatible pairings. The width of antagonism zone between incompatible isolates was different from 1-5 mm. The results showed that *S. rolfii* population can be divided into six MCGs, designated as MCG1, MCG2, MCG3, MCG4, MCG5 and MCG6. MCG1 was the prevalent group and had the most number of isolates in these areas; also MCG3 had the widest host range. According to the results, bean had the highest Shannon diversity index and all six groups were found on this host. Knowledge about the genetic and virulence diversity in local populations of *S. rolfii* associated with different crops is a key component for the management of sclerotium root rot diseases, particularly through the use of host resistance and crop rotation in a given region.

**Keywords:** MCG *Athelia*, Heterokaryon, Tomato, Bean.

See Persian text for figures and tables (Pages ۳۱۷-۳۲۴).

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