## عنوان مقاله:

Anti-fungal and bio-control properties of chitinolytic bacteria against safflower Fusarium root rot


## محل انتشار:

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## خلاصه مقاله:

A total of ۷۸ rhizobacterial strains were isolated from ۴۸ rhizospheric soil and root samples, collected from safflower Carthamus tinctorius L. fields located in different regions of Iran. The chitinolytic activity was measured in the presence of colloidal chitin as the sole carbon source. Eleven isolates were identified as chitinolytic bacteria, based on the formation of a clearly visible zone on the growth media. Four isolates including EM۹, ES۴۱, ES۷ and ER۱۳ exhibited the highest chitin degradation activity based on a clear zone diameter of more than ۱۰ mm. According to a ribotyping analysis, EM۹, ES۴۱, and ES۷ isolates were identified as Bacillus cereus and ER۱۳ was found to be Pantoea agglomerans. In a dual-culture assay, morphogenic changes such as severely collapsed hyphae, decreased hyphal diameter with condensation and granulation of cytoplasm and highly rolled with formation of big clamydoconida in anomalous sporodochia -like structures were also observed using light microscope. Under greenhouse conditions, the application of selected chitinolytic isolates, i.e., EM۹, ES۴۱, ES۷ and ER۱۳, on safflower seeds significantly reduced seedling damping-off caused by Fusarium solani. In addition, the results revealed that root and shoot dry weight in infected plants that were treated with EM۹ isolate suspension, increased by ۱۴ and ۲۲%, respectively.



## کلمات کلیدی:

Bacillus cereus, Biological control, Carthamus tinctorius