عنوان مقاله:

Biocontrol of tomato gray mold disease by Trichoderma harzianum and Bacillus subtilis

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خلاصه مقاله:

This study aimed to evaluate the antagonistic activity of some fungal and bacterial isolates against Botrytis cinerea, the causal agent of tomato gray mold disease. For this purpose, out of six fungal isolates obtained from the gray mold symptoms on tomato and melon, isolates B۱ and B۲ were selected based on the pathogenicity test result for the in vitro and in vivo experiments. These isolates were identified as Botrytis cinerea based on morphological and molecular information (ITS sequence). In dual culture test of two bacterial and six antagonistic fungal isolates, Trichoderma harzianum T۱ and Bacillus subtilis B۴۳ with up to ۶۰% and ۷۱.۵۴% of inhibition levels, respectively, were the most efficient treatments to limit fungal growth. In volatile compounds tests, isolates T۱ and B۴۳ inhibited pathogen mycelia growth up to ۹۵.۹۸ and ۱۰۰%, respectively. The results of the secondary metabolites test showed that B. subtilis B۴۳ inhibited pathogen mycelium growth by ۹۸%. In vivo experiments showed that the isolates T۱ and B۴۳ controlled gray mold of tomato effectively, and the average inhibition rates were more than ۶۰%. None of the antagonistic isolates significantly affected the height, fresh and dry weight of whole parts of the plants compared to healthy control.

کلمات کلیدی:

Antagonist, biological control, Botrytis cinerea, tomato