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*Abstract*

# Antifungal Activity of Thymol against the Main Fungi Causing Fruit Rot in In Vitro Conditions †

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**Abstract:** Pomegranate fruit rot is caused by the fungi *Penicillium* spp., *Aspergillus* spp., *Botrytis cinerea*, *Rhizopus* spp., *Nematospora* spp. and *Coniella* spp. In the present study, the antifungal effects of thymol on the growth of *Aspergillus niger* and *Penicillium commune* isolated from pomegranate fruits were investigated in in vitro conditions. The experiment was performed as a factorial based on a completely randomized design (CRD) with three replicates. The minimum inhibitory concentration (MIC) and minimum fungicidal concentration (MFC) of thymol for both fungi were 250 and 500 μg $mL^{-1}$, respectively. The lowest diameter of the *Penicillium commune* colony (6.66 mm) was found at a concentration of 250 μg $mL^{-1}$ after 168 h; however, it was not significantly ($p \leq 0.01$) different from the diameter of the *Aspergillus niger* colony at the same time. Thymol at the concentration of 500 μg $mL^{-1}$ had a similar effect as a fungicidal agent compared with thiabendazole (1500 μg $mL^{-1}$).

**Keywords:** *Aspergillus niger*; minimum inhibitory concentration; minimum fungicidal concentration; *Penicillium commune*

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