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Abstract

Effects of Thymol on the Morphology of the Main Fungi Causing Pomegranate Fruit Rot †

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Abstract: Pomegranate fruit rot leads to the loss of a significant quantity of fruit worldwide. In the present study, the antifungal effects of thymol on the morphology of *Aspergillus niger* and *Penicillium commune* as the main fungi causing pomegranate fruit rot were investigated in in vitro conditions. Examination of cell morphology using scanning electron microscopy (SEM) in *Aspergillus niger* colony showed that cell deformation was observed due to the destruction of the cell membrane and loss of cell wall strength at a concentration of 250 μg mL^{-1} (50% FC) after 168 h. Produced hyphae had irregular branching and no spore production was observed. Evaluation of *Penicillium commune* colony cell morphology using SEM showed that thymol at a concentration of 250 μg mL^{-1} (50% FC) caused superficial wrinkles, bifurcation of the hyphal apex, and no spore production was observed.

Keywords: antifungal effects; *Aspergillus niger*; *Penicillium commune*; scanning electron microscopy

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