

Title The effects of some medicinal plants essential oil on the growth inhibition of *Botrytis cinerea* and *Rhizopus stolonifer* under in-vitro conditions

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Abstract

Foeniculum vulgare, *Carum carvi*, *Thymus vulgaris* and *Mentha piperita* essential oils were tested for their effectiveness against *Botrytis cinerea* and *Rhizopus stolonifer* on artificial growth media. The chemical composition of the oils was determined by gas chromatography-mass spectrometry (GC-MS). The growth of *Botrytis cinerea* and *Rhizopus stolonifer* was completely inhibited by Fennel and Black zira essential oils at relatively low concentrations (400-600 µlit/lit). Mean separate test (Duncan P<0.01) indicated essential oils of Fennel (76.29%) and black zira (74.85%) have the higher inhibition percentage of growth in *Rhizopus* and *Botrytis* fungus, respectively. Percentage of fungus spores germination were the lowest in medium Fennel and Black zira essential oils contained and were the highest in Thymus ones. As for GS and GS/MS analysis, dominant essential oil in Black zira was comin aldehyde and in Fennel was anethol that both have strong antifungal effect.