

بسم الله الرحمن الرحيم





شبكة المعلومات الجامعية التوثيق الالكتروني والميكروفيلم



جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

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بعض الوثائق الأصلية تالفة



Control of Some Phytopathogenic Fungi by Materials from Medicinal Plants

By

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B. Sc. Agric. (Soils & Water, 1996),

Faculty of Agriculture, Fayoum,

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Supervision Committee

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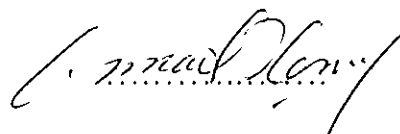
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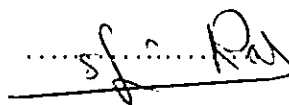
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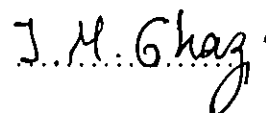
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Abstract

Four solvents; Water, 50% ethanol/ water (E/W), chloroform and hexane were used for the preparation of extracts from 10 medicinal plants' materials. These extracts were tested for their antimicrobial effect against 4 bacterial strains, 4 fungal strains and 1 yeast strain. Test organisms varied in their susceptibility to different plant extracts. However, the ethanol/water and chloroform extracts were generally more efficient than the other extracts. The inhibitory effect of oil emulsions of Basil and Geranium were tested at the concentration of 1: 30 (oil: water). The results indicated a powerful antifungal effect of these oils. The basil oil showed a relatively higher activity than that of geranium.

The concentration of 20 and 25% of Khilla extract was the MIC against *Phytophthora infestans* and *Fusarium oxysporum* f.sp. *lycopersici*. The concentration of 7.5 and 10% completely stopped spore germination as the MIC for basil and geranium oil emulsions, respectively against the *Fusarium* strain. The 5% concentration of oil emulsions from geranium and basil was the MIC against the *Phytophthora* strain. The MIC of geranium and basil oils' emulsions against *A. flavus* was the concentration of 12.5% in the medium. For the determination of MIC for the geranium oil emulsion against *A. niger*, the concentration of 5% prevented spore germination for both *Aspergillus* strains. The MIC of basil oil emulsion was the concentration of 7.5%.

Pot experiments were carried out to study the effect of geranium and basil oils' emulsions at the concentrations of 1.5, 3 and 5 folds of MIC for controlling tomato wilt disease caused by *Phytophthora infestans* and *Fusarium oxysporum* f.sp. *lycopersici*. The data showed that increasing the concentration of oil emulsion and the increase in dipping period of seedlings' roots before planting resulted in a lower death rate of tomato seedlings. The best effect for geranium oil emulsion was recorded at the concentration of 5 MIC and 10 minutes dipping period. For the basil oil emulsion, the best results were obtained from the treatment of 3MIC with dipping for 10 minutes.

Grain storage experiment was carried out for controlling fungal spoilage of stored maize. The treatment with oil emulsions before storage was the active way to control grain spoilage than the treatment of infected grains with these oils.

Keywords: Medicinal plants, Aromatic plants, Antibacterial, Antifungal, Natural products, Plant disease control, Stored grains protection.

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