Abstract

Nowadays, biological control of plant pathogens to decrease ecological unpleasing effects of chemical poisons plays an important role. The extract of some plants have antifungal properties because of active metabolites in their contents. In this study, water, methanol, chloroform, acetone and ethanol were used, such as solvent to obtain extracts of aromatic blooms of clove (*Syzygium aromaticum* L.), root, stem, leaf, and fruit limbs of physalis (*Physalis alkekenji L.*), aerial parts of nerium (*Nerium leander L.*), aerial parts of sumac (*Rhus coriaria* L.), bark of cinnamon (*Cinnamomum zeylanicum* Blume.) and aerial parts of peppermint (*Mentha pipertia* L.) and tested against four phytopathgenic fungi: *Rhizoctonia solani, Phytophthora drechsleri*, *Fusarium oxysporum,* and *Bipolaris sorokiniana.* Processing the antifungal activity of studied plants extracts and determination of the minimum inhibition concentration (MIC) was done using paper-disc and agar diffusion methods. The results of mycelia growth inhibitor activity examination about studied species and different concentration of extracts were compared with fungi static amount of poisons. This study showed that plants sumac, clove, cinnamon and peppermint had the inhibitory effect against all the examined species. This inhibitory effect (Fungistatic) is different according to the type of used solvent for smelting the extract. The highest inhibitory effect was related to the extracts of methanol, ethanol and acetone solvents (Signification 0.1 %). The inhibitory amount of the 3 mg/paper-disc of clove's ethanol and methanol extract against *P. drechsleri* and *R. solani*, and 4 mg/paper-disc of ethanolic, methanolic and acetonic extracts of clove and 5 mg/paper-disc of cinnamon's acetone extracts against *Bipolaris sorokiniana*, *Rhizoctonia solani* and *Phytophthora drechsleri* fungi equals with an amount of 0.5 mg/paper-disc of Mancozeb poison as the frequently used poison. The highest amount of physalis inhibition is due to the smelted extract of leaf using acetone solvent on the *P. drechsleri* specie and ethanolic extract of physalis fruit on the *B.sorokiniana*. Menthol formation in peppermint, Cinnamaldehyde in cinnamon, Eugenol in clove, Tannin in sumac have the highest amount of secondary metabolite in these. And also regarding to the existence of Flavonoids compounds in these plants, these compounds could be presented lonely or at an interaction with other existing compounds as the only effective factor in antifungal quality. These results show the potentiality of plant's secondary metabolite to control plant pathogenic fungi.

Key word: Plant extract, Solvent, Fungi, Secondary metabolites

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