

Evaluation of *in vitro* antifungal activity of medicinal plants against phytopathogenic fungi

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Fourteen medicinal plants belonging to 13 families were collected and extracted with petroleum ether (PE), chloroform, methanol and water to yield 60 crude extracts. Using agar diffusion method, these extracts were evaluated for antifungal activity on the growth of five phytopathogenic fungi. Among all the extracts tested, PE, chloroform and methanol extracts of *Piper betle* L. and PE and chloroform extracts of *Allamanda cathartica* exhibited promising antifungal activity. Minimum inhibitory concentration (MIC) values of the above promising extracts were determined using broth dilution technique and observed that chloroform extract of *P. betle* L. exhibited the least MIC value ranging from 280 to 1130 $\mu\text{g ml}^{-1}$. In this study, we report chloroform extract of *P. betle* L. to be thermally stable even when steam sterilised for the first time and that it could be stored at 4°C with almost no change in its activity for a period of 180 days.

Keywords: plant extracts; antifungal activity; MIC

1. Introduction

Outbreak of fungal diseases causes significant loss in many important vegetable crops and plants. Many fungi are harmful as they are pathogens of plants, animals and human beings or produce metabolites that are toxic to plants and animals (Richard et al. 1993; Bowers and Locke 2000). Generally, fungicides are used for control but despite their success, the use has not resulted in the complete eradication of pathogens. Moreover, indiscriminate use of fungicides has resulted in several adverse effects like development of resistance, resurgence of pathogens, toxic effects on beneficial microflora of the soil, residual toxicity to human beings, domestic animals, etc. and takes long time to degrade completely (Fawcett and Spencer 1970). Therefore, there is a need for more effective and less toxic new antifungal agents (Himejima and Kubo 1992; McCutcheon et al. 1992; Moossavi et al. 2001). Searching of plant derived fungicides is one of the novel approaches for replacement of harmful synthetics with safer botanicals. Many plants have been traditionally used

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