● *RESEARCH ARTICLE* ●

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Antifungal activity and chemical profile of five medicinal plants

N. SHINDE VISHAL AND SAHERA NASREEN

ABSTRACT

The extracts of six medicinal plants prepared in 80 per cent methanol and cold water were tested for their antifungal activity against five pathogenic fungi such as *Alternaria brassicae, Collectotrichum lindemuthianum, Fusarium moniliforme, Helminthosporium sativum, Stemphylium verruculosum*. Furthermore all extracts were analyzed for the detection of secondary metabolites. Some extracts revealed presence of flavonoids, indole alkaloids, reducing sugar, cardiac glycosides, saponins, steroids, tannins and terpenoides. Among all the plant extracts, methanol extract of *Lawsonia inermis* and *Hyptis sauvolens* leaves showed significant antifungal activity against targeted pathogens. Methanol extracts revealed grater antifungal activity as compared to aqueous extracts. All extract were separated into different compounds on TLC. Toluene/ethyl acetate (1:1) solvent exhibited best bands separation of methanol extracts. There were 52 bands exhibited by methanol extracts and 33 bands were found in aqueous extracts in the same solvent system. The highest number of bands was found to be in methanol extracts of *L. inermis* (10) followed by *M. elengi* (8) and *T. occidentalis* (7). The antifungal activity revealed by these plants could be attributed to the synergetic effect of two or more detected compounds.

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Key words : Antifungal activity, Methanol extracts, *Lawsonia inermis,* Secondary metabolites

INTRODUCTION

Vegetables being more succulent and rich in nutrients are prone to variety of diseases right from the sowing to till marketing, thereby increasing yield losses during pre and post production periods. Among vegetables, leafy vegetables are most essential component of our diet which nourishes with nutrients, minerals and vitamins. Since last couple of decades infectious diseases have been threatening the life millions of people in both developing as well as developed countries (Ashbo,2004). Resistant rate among important pathogens of plants and animals continuous grow at an alarming rate in distinct geographical regions of the world (Schmitz *et al.*,1999). Recent trend favours the use of alternative substance derived from natural plant extracts to control the diseases because plants extracts show antifungal activity against a wide range of fungal plant pathogens (Abd-Alla, *et al.,* 2001). Natural products, either as a pure compounds or standardized plant extracts provides ultimate opportunities for new drugs because of unmatched availability of chemical diversity. So there is continuous and urgent need to discover new antimicrobial compounds with diverse chemical structure and novel mechanism of action for new and reemerging infectious diseases (Rojas *et al.,* 2003). Plant synthesize number of secondary metabolites such as tannins, saponins, alkaloids, flavonoids, etc., which play defensive role in plants and therefore, they protect the plants from their invaders like fungi, bacteria, viruses, nematodes, etc. By keeping this thing in mind, six medicinal plants were tested for antifungal activity and their chemical profiling.

Address for correspondence :
VISHAL N. SHINDE, Department of Botany, Government Institute of Science, AURANGABAD (M.S.) INDIA
E-mail : vishalshinde1001@gmail.com

Authors' affiliations :
SAHERA NASREEN, Department of Botany, Government Institute of Science, AURANGABAD (M.S.) INDIA

MATERIALS AND METHODS

Plant material:

The healthy, infection free mature parts of six medicinal