

## Antibacterial effect of *Equisetum arvense* L.

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The present study intends to review antimicrobial investigation of the alcoholic and chloroform extracts of *Equisetum arvense* which is traditionally used as herbal medicine. Antibacterial activity of the alcoholic and chloroform extracts of *Equisetum arvense* were tested against *Bacillus subtilis*, *Escherichia coli*, *Salmonella typhi* and *Staphylococcus aureus*. Seasonal sampling of the *Equisetum arvense* were also carried out in three different seasons summer, winter and rainy. The extracts of *Equisetum arvense* were prepared in alcohol and chloroform and compared with the 1 unit strength of antibiotic tetracycline. It was effective against *Bacillus subtilis* and more effective in summer season than rainy and winter seasons. Alcoholic extracts was found more effective than chloroform.

Key words : Antibacterial, *Equisetum arvense*

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### INTRODUCTION

The herbal medicine is used for primary health care in present day. Herbal medicine is a major component in all indigenous peoples' traditional medicine and a common element in Ayurveda, homeopathic, naturopathic, traditional oriental, (Kumar and Kaushik 1999,2009). According to WHO around 119 plant-derived pharmaceutical medicines, about 74 per cent are used in modern medicine in ways that correlated directly with their traditional uses as plant medicines by native cultures. Major pharmaceutical companies are currently conducting extensive research on plant materials gathered from the rain forests and other places for their potential medicinal value (Chandra, 2008)

Throughout the middle ages, home-grown botanicals were the only medicines readily available, and for centuries, no self-respecting household would be without a carefully tended and extensively used herb garden. For the most part, herbal healing lore was passed from generation to generation by word of mouth. Mother taught daughter; the village herbalist taught a promising apprentice (Kaushik and Chauhan, 2009).

Pteridophytes by virtue for their possesses great variety and fascinating foliage have drawn the attention and admiration of research worker. They reported around 305 genera and 10000 species all over the world, about

191 genera and 1000 species are reported from India. (Nema *et.al.*, 2008).

*Equisetum* is the only living genus in the *Equisetaceae*, family of vascular plants that reproduce by spores rather than seeds. which for over one hundred million years was much more diverse and dominated the understory of late Paleozoic forests. Some Equisetopsida were large trees reaching to 30 meters tall, the genus *Calamites* of family Calamitaceae for example is abundant in coal deposits from the Carboniferous period. A superficially similar but entirely unrelated flowering plant genus, mare's tail (*Hippuris*), is occasionally misidentified and misnamed as "horsetail". (Cetto *et al.*, 2000)

*Equisetum* contains high amounts of silica. Since at least the days of ancient Greece, physicians have relied on *Equisetum arvense*, and the other horsetail varieties as potent medicines. Horsetail's efficacy as a medicinal plant largely depends on its sterile stem (as opposed to the fertile stem), which contains high amounts of silica and magnesium. Extracts from the fresh plant are often used, but sometimes ashes from the burnt herb are prescribed. Seventeenth-century physicians frequently employed the herb, especially to treat bleeding. It is very powerful to stop bleeding, either inward or outward, the juice or the decoction being drunk, or the juice, decoction or distilled water applied outwardly (Nagai *et al.*, 2005).

Horsetail, an effective diuretic, is included in anti-