

**PRELIMINARY PHYTOCHEMICAL SCREENING OF SOME MEDICINAL PLANTS**

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**ABSTRACT**

This paper deals with Phytochemical studies of some common medicinal plants viz. *Aegle marmelos* L. (Bel), *Centella asiatica* L. (Brahmi), *Gymnema sylvestere* Retz. (Gudmar), *Syzygium cumini* L. (Jambhul), *Trigonella foenum-graecum* L. (Methi), *Boerhavia erecta* L. (Punarnava) & *Acorus calamus* L. (Vekhand). Phytochemical tests were carried out to know about the qualitative existence of secondary metabolites in them. For the current article screening of alkaloid, anthocyanin, cellulose, flavonoid, glycoside, leucoanthocyanin, phenol, quinone, saponin, tannin, terpenoid and have been carried out.

**INTRODUCTION**

The importance of plants is well known to us. Plant kingdom is a treasure house of potential drugs and in the recent years there has been an increasing awareness about the importance of medicinal plants. Drugs from the plants are easily available, less expensive, safe, efficient and rarely have side effects. The plants which have been selected for medicinal use over thousands of years constitute the most obvious choice of examining the current search for therapeutically effective new drugs such as anticancer drugs. According to WHO medicinal plants would be the best source to obtain variety of drugs. About 80% of individuals from developed countries use traditional medicines, which has compounds derived from medicinal plants. However, such plants should be investigated to better understand their properties, safety and efficiency Arunkumar and Muthuselvam (2009) Medicinal plants contain some natural products which perform definite physiological action on the human body and these bioactive substances include tannins, alkaloids, carbohydrates, terpenoids, steroids and flavonoids Edoga *et al.* (2005) These compounds are synthesized by primary or rather secondary metabolism of plants. Secondary metabolites are chemically and

taxonomically extremely diverse compounds with obscure function. They are widely used in the human therapy, veterinary, agriculture, scientific research and countless other areas (Trease and Evans, 1978).

Knowledge of the chemical constituents of plants is desirable because such information will be valuable for synthesis of complex chemical substances (Mojab *et al.*, 2003). In the present work, qualitative phytochemical analysis were carried out in seven plants. In the present work, qualitative phytochemical analysis were carried out in seven plants *Boerhavia erecta* L. (Nyctagenaceae), *Gymnema sylvestere* Retz. (Asclepiadaceae), *Syzygium cumini* L. (Myrtaceae) *Aegle marmelos* L. (Rutaceae), *Acorus calamus* L. (Pandanaceae), *Centella asiatica* L. (Apiaceae) & *Trigonella foenum-graecum* L. (Fabaceae).

**MATERIAL AND METHODS**

Preliminary phytochemical testing for the presence of various compounds by standard methods like Anthocyanins and Leucoanthocyanins (Paris and Moyse 1969), Steroids (Gibbs, 1974), Phytosterol (Finar, 1996), Benedict's test for reducing sugar (Ramakrishnan *et al.* 1994), Hagers test for Alkaloid (Wagner *et al.* 1996), Tannins (Treare and Evans, 1985), Saponins (Kumar

et al., 2009), Terpenoids by Salkowski test (Ayoola et al., 2008) and compounds like Phenols, Flavonoids, Quinones, Cellulose, Glycosides and Triterpenes compounds by Khandelwal (2000) were conducted.

## RESULT AND DISCUSSION

The phytochemical screening of 7 Medicinal plants was studied and showed positive test for tannin compounds and negative for anthocyanin and steroids. Tannins are secondary metabolites responsible for antimicrobial properties in various plants (Chung, 1998). The plants under study are generally used in the treatment of human disorders due to microbes. *Gymnema sylvestre* & *Acorus calamus* showed positive test for terpenoids. Terpenoids and tannins are attributed for analgesic and anti-inflammatory activities. Apart from this tannins contribute property of astringency i.e. faster healing of wounds and inflamed mucous membrane (Okwu & Josiah, 2006). Except *Syzygium cumini* all plants showed positive test for saponins. In addition to industrial applications as foaming and surface active agents, saponins have been extensively used as detergents, pesticides and molluscicides & also have beneficial health effects. (Arunasalam, 2004).

Three plants (Table.1) showed positive results for phenol. The phenolic compounds are one of the largest and most ubiquitous groups of plant metabolites (Singh 2007). They possess biological properties such as antiapoptosis, antiaging, anticarcinogen, antiinflammation, antiatherosclerosis, cardiovascular protection and improvement of endothelial function, as well as inhibition of angiogenesis and cell proliferation activities. *Aegle marmelos* and *Centella asiatica* showed positive result for flavonoids. Flavonoides are hydroxylated phenolic substances known to be synthesized by plants in response to microbial infection and they have been found to be antimicrobial substances against wide array of microorganisms. Three plants (Table.1) showed positive test for Alkaloids. They have been associated with medicinal

uses for centuries and one of their common biological properties is their cytotoxicity. Several workers have reported the analgesic, antispasmodic and antibacterial properties of alkaloids. Four plants (Table1) showed positive result for glycosides. Glycosides are known to lower the blood pressure (Nyarko and Addy, 1990). Quinones showed positive test in two plants (Table.1) Natural or synthetic quinones show a biological or pharmacological activity and some of them show antitumoral activity (Liu 2011). Except *Gymnema sylvestre* all plants showed positive test for cellulose. The role of Cellulose in plants is well known.

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Table 1: Phytochemical Screening in Some Medicinal Plants

Phytochemical Test	<i>Boerhavia erecta L.</i>	<i>Gymnema sylvester Retz.</i>	<i>Syzygium cumini L.</i>	<i>Aegle marmelos L.</i>	<i>Acorus calamus L.</i>	<i>Centella asiatica L.</i>	<i>Trigonella foenum-graecum L.</i>
Antho-cyanines	-	-	-	-	-	-	-
Steroids	-	-	-	-	-	-	-
Terpinoids	-	+	-	-	+	-	-
Tannins	+	+	+	+	+	+	+
Saponins	+	+	-	+	+	+	+
Leuco anthocyanins	-	-	-	-	-	-	-
Phenols	-	-	-	+	+	-	+
Flavonoids	-	-	-	+	-	+	-
Quinon	-	-	-	+	-	+	-
Cellulose	+	-	+	+	+	+	+
Glycosides	-	-	+	-	+	+	+
Triterpenes	-	-	-	-	-	+	-
Phytosterol	-	-	+	+	-	-	-
Benidicts test (Reducing sugar)	-	-	+	-	+	-	-
Hagers test (Alkaloid)	+	-	-	+	+	-	+