International Journal of Research in Engineering and Bioscience ISSN: 2321-743X
Special Issue : National conference on "**Drug discovery, Threatened medicinal plants and strategies for sustainable use**" EDITED BY, S. DOMINIC RAJKUMAR & J. K. LAL
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IJREB

ISSN 2321-743X
International Journal of Research in
Engineering and Bioscience
Volume 1 (Special Issue 1)
Journal home page: www.ijreb.org

PHYTOCHEMICAL STUDIES ON SELECTIVE MEDICINAL PLANTS

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ABSTRACT

The present study was carried out to characterize the bioactive constituents presence in different plant leaves of *Nyctanthes arbour-tristis, Calotropis gigantea*, *Adhatoda vasica*, *Lantana camera* and *Nerium oleander.* Presence of compounds Alkaloids, Tannins, Phenolic compounds, Steroids, Flavonoids, Coumarins, Terpenoids and Volatile oil Protein, Amino acids and Lipid were identified by the qualitative analysis. Biochemical estimations were also carried.

Keywords: Medicinal plants, phytochemical screening, biochemical compounds.

INTRODUCTION

According to World Health Organisation medicinal plants would be the best source to obtain a variety of drugs. About 80% of individuals from developed countries lies traditional medicine. Natural products from microbial sources have been the primary source antibiotics with the increasing recognition of herbal medicine as an attractive form of healthcare. The screening of medicinal plants for active compounds has become very significant. (Koduru *et al.*, 2006), some Phytochemicals product produced by plants have antimicrobial activity and used for the development of new antimicrobial drugs (Nascimento GGF *et al.*, 2000). These substances serve as plant defense mechanism against production by microbes. Insects , herbivores some Terpenoids, give plants order some of the plant pigments, some plant flavour and some herbs, species used by humans season food yield and useful medicinal compounds(Adamu *et al.*, 2005).

Plants as a source of medicine have been inherited and are important compounds of the healthcare system in India. In the Indian system of medicine most practitioners formulate and disperse their own recipes, hence this requires proper documentation and research. In western world also, the use of herbal medicine is steadily growing with approximately 40% population response to use of hers to treat medical illnesses within the fast year. Public academic and government interest in traditional medicines is growing exponential due to the increased incidence of the advance drug reaction and economic burden of the modern system of medicines. Therefore such plants should be investigated to better understand the properties, safety and efficiency. The antimicrobial properties of plant have been investigated by member of researchers worldwide.

Today investigated for phytochemical screening studies selective medicinal plants. In different plants part extract collected for further analyses used for (Brindha *et al.*, 1981). Method the investigation carried out tat preliminary Phytochemical analyses was aqueous extract of five different plants extract, the *Calotropis gigantea* (L.) more Phytochemicals such as Alkaloids, Tannins, Phenolic compounds, Volatile oil, steroids, saponins. When compare to other plant extract. Some biochemical compound present in Calotropis sps protein, amino acids and lipids valuable

secondary metabolites. To compared the therapeutic purpose and commercial interest to both pharmaceutical companies and research institutes production of new drugs.

MATERIALS AND METHODS

Collection of plant materials

The healthy plant samples were collected from Anbil of Trichirappalli District. The plants were *Nyctanthes arbour-tristis* (L.), *Nerium oleander* (L.), *Calotropis gigantea* (L.), *Adhatoda vasica* (L.) and *Lantana camera* (L.).

Medicinal plant samples

1gm of fresh extract collected from the leaves, fresh sample were extracted with 10ml of 80% ethanol solvent with gentle stirring for 72 hr. The sample kept in dark for 72 h with intermittent shaking. After incubation, the solution was filtered through whatmann no.1 filter paper and the filtrate was collected (crude extract) it was then transferred to glass vials and kept at 4˚c before use.

Phytochemical analyses

Phytochemical analyses for major phytochemical constituents of the plant extract were undertaken using standard method as described by (Brindha *et al.*, 1981). The plants extracts were screened for the present of biological active compounds like sugars, amino acids, proteins, phenols, steroid, Terpenoids etc.

Estimation of proteins

The protein in solution can be measured quantitatively (Bradford method).

Estimation of Lipids

The lipids in solution can be measured quantitatively by using (TPA Devasagayam *et al*., 2003) method.

Estimation of total free amino acid:

Amino acids in solution can be measured quantitatively by using **(**Troll and canon, 1953) method**.**

RESULTS AND DISCUSSION

Medicinal plants which form the backbone of traditional medicine, in the last few decades have been the subject for very intense pharmacological studies. The plants as potential source of new compounds of therapeutic value and as sources of lead compounds in drug development in developing countries, it is estimated that above 80% of population rarely depends on traditional medicine for the primary healthcare. There arises a need to screen medicinal plants for bioactive compounds as a basic for further pharmacological studies.

The biological activities were based on phytochemical analyses; extract

of *Nyctanthes arbour-tristis* (L.) showed the presence of Alkaloids, Tannins, and Phenolic compounds. In Leaves extract of *Nerium oleander* (L.), Steroids, Tannins, and Phenolic compounds were identified. Leaf extract of *Lantana camera* (L.) have Alkaloids, steroids Tannins and Phenolic compounds. Leaves extract of *Calotropis gigantea* (L.) contain Alkaloids, Tannins and Phenolic compounds, Flavonoids and Volatile oil were present in the *Adhatoda vasica* (L.) leaf extract. By the estimation of biochemical parameters, the plant extracts have high content of protein, amino acids and lipids. The biochemical compounds highly present in *Calotropis gigantea* (L.). It used for various therapeutic purposes. The commercial interest to the pharmaceuticals companies and research institutes in the production of new drug from this plant. Medicinal plants are of great importance to the health of individuals and communities. The medicinal value of these plants is because of some chemical substances that produce a definite physiological action on the human body.

Table 1: Preliminary Phytochemical analysis of selected medicinal plants leaf extracts

Phytochemical constituents	***N. arbour tristis* (L)**	***N. oleander* (L)**	***L. camera* (L)**	***C. gigantea* (L)**	***A. vasica* (L)**
Alkaloids	+	-	+	+	+
Terpenoids	+	-	-	+	+
Steroids	-	+	+	-	-
Coumarins	-	-	-	-	+
Tannins	-	+	+	+	-
Flavonoids	-	-	-	+	-
Phenols	+	+	+	+	+
Volatile oil	-	-	-	-	+
Quinines	-	-	-	-	-
Sugar	-	-	-	-	-

(+)Present, (-) Absent

Table 2: Quantitative Biochemical parameters of selected plants leaf extracts

S.No	Selected medicinal plants	Biochemical parameters (µgm/gm.fwt.tissue)		
		Proteins	Amino acids	Lipids
1	*N. arbour- tristis*	0.75	0.52	0.22
2	*N. oleander*	0.50	0.48	0.51
3	*L. camera*	0.80	0.44	0.11
4	*C. gigantea*	0.55	0.22	0.11
5	*A. vasica*	0.95	0.90	0.22

CONCLUSION

Phytochemicals protect human from a host of diseases. The present investigation carried out Preliminary Phytochemical analysis from ethanol extract of five different plants. The *Calotropis gigantea* (L) and *Adhatoda vasica* (L.) contain more Phytochemicals such as Alkaloids, Terpenoids, Coumarins, Flavonoids, Tannins, Phenolic compounds and Volatile oil when compared to other plant extracts. Some biochemical compounds are conformed in biochemical parameter analysis. *Calotropis gigantea* (L.) have high amount of protein and amino acid. *Nerium oleander* (L.) have high amount of Lipids compare to other plants. It can be conclude that the *Calotropis gigantea* (L.) and *Adhatoda vasica* (L.) possess the valuable secondary metabolites and biochemical compounds when compared to other plants. Hence it is used for various therapeutic purposes. The findings could also commercial interest to both pharmaceutical companies and research institutes in the production of new drugs

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