



Preliminary Phytochemical Screening of *Cordia Sinensis* Lamk. (Gondani)

Kothale K.V. and Wankhade M.R.

Department of Botany, Govt. Vidarbha Institute of Science & Humanities, Amravati. (M.S.) India ,
vkothale@gmail.com, mayurideshmukh3190@gmail.com

Abstract

The present investigation includes the preliminary phytochemical screening of medicinally and economically important plant *Cordia sinensis* Lamk. from the family Boraginaceae. The plant is commonly known as "Gondani". It is small tree its bark, leaves and fruits are used in Ayurvedic medicine. The wood is used as fuel and in the manufacture of agricultural implements. Whole plant is used in cut and injury; leaves used in treatment of hepatitis, fruits are edible. Roots are used against fever, skin diseases leprosy etc. Plant extracts were prepared in various organic solvents according to polarity i.e. petroleum ether, chloroform and water. The phytochemical screening was carried out and resulting into the presence of important bioactive compounds responsible for the healing various ailments"

Keywords- Phytochemical, Boraginaceae, bioactive compounds.

Introduction

The use of plants as medicine has a long history in the treatment of various diseases. The medicinal plant is defined as any plant, which one or more of its content contain substance that can be used for treatment of numerous diseases or as precursors for synthesis of useful drugs. The use of traditional medicine is wide spread throughout the world. The term traditional medicine is interchangeably used with herbal medicine and natural medicine (Hazan and Atta, 2005). The use of plant to heal or combat illness is probably as old as human kind. For thousands of years people from all corners of the globe have used herbs and plants to cure and prevent diseases. Many medicinal plants are found to be useful for wound healing in the traditional system of medicine (V.K. Verma *et al.* 2012).

Boraginaceae plants are frequently herbaceous and, the character of the hairs is due to cystoliths of silicon dioxide and calcium carbonate. *Cordia* is flowering plant in family Boraginaceae. It is very diverse and medicinally and economically important. The uses of *Cordia* species were highlighted in traditional literature of Ayurveda materia medica. These plants serve as a rich source of phytoconstituents. In traditional medicine *Cordia* species has long been used for astringent, anti-inflammatory, antimalarial, anthelmintic, diuretic, febrifuge, appetite, cough, suppressant and to treat urinary infections, lungs diseases and leprosy. In the tropics the species *cordia sinensis*. Lam is small tree growing in India. It is known as gundi, gondi in hindi, gondhani in marathi. The fruit pulp has antidiarrhoeal, astringent and antiseptic activities. The plant possesses antidote activity; the leaf paste is applied on wound and useful in inflammation of legs (B.G. Vaidya 1965). The plant is small, deciduous tree 5-8 cm height, young stem ridged, and young bark pale, branched glabrous, leaves light green oblong

elliptic or ob-lanceolate, glabrous with longer hairs in nerve axils and along the midrib. Flower sweet, scented, calyx glabrous, fruit yellow and orange mucilaginous and edible seed usually one. Fruit used as snacks, pickled. The bark is used for covering local huts. The fiber obtained from the inner bark is for making ropes, caulking boats.

Material and methods

The plant material was collected from different regions of Vidarbha. The morphological characters regarding the vegetation and floral parts of plants were studied. The plant material was collected for identification and classification standard floras were referred. Benthem and Hooker system of classification were used (Hooker 1876, Cook 1967, Naik 1998, Dhore 2002, N.P.Singh, P. Lakshminara Simhan S, Karthikeyan and P.V. Prasanna 2001).

Morphology of different parts of plant was observed and mentioned the character from the literature several uses of plant parts and chemical components present in them are also mentioned.

Phytochemistry collection and processing

The plant material was collected from Vidarbha during Jan to May, 2015 The plant were identified and authenticated at department of botany Government Vidarbha Institute of Sciences and Humanities, Amravati. The plant material was washed and shade dried. It was coarsely powdered with the help of mixture grinder and stored in zip lock polythene bags at 30- 32° C stored in a plastic containers,

Powder used for photochemical studies. Detection of bioactive compounds was done by standard prescribed methods (Horborne 1973; Sadashivan and Manikam 2005; Thimmaiya 1999). Responses to various test were denoted by +, ++, and +++ indicating weak, moderate and strong response respectively.

Observation Table - I**Photochemical tests of stem extracts of *Cordia sinensis* Lamk.**

Sr.No.	Constituents	Chemical Test	Extract		
			Petroleum ether	Chloroform	Water
1	Alkaloids	Dragendorff's Reagent	-	-	++
		Mayer's Reagent	-	-	-
		Wagne rs reagent	-	-	-
2	Carbohydrates & Glycosides	Fehling's Reagent	-	-	++
		Salkowski Reagent	-	+	-
3	Steroids	Liebermann- Burchard's re agent	-	+	++
		Foam test	-	-	+++
4	Saponins	Foam test	-	-	+++
5	Tannins	Gelatin test	-	-	-
		Ferric Chloride test	-	-	-
		Trim- Hill reagent	-	-	++
6	Iridiods	Trim- Hill reagent	-	-	++
7	Anthraquinone test		-	-	-
8	Leuco anthocyanin test		-	-	-
9	Juglone test		-	++	-
10	Flavonoids	Shinoda test	-	+	++
		Flavanonls test	-	-	-
		Flavonols test	-	-	-
		Flavones and flavanols	-	-	-
		Rao and sheshadri test	-	-	+

Observation Table - II**Photochemical tests of Leaf extracts of *Cordia sinensis* Lamk.**

Sr.No.	Constituents	Chemical Test	Extract		
			Petroleum ether	Chloroform	Water
1	Alkaloids	Dragendorff's Reagent	-	-	++
		Mayer's Reagent	-	-	-
		Wagne rs reagent	-	-	-
2	Carbohydrates & Glycosides	Fehling's Reagent	-	-	++
		Salkowski Reagent	-	+	-
3	Steroids	Liebermann- Burchard's re agent	-	+	++
		Foam test	-	-	+++
4	Saponins	Foam test	-	-	+++
5	Tannins	Gelatin test	-	-	-
		Ferric Chloride test	-	-	-
		Trim- Hill reagent	-	-	++
6	Iridiods	Trim- Hill reagent	-	-	++
7	Anthraquinone test		-	-	-
8	Leuco anthocyanin test		-	-	-
9	Juglone test		-	++	-
10	Flavonoids	Shinoda test	-	+	++
		Flavanonls test	-	-	-
		Flavonols test	-	-	-
		Flavones and flavanols	-	-	-
		Rao and sheshadri test	-	-	+

Discussion and Conclusion

Photochemical screening of plant extracts provides information about the photochemical constituents present in various plant parts. Phytochemical tests were carried out in the laboratory and screened out various metabolites from the plant. The curative properties of medicinal plants are perhaps due to the presence of various secondary metabolites such as saponins, tannins, alkaloids, flavonoids, glycosides, sterols, triterpenes etc. may be useful in the detection of the bioactive compounds and may be helpful in drug discovery. Preliminary Photochemical screening of bark extracts were done and recorded various secondary metabolites from bark (Ali Abdella Eltayeib *et al.* 2015). The qualitative tests for all the three extracts had shown the presence of various metabolites in stem and leaf extracts as mentioned in the observation table –I and II. In the stem recorded presence of alkaloids, carbohydrates, steroids, saponins, tannins, iridoids, leucoanthocyanin, juglone and flavonoids. Anthraquinone are absent.

Preliminary Photochemical screening of bark extracts were done and recorded various secondary metabolites from leaf extracts (Zala Arvindbhai Hajabhai *et al.* 2012). In the leaf extracts recorded presence of alkaloids, carbohydrates, steroids, saponins, iridoids, juglone, flavonoids. Anthraquinone, leucoanthocyanin, tannins are absent. In all the three solvent extracts it is seen that response in aqueous extract is excellent. These findings may be useful to the researchers as stepping stone in order to gain the advanced knowledge in the subject.

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