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## Phytochemical Screening of *Ficus heterophylla* L. f., Leaf of Moraceae Family.

Pravin A. Dhakite<sup>1\*</sup>, and Jagannath V. Gadpayale<sup>2</sup>.

<sup>1</sup>Department of Chemistry, S.N. Mor Arts, Commerce & Smt. G.D. Saraf Science College, Tumsar Dist-Bhandara. (INDIA).

<sup>2</sup>Department of Botany, S.N. Mor Arts, Commerce & Smt. G.D. Saraf Science College, Tumsar Dist-Bhandara. (INDIA).

### ABSTRACT

The present paper deals with the preliminary phytochemicals analysis to find out the various chemical constituents from the plant sample of *Ficus heterophylla* L. f. The plant specimen is utilized by the tribal communities for the treatment of various ailments such as Diabetes Mellitus, Cancer, and HIV etc. which is described in many folk books including Ayurveda. After completion of qualitative chemical analysis, the plant specimen shows the presence of carbohydrates, cardiac glycosides, phenol & terpenoids are present in all three solvents. Among all the three extracts, maximum phytochemicals were found dissolved in water, and methanol.

**Keywords**-*Ficus heterophylla* L. f., phytochemical analysis.

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*\*Corresponding author*

## INTRODUCTION

Biodiversity is blessed with a perennial source of medicinal plants which provided mankind with a rich source of medicines<sup>1</sup>. In developing nations, more than 80% of the people depend on traditional medicines for health care. Medicinal plants are in use for thousands of years and are renowned for their effectiveness in various treatments<sup>2</sup>. The medicinally usable plants were identified and extracted for biochemical profile and formulated for medical applications.

*Ficus heterophylla* L. f., grows in Tropical and Subtropical regions of India, (*Ficus heterophylla* tree is aboriginal to E. Asia - southern China, India, Sri Lanka, Myanmar, Thailand, Cambodia, Laos, Vietnam, Malaysia, Indonesia.) used for variety of purpose in traditional medicine. It belongs to the family Moraceae with a shrub habitat, often prostrate or growing up to 3 meters tall<sup>3</sup>. It is often being occurred in open places, particularly flood-margins of rivers. The trees produce three types of flower; male, a long-styled female and a short-styled female flower, often called the gall flower. All three types of flower are contained within the structure we usually think of as the fruit.

The leaf paste is applied for several days as a poultice on areas affected by rheumatism or on ear infections<sup>4</sup>.

## MATERIALS AND METHODS

### Plant Collection and Identification

The plant species were collected from the bank of Wainganga river of Tumsar regions of Bhandara District, Maharashtra, India during the months of August, September and October in the year 2017.



Photo plate

*Ficus heterophylla* L. f.

- A- Plant in Habit
- B- Variations in leaf
- C- Inflorescence

### Preparation of Extract

The *Ficus heterophylla* L. f., leaves were separated and cleaned well. Cleaned leaves were then dried under shade. The drying was done until all the water molecules evaporated and leaves became well-dried for grinding. After drying, the leaves were ground well using mechanical blender into fine powder and transferred into air-tight container with proper labeling for further use. The dried and powdered leaves were extracted

sequentially with methanol, ether, and aqueous using Soxhlet apparatus. The plant specimen leaves powder was weighed (20gm) and successively extracted with 200 ml of solvents like methanol (60°- 80° C), ether, and aqueous by soxhlation for a period of 24 hours.

### Qualitative Phytochemicals Screening

The methanol, ether and aqueous leaves extracts were screened for different phytochemicals constituents viz., carbohydrate<sup>5</sup>, reducing sugars, amino acids, protein, steroid<sup>9</sup>, flavonoids<sup>6</sup>, saponins<sup>6</sup>, alkaloids<sup>5</sup>, tannins<sup>7</sup>, phenol, terpenoids<sup>8</sup>, resins<sup>10</sup> and glycosides. The methods used to analyze the phytochemicals are as per standard method suggested by Harborne (1998) in Phytochemicals Methods- A Guide to Modern Techniques of Plant Analysis.

**Table1: Qualitative Phytochemicals Analysis of leaves of *Ficusheterophylla* L. f.,extracts**

S. No	Phytochemicals constituents	Water	Methanol	Ether
1	Alkaloids	-	+	-
2	Carbohydrate & Reducing Sugars	+	+	+
3	Saponins	+	-	-
4	Flavonoids	+	-	-
5	Protein	+	-	-
6	Tannins	+	+	-
7	Terpenoids	+	+	+
8	Steroids	+	+	-
9	Cardic glycosides	+	+	+
10	Amino acids	+	-	-
11	Resins	+	+	-
13	Phenolic compounds	+	+	+

‘+’ represents the presence of compounds; ‘-’ represents the absence of compounds

### RESULTS AND DISCUSSION

Results obtained for qualitative screening of phytochemicals leaves extracts of *Ficus Heterophylla* in three different solvents are shown in Table 1. It is seen that most of the compounds were present in the aqueous extract except alkaloids. The preliminary phytochemicals study reveals that the presence of carbohydrates, cardiac glycoside, phenol & terpenoids are present in all three solvents. The extract exhibits the presence of flavonoid, saponin, proteins and amino acids in aqueous extract but absent in ethanol and ether extracts. Phytochemicals tests such as tannins and phenolic compounds, polysterols, terpenoids, and resins are present in water and methanol extracts and absent in ether extract. The results of screening test revealed the presence of medically active compounds in leaves.

### CONCLUSION

The present study was carried out to determine the qualitative phytochemicals constituents present in the extracts of *Ficus heterophylla* L. f., leaf. The result reveals that the aqueous extract of plant material showed maximum phytochemicals constituents. The same extract could be utilized for the isolation of further bioactive metabolites. The study also provides a strong evidence for the use of extract to treat various pharmacological activities. It was concluded that the plant is rich in phytochemicals with significant medicinal applications.

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