



## Phytochemical Analysis of Some Medicinal Plants Used in Improving Stomach Function and Correcting Gastro-Intestinal Disorders

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### ABSTRACT

The traditional medicine involves the use of different plant extracts or the bioactive constituents. This type of study provides the health application at affordable cost. Secondary metabolites are responsible for medicinal activity of plants. Hence in the present study phytochemical screening of some important medicinal plants was carried out. Qualitative phytochemical analysis of these plants confirm the presence of various phytochemical like saponins, terpenoids, steroids, flavonoids, tannins, quinones, alkaloids. The results suggest that the phytochemical properties for curing various ailments. The plants under investigation showed their medicinal potential and can be source of useful drugs.

**Key Words-** Phytochemical screening, Medicinal plants, Secondary metabolites, Tannins, Steroids.

### I. INTRODUCTION

Medicinal plants have been used for centuries as remedy for human diseases because they contain the compounds of therapeutic values. Gastro- intestinal disease includes, the disease of esophagus, stomach, duodenum, jejunum, ileum, theileo-cecal complex, large intestine (ascending, transverse, and descending colon), sigmoid colon and rectum. The plant kingdom has proven to be the most useful in the treatment of diseases and they provide an important source of all the worlds pharmaceuticals. The most important of these bioactive constituents of plants are steroids, terpenoids, carotenoids, flavonoids, alkaloids, tannins and glycosides. Plants in an facet of life have served a valuable starting material for drug development. Antibiotics or antimicrobial substances like saponins, glycosides, flavonoids and alkaloids etc. are found to be distributed in plants, yet these

compounds were not well established due to the lack of knowledge and techniques. The Phytoconstituents which are phenols, anthraquinones, alkaloids, glycosides, flavonoids, and saponins are antibiotic principles of plants. From these phytoconstituents, saponins have been reported to exhibit hemolytic and foaming activity, antifungal, anti-inflammatory, fungistatic, molluscidal.

### II. MATERIAL AND METHODS

The plant material was collected from the Akola region and identified taxonomically in the department of Botany, Shri R.L.T. College of Science, Akola. The fresh seeds of the plants *Butea monosperma*, rhizome of *Curcuma longa* and rhizome of *Zingiber officinale* were air dried at room temperature until dried. The dried seeds of each plant were crushed to obtain powder These powdered

samples are then stored in air tight polythene bags protected from sunlight until used. The organic solvent like petroleum ether, alcohol, chloroform, acetone, benzene & aqueous extract of each sample was prepared by soaking as 1: 10 ratio that is 3 gm of powder sample in 30 ml of organic solvents and distilled water for 18 hr. The extracts are then filtered using Whatmanfilter paper.

### III. PHYTOCHEMICAL ANALYSIS

Chemical test were carried out on the organic solvents & aqueous extract and on the powdered specimens using standard procedure to identified the constituents as described by Harborne (1973),Edeoga et al. (2005) and Krishnaiah et al. (2009).

#### Test for alkaloids

To the 2-3 ml of filtrate, 1 ml of dil. HCL and Hager'reagent was added and shake well. Yellow precipitate was formed showing the presence of alkaloids.

#### Test for Flavonoids

To the small quantity of extract lead acetate solution was added. Formation of yellow precipitate showed the presence of flavonoids.

#### Test for Steroids

To 2 ml of extract of chloroform & 2 ml of conc.  $H_2SO_4$  was added. The solution was shaken well. As a result, chloroform layer turned red and acid layer showed greenish yellow fluorescence.

#### Test for Tannin

On addition of 5%  $FeCl_3$  solution to the extract deep blue black colour appeared.

#### Test for Saponin

To 1 ml extract 20 1ml distilled water has added and shake well in measuring cylinder. Then 1cm layer foam was formed.

#### Test for Cardiac glycosides

To the 5 ml extract 1ml of Conc.  $H_2SO_4$ , 2ml of Glacial acetic acid and 1 drop of  $FeCl_3$  solution was

added. Appearance of brown ring shows the presence of cardiac glycosides.

#### Test for Quinones

To the 2ml of extract conc.  $H_2SO_4$  was added and shake well for 5 min. shows the Red Colour.

### IV. RESULT AND DISCUSSION

The present investigation was carried out on three plants to study the presence of medicinally active phytochemicals in the seeds of three ethnomedicinal plants from Akola region (M.S.) India (Table- 1). The results are summarized in table 2. (a,b,c). Alkaloids, Tannins, Quinones are present in all plants investigated while steroids are present only Zingiber officinale and Curcuma longa, similarly cardiac glycosides present only in Curcuma longa and Butea monosperma, but flavonoids & saponins are present only in Zingiber officinale. The above result indicates that, the seeds of the plant investigated are rich in Alkaloids, Tannins, Flavonoids, Quinones, Steroids and also presence of Cardiac glycosides. Thus, the plants under investigation showed their medicinal potential and can be source of useful drugs. However, further studies are required to isolate the active principles and elemental detection of these plants are in process.

Table-1

#### Traditional use of under investigations

Sr. No.	Botanical Name	Family	Traditional use to cure.
i)	Butea monosperma	Fabaceae	Improving stomach function
ii)	Curcuma longa	Zingiberaceae	Correcting Gastro- intestinal disorders.
iii)	Zingiber officinale	Zingiberaceae	Improving stomach function Correcting Gastro- intestinal

disorders.

**Table - 2 (a, b, c)**Preliminary phytochemistry of three selected ethno- medicinal plants in five organic solvents & in aqueous (H<sub>2</sub>O).**a) *Butea monosperma***

Sr.N o.	Sec. Metabolites	P. E (Petroleum ether)	Alcohol	Chloroform	Acetone	Benzene	Aqueous
1	Alkaloids	+	+	+	+	+	+
2	Flavonoids	-	-	-	-	-	-
3	Steroids	-	-	-	-	-	-
4	Tannins	+	+	+	+	+	+
5	Sapponins	-	-	-	-	-	-
6	Cardiac glycosides	+	+	+	+	+	+
7	quinones	+	+	+	+	+	+

**b) *Curcuma longa***

Sr.N o.	Sec. Metabolites	P. E (Petroleum ether)	Alcohol	Chloroform	Acetone	Benzene	Aqueous
1	Alkaloids	+	+	+	+	+	+
2	Flavonoids	-	-	-	-	-	-
3	Steroids	+	+	+	+	+	+
4	Tannins	+	+	+	+	+	+
5	Sapponins	-	-	-	-	-	-
6	Cardiac glycosides	+	+	+	+	+	+
7	quinones	+	+	+	+	+	+

**c) *Zingiber officinale***

Sr.N o.	Sec. Metabolites	P. E (Petroleum ether)	Alcohol	Chloroform	Acetone	Benzene	Aqueous
1	Alkaloids	+	+	+	+	+	+
2	Flavonoids	+	-	+	+	+	-
3	Steroids	+	+	+	+	+	+
4	Tannins	+	+	+	+	+	+
5	Sapponins	+	+	+	+	+	+
6	Cardiac glycosides	-	-	-	-	-	-
7	quinones	+	+	+	+	+	+



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