

# Preliminary Phytochemical Screening and Ethnomedicinal use of *Sida acuta* L. from Poladpur Taluka of Raigad District

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**Abstract:** *Sida acuta* (Linn) is a common wireweed undershrub flowering plant from the Malvaceae family present in Poladpur taluka of Raigad District. All parts of plant such as leaves, flower, stem, roots and are used as use traditionally in the form of extracts or powder by tribal people of this area for treating various ailments such as cold and cough, stomach, dysentery, haemorrhoids, malaria, ulcers, renal inflammations, fever and asthma kidney, dandruff, rheumatism, liver problems, Attempts have been made to study the preliminary analysis of plant and their ethnomedicinal uses of selected plant.

**Keywords:** *Sida acuta* (Linn.) Malvaceae family, phytochemical screening, ethnomedicinal use..

## I. INTRODUCTION

The peoples are aware about using chemical and synthetic medicines cosmetics and give more preference to use of herbal products. India recognize more than 2500 plants species which have medicinal value, However, large flora is waiting for their medicinal properties.(Kirtikar et.al.1995)The use of medicinal plants as a source of medicine and human substances has been in vogue since antiquity India has rich heritage of use of plants as medicines and near about 805 medicines obtained from plants.

The Konkan region of Maharashtra comprises districts Raigad, Ratnagiri and Sindhudurg with a long coastline, It is also known from its beauty of sea, fruits such as mango, Jack fruits Coconut, Betel nuts orchards and also famous for Fort built by Chhatrapati Shivaji, It is also important due to first capital of Marathi state and also famous due to Dr Babasaheb Ambedkar of the oppressed classes organized Chavdar tale Agitation at Mahad on 20<sup>th</sup> March 1927.The main range of sahyadri, spurs and valleys form important botanical pockets of high biodiversity. The north east and east stretches of sahyadri supports luxuriant growth of vegetation in Maharashtra state. The area has forest situated on its surrounding mountains. Sahyadri hills have a huge reservoir of enormous natural resources including vegetation wealth and traditional knowledge of medicinal plants (Anonymous 2006).

### 1.1 Ethnomedicinal use:

The ethnomedicinal usage of *S. acuta* (Sanskrit name: Balapatta) has been reported from among the ethnic tribes from many parts of India. The tribal population from north eastern and southern parts of India have been extensively using different plant parts for treatment of dandruff, rheumatism, liver problems, kidney stones, nervous disorders, testicular swelling and elephantitis. Plant juice of fresh leaves is used for skin diseases or snake bites (Kerharo and Adam, 1974). Anti-vomiting, gastric disorders anti-fertility agent and sedative (Chen et.al.2007) (Palaksha et.al 2012).Paste is used with lemon juice and is applied on boils and abscesses. Decoction of roots is used to treat rheumatism and breathing disorders. Different countries such as Asian (Sri Lanka, Taiwan); Central and South American (Mexico, Venezuela, Colombia, Cuba, Nicaragua, Guatemala) and African countries (Nigeria, Togo, Ivory Coast, Kenya) also use this ethnomedicinal plant for treating various diseases.

### 1.2 Morphology of Plant

It is herb or under shrub, disturbed near to roadsides (Mann et al., 2003) leaves covered with minute stellate and rigid hairs, Calyx accrescent, mericarp mostly with two mucros, occasionally with awns, seed glabrous. The plant is native to Mexico and Central America but has spread throughout the tropics and subtropics (Holm et al., 1977).

## II. MATERIAL AND METHODS

Preliminary phytochemical analysis of leaf extracts of *Sida acuta*(Linn) is done as per method described by (Wagner 1998), (Harborne1988) and Eike Reich 2006).

### 2.1 Collection of Plant material

The whole plant was collected from Poladpur taluka of Raigad district in the month of August 2020 and correctly identified with the flora of Kolhapur District (**Dr S R Yadav**) a herbarium was prepared and deposited in the department of Botany of Sundarrao More Arts commerce and Science College Poladpur Dist Raigad. The leaves were washed gently with running tap water to remove surface dust, pollutants and dried under the shade. The dried plant material was made of powder using a mixture grinder.

### 2.2 Extraction of Plant Material

10 gm powder of *Sida acuta*(Linn) was extracted separately using 70% ethanol in a Soxhlet Extractor (Borosil) for about six hours. After extraction the extracts were evaporated to dryness. The dried extracts were dissolved in 5 ml ethanol and filtered using Whatman filter paper. The filtered extracts were later used for further phytochemicals and the sample of leaf extract of leaf extracts of *Sida acuta*(Linn) were filtered through the whatman filter paper No.1 and injected analysis.

### 2.3 Preliminary Phytochemical Analysis

Primary phytochemical analysis of ethanolic extract of *Sida acuta*(Linn) was done as follows.

- **Procedure for alkaloids:** 2 ml of extract is taken and added 2 ml of Wagner's reagent, a brownish precipitate indicating the presence of alkaloids.
- **Cardiac glycosides:** 2 ml of extract is dissolved with 2 ml of chloroform and concentrated sulphuric acid is carefully added to form a layer. Deep reddish brown colour at the interface of the steroid ring indicates the presence of cardiac glycosides.
- **Flavonoids:** 2 ml of extract is treated with 2 ml of 10%lead acetate. Yellowish green colour indicates the presence of flavonoids.
- **Saponins:** 2 ml of extract is dissolved with 2 ml of Benedict's reagent. Blue black ppt indicates the presence of saponins.
- **Tannins:** 2ml of extract is treated with 0.1% of ferric chloride. Brownish green indicates the presence of tannins.
- **Terpenoids:** (Salkowski test) 2 ml of extract is dissolved with 2 ml of chloroform and concentrated sulphuric acid is carefully added to form a layer. A reddish brown colour indicates the presence of terpenoids.
- **Anthraquinones:** 1 ml of extract is boiled with 10% HCL for a few minutes in a water bath. It is filtered and allowed to cool. Equal volume of CHCl<sub>3</sub> is added to the filtrate, a few drops of 10% Ammonia are added to the mixture and heat. Formation of rose pink colour indicates the presence of anthraquinones.
- **Glycosides:** The extract is hydrolysed with HCL solution and neutralised with NaoH solution. A few drops of Fehling's solution B are added and red precipitate indicates the presence of glycosides.
- **Reducing sugars:** The extract is shaken with distilled water and filtered. The filtrate is boiled with drops of Fehling's solution A&B for a few minutes. An orange red precipitate indicates the presence of reducing sugars.

**Table 1:** Different phytochemical compounds present in *Sida acuta*(Linn)

Sr No	Phytochemical compound	Present/Absent
1	Alkaloids	+
2	Mucilage and Saponins	-
3	Tannin	+
4	Cardiac Glycosides	-
5	Glycosides	-

6	Flavonoids	+
7	Reducing Sugars	+
8	Fixed oils	+
9	Gums	-

(+) Indicates the presence of chemical constituents (-) indicates the absence of chemical constituents

In the present research work preliminary phytochemical analysis of ethanol extracts of *Sida acuta*(Linn) Shows presence of Flavonoids, Tannin, Saponins, Alkaloid, Reducing Sugars and absence of Cardiac Glycosides, Glycosides, and Gums.

### III. RESULT AND DISCUSSION

In the present study the photochemical components of alkaloids, steroids, flavonoids, phenols, terpenoids, and cardiac glycosides were present in the aqueous extract and Mucilage and Saponins Glycosides Gums were absent in *S. acuta*.

The whole plant is shows ethnomedicinal properties such as antiasthmatic, aphrodisiac, analgesic, and antidepressant in treatment of various ailments including alopecia, diarrhoea, dysentery, insomnia, tumour, and various urogenital infections. (Wagner et.al 1998)

The study of *Sida acuta*(Linn) useful to determine the quality of crude drug and also useful for separation of secondary metabolites (Hung et.al 2012).The antiasthmatic, aphrodisiac, analgesic, and antidepressant, sedative, emetic, proteins, amino acids, tannins, phenolic, flavonoids, steroids and alkaloids, glycosides, tannins, saponins, etc. Hence in future it will be aimed to isolate the alkaloidal compounds from methanolic fraction and to screen their pharmacological activities in in vitro and in vivo models.

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