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Phytochemical evaluation of the ethanolic extracts of *Bauhinia tomentosa* Linn. (Root)

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Abstract

This research work carried about the phytochemical evaluation of the roots of Bauhinia tomentosa Linn. Belong to Fabaceae family. This study measures different physical and chemical characters, like- Ash Value, Extract, Chemical test which are useful in the Microscopical and Microscopical study of the root and different Pharmacological Activity of the plant such as Anti oxidant, Diuretic Activity and other more.

Key-Words: Phytochemical evaluation, Ethanolic extract, *Bauhinia tomentosa*

Introduction

Bauhinia tomentosa is an erect shrub with downy branches, leaves broader than long, curvaceous and pubescent below. Bauhinia is deciduous, but can be evergreen in a mild climate[1].

The specie name "tomentosa" means hairy and it refers to the velvety/hairy Pods. Bauhinia is a genus of more than 300 species of flowering plants in the sub family Cesalpinioideae of the large flowering plant family Fabaceae, with a pantropical distribution. These plants can be found along the coastal strip from southern Kwazulu-Natal to Maputoland, Mpumalanga as well as Mozambique, Zimbabwe, tropical Africa and as far as India and Srilanka[2].

The adult plants can tolerate a moderate amount of frost, but the seedlings and younger plants should be shielded from the frost. It prefers full sun and needs a moderate amount of water. It produces bright yellow flowers; fruits are pea like, slender and velvety. They are light green, turning a pale brown with age[3].

The flower from this tree, rich in pollen and nectar, attract various insects such as butterflies and bees. Flowers, buds, and dried leaves are used in dysentery. Fruit is used as a diuretic. Seeds are tonic and aphrodisiac. Root bark is used in inflammation[4].

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Material and Methods

Plant Collection

The collection of Plant was done from National Botanical Research Institute Lucknow (U.P.) India in the months of Jan to March 2010. The Root of this plant was shade dried and finely powdered with the help of mixer. A small amount of powdered drug was spread on a white tile and physically examined for general appearance i.e. color, nature.

Preparation of Ethanolic Extract

Aprox 150 gm. Root of *Bauhinia tomentosa* Linn dried at room temperature in shade. The shade dried plant material was coarsely powdered and subjected to continuously extract with petroleum ether (50 - 400C) till complete extraction. The solvent was removed by distillation and then concentrated extract was dried under reduced pressure using rotatory evaporator (at temperature not exceeding 400C) and then moderate heating on water bath. A yellowish brown extract was obtained. From the drug petroleum ether was removed and the defatted drug was extracted with ethanol (99%) till complete extraction, after completion of extraction the solvent was removed by distillation and then concentrated extract obtained was dried under reduce pressure at optimum temperature and then moderate heating on water bath. The ethanolic extract obtained was Dark Yellow in Color.

Preliminary phytochemical investigations

The preliminary phytochemical investigations were carried out with ethanolic extracts of roots of *Bauhinia tomentosa* Linn. for qualitative identification of

phytochemical constituents present with each extract and tests were carried out by following standard methods. All the chemicals and reagents used were of analytical grade. On the basis of all the qualitative tests performed in each extracts, ethanolic extract was subjected for the further phytochemical study like Ash value, Loss of Drying, Foreign organic matter, swelling index, Extractive value, Chemical tests etc.

Results and Discussion

The extractive value was calculated and was found to be 6.7 %. The extract was further examined for its physical characterization like color, odor, consistency etc. The color of the extract was dark yellow, with a semi-solid consistency. Extract had characteristic odor, showed the presence of desired phytochemicals. The result of the above study is compiled in Table 1. Different chemical tests were performed to determine the nature of the chemical constituent. The results of Chemical tests are compiled in Table 2. The results of the tests showed the presence of carbohydrates, reducing sugars, saponins, phenolics, tannins, and flavonoids. On the basis of all the qualitative tests performed in ethanolic extract was subjected for the further phytochemical and pharmacological.

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Table 1: Physical characteristics of ethanolic extracts of *Bauhinia tomentosa* Linn. (Root)

Name of Extract	Consistency	Color	Odor	Total Ash Value	Extractive value (w/w)
Ethanolic extract	Semi- Solid	Dark Yellow	Characteristic	4.5%	6.7%
Aqueous extract	Semi- Solid	Yellowish Brown	Characteristic	4.5%	4.6%

Table 2: Chemical tests in the ethanolic extract *Bauhinia tomentosa* Linn. (Root)

Phytoconstitutents	Ethanolic extract
Alkaloids	- -
Glycosides	+
Phenols/Tannins	- -
Flavonoids	+++
Saponins	-
Fixed oil/Fats	+
Gums & Mucilage	+
Carbohydrates	+ -
Amino acids	- -
Protein	- +
Steroids	+

(+) = Present, **(-)** = Absent