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Phytochemical screening of *Soymida febrifuga* Roxb. (Meliaceae) root bark

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Abstract

Soymida ferifuga, also known as mamsarhohini, is a plant in the meliaceae family that has a long history of use as a folk remedy. The root bark is often used to alleviate symptoms of leucorrhea, menorrhagia, and dysmenorrhea. The phytochemical properties of root bark were studied for the first time. The purpose of this study was to conduct a phytochemical evaluation of the plant using a variety of physicochemical characteristics (such as LOD, ash value, extractive value, phytochemical screening, and HPTLC fingerprint). According to the physicochemical indicator, all values are acceptable. Alkaloids, tannins, glycosides, and other chemicals have been detected by phytochemical analysis. Based on the results, it can be stated that the test parameters may be used as identification tool for this plant, and subsequent study work can be based on these parameters. HPTLC fingerprint demonstrates the separation of greatest number of chemical moieties.

Key-Words: *Soymida febrifuga*, Mamsarohini, root bark

INTRODUCTION:

Traditional medical practice in India is among the world's oldest, most developed, and most varied. All around the nation, indigenous communities pass forth knowledge about medicinal plants via oral traditions. For preventative, promotive, and curative purposes, medicinal herbs are used by millions of homes, especially in rural regions. Both the conventional medical model and folk remedies rely on therapeutic preparations made from higher plants. Thousands of India's cultural groups make use of India's tens of thousands of plant species.

Native Americans have described the benefits of mamsarohini in treating muscular dystrophy, leucorrhoea, and menorrhagia. In 2 instances of DMD2, the CPK levels were successfully lowered by the bark decoction Mamsarohini (50 ml twice day). The wound healing capabilities of stem bark are described. *Soymida febrifuga* Roxb. has not been studied for its phytochemical properties as of yet.

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Material and Methods

Collection

For procuring best quality of the drug it is necessary to collect roots from the natural habitat, after plant maturity, and in proper season. The drug was collected as per guidelines of collection.

Organoleptic characters:

The Organoleptic characters of Ayurvedic drug is very important and gives the general idea regarding the genuinity of the sample. This also corresponds to *Panchagnanendriya pariksha* of Ayurveda. The characters like color, odour, taste and consistency of the sample were noted. Color (Rupa) Odour (Gandha) Taste (Rasa) Texture (Sparsha)

Physicochemical parameters

Physico chemical parameters such as determination of loss on drying, determination of total ash, determination of acid insoluble ash, determination of extractive value, alcohol soluble extractive value, and water soluble extractive and pH values are recorded as per standard.

Qualitative test¹⁰

Forecasting using numbers

Tannin content was measured quantitatively in the test substance.

An Examination of Chromatography^{11, 12, 13,}

CONSIDERATION BY TLC

Separation and semiquantitative analysis of natural chemicals have been common applications of thin layer chromatography. The phytochemical composition of herbal medicines may also be assessed by TLC. Using a fingerprinting profile and a reference standard chemical, a single medication may be identified using a TLC monograph.

HPTLC Analysis

High performance thin layer chromatography (HPTLC) is a sophisticated and automated version of TLC.

When it comes to determining whether or not botanical materials are of high quality, H.P.T.L.C. is a useful instrument. It enables rapid and inexpensive examination of a wide range of chemicals. More samples may be analyzed in a single run, cutting down on analysis time significantly. HPTLC allows for the same study to be evaluated using multiple wavelengths of light, giving a more comprehensive picture of the plant than is usually seen with more narrowly focused investigations. There are various benefits to using HPTLC layers for thin-layer chromatographic separation. Discussion and Results

Organs of Taste and Smell:

S. febrifuga's organoleptic features. An analysis of powdered root bark was performed, and the results are shown in Table No. 1.

Chemical and physical constants:

Several physicochemical analyses, including those for moisture content, ash value, acid insoluble extracts, and pH, were performed on powdered *Soymida febrifuga* root bark. Table No. 2 displays the observed findings.

Qualitative chemistry tests for first results:

Alkaloids, phenols, flavanoids, carbohydrate saponin, tannins, cyanogenic glycosides, etc. were among the

many phytoconstituents found in the root bark sample analyzed qualitatively. Table 3 displays the outcomes that were really seen. Forecasting using numbers The powdered root bark of *Soymida febrifuga* was analyzed for its tannin content, and the findings are shown in table no. 4.

HPTLC

N-Butanol, acetic acid, and water (4:1:5) constitute the solvent system

Sample: Chloroform extract of root bark

Detection: Long UV 366 nm, Short UV 254 nm **Spray reagent :** Vaniline Sulphuric acid spray reagent.

Chromatographic techniques were carried out on mentioned in materials & methods section. Solvent system which were designed for TLC i.e. -N- Butanol:water: Acetic acid (4:1:5) was used for HPTLC studies. The results are tabulated as under. Table no.-5. The results for all the physicochemical parameters are within the prescribed limit. It means that quality of the drug is up to the standard.

As describe in analytical study, the test drug give the positive test for the presence of alkaloids, phenols, flavanoids, carbohydrate, saponin, tannins, cynogenic glycosides.

Quantitative estimation of bark powder shows presence of 9.44% w/w tannin.

HPTLC study shows that all the spots are of same R_f values when scanned at two different wavelengths as 254nm (short U.V.) & 366nm (long U.V.)

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