

PRELIMINARY PHYTOCHEMICAL EVALUATION OF SYZYGIUM CUMINI (L.) SKEELS LEAVES

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Abstract

Jamun, also known as Syzygium cumini (L.) Skeels (Family: Myricaceae), is a popularly used medicinal herb in Ayurveda. Physical-chemical analyses revealed total ash to be 3.1%, acid-insoluble ash to be 0.7%, extractive values to be 10.96% for alcohol and 12.32% for water. Sugar, lipid, glycoside, saponins, phenols, flavonoids, tannins, tri-terpenoids, and steroids were all found in the samples after phytochemical examination. The investigation creates a report on physicochemical parameters that could be helpful for the plant's authenticity and identification.

Key Words: Jamun leaf, phytochemical, *Syzygium cumini*, Standardisation.

Introduction

Other names for *Syzygium cumini* (L.) SKEELS include *Eugenia jambolana* LAM, *Calyptanthus jambolana* MOON, *Syzygium jambolana* DC, and *Syzygium jambolanum* DC. *S. cumini*, sometimes referred to as jambolan, Java plum, black plum, or jamun, is a tropical evergreen tree in the Myrtaceae genus of flowering plants. It is claimed to be present all over India, with the exception of desert regions, in both wild and domesticated forms. India and Indonesia are where the evergreen Jamun plant was first discovered (1,2). Because there are so many Jamun trees across the Indian subcontinent, it is known as the Jambudweep in Indian mythology. For its many uses, the plant is traditionally used in its entirety. Despite its

ethnopharmacological usage, leaves have various therapeutically beneficial uses due to the presence of numerous phyto-constituents nowadays (3–4). (Table 1).

The leaves also lessen radiation-induced DNA damage and are used to treat leucorrhoea, stomachaches, fevers, dermatopathy, constipation, and blood discharges in the stool. Pharmacognostic and physicochemical analysis of medicinal plants is necessary for identification, adulteration detection, and quality evaluation, all of which are directly related to efficacy. To demonstrate why medicinal plants are acceptable in the present period, their quality assessment is of utmost importance. The absence of strict quality control profiles for herbal products is one of the biggest issues the herbal business is now dealing with (5).

In the present investigation an attempt have been made to screen phytochemicals present in the leaves.

Materials and Methods

Plant material

Leaves of *Syzygium cumini* (L.) SKEELS was collected from the plant growing on the campus of Regional Ayurveda Institute for Fundamental Research, Pune, Maharashtra, India. Identification and authentication of plant material Plant

material was identified and authenticated with the help of the Flora (6).

Powder preparation

Shade dried leaves were made into powder using grinding mill; passed through #60 sieve and kept in an airtight container for further analysis (7).

Preliminary phytochemical screening

Alcoholic and aqueous extract of *S. cumini* were prepared by cold maceration method. Coarsely powdered air-dried material 5g was accurately weighed and placed in a glass stoppered conical flask. It was macerated with 100 ml of the solvent specified for 6 hr, shaken frequently and then allowed to stand for 18 hr. Filtered rapidly taking care not to lose any solvent, filtrate was transferred to a tared flat bottomed dish and evaporated to dryness on a digital

water bath at 60° C. Both the extracts were subjected to phytochemical screening for qualitative analysis for the presence and absence of secondary metabolites (8,9).

Determination of physicochemical parameters

Physicochemical parameters namely, loss on drying, ash value, acid insoluble ash, water-soluble extractive, alcohol soluble extractive were performed as per the standard protocol of Ayurvedic pharmacopeia of India (10).

Results and Discussion

Preliminary phytochemical screening of extract:

Preliminary phytochemical screening depicts the presence phytoconstituents as depicted in Table: 1.

Table 1 - Preliminary Phytochemical screening			
S.No	Phytoconstituents	Aqueous extract	Alcoholic extract
1	Sugar	+	+
2	Protein	-	-
3	Lipid	+	+
4	Alkaloids	-	-
5	Glycoside	+	+
6	Phenolics	++	++
7	Flavonoids	++	++
8	Tannins	++	++
9	Saponin	-	-
10	Volatile oils	+	+
11	Triterpenoids	+	+
12	Steroids	+	+

Determination of physicochemical parameters

Results obtained from

physicochemical contents such as loss on drying, total ash, acid insoluble ash, water, and alcohol soluble extracts are depicted in Table 2.

Table 2 - Physico-chemical parameter		
S.No	Parameter	Result
1	Loss on drying	5.26%
2	Total Ash	Should not be more than 3.1 %
3	Acid insoluble ash	Should not be more than 0.7 %
4	Water soluble extractive	Should not be less than 12.32%
5	Alcohol soluble extractive	Should not be less than 10.96%
The data depicted in table is mean of three sample.		

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