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COMPARATIVE PHARMACOGNOSTICAL EVALUATION OF DIFFERENT MARKET SAMPLE OF PATALA (STEREOSPERMUM SUAVEOLENS ROX.DC.)

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ABSTRACT

Traditional herbal medicine becomes popular than conventional medicine hence demand of medicinal plants increased. To get better result in the clinical practice it is important the drug is authentic, pure, and easily available. "*Patala" (Stereospermum suaveolens Rox. DC.)* Is a drug of high demand, in the pharmaceutical industry, the availability of authentic drug is decreased. This Decline in authenticity is due to adulteration and substitution. "Sufficient literature and documents are available regarding the morphology of Patala. In the present there is market dependency for the procurement of Patala is in crude form. After a drug dry up, it is a tedious work to identify it. In the market available genuine drug is either substituted or sub standard and adulterated. It is difficult to find out genuine drug among them without the help of modern scientific methods.

INTRODUCTION

Stereospermum suaveolens (Roxb.) DC. It is commonly called as padal' in Hindi whereas Patala' in Sanskrit and belongs to Bignoniaceae' family. It is a large sized indigenous tree and distributed in sub Himalayan tract, central parts of India. Rajasthan, Chota Nagpur, Deccan plateau and Peninsula, in Tamilnadu. Further in Assam, Meghalaya and in moist deciduous forest.

MATERIAL AND METHOD

Literary study was done by information compiled from different relevant literature of Ayurveda and other relevant literatures of modern science.

Literature was collected from

- Library of State Ayurvedic College and Hospital, Lucknow.
- Library of CSIR-NBRI (National Botanical Research Institute), Lucknow.
- Search engines e.g. Google scholar, Scopus etc. andRelevant medical journal

➢ **Official (Genuine) Sample collection**

- Official (Genuine) drug of Patala root bark (Stereospermum suaveolens Rox. DC.) was taken from ***Herbal Garden of Lalit hari Rajkiya ayurvedic college Pilibhit, (U.P.)*** for comparative study and quality standardization.
- After collection Genuine Sample was washed with tap water, cut in pieces and dried in shade. sample Packed in polybags and labialized.

- **Market sample collection**
- Different market samples sold in markets on the name of Patala were collected from market which are Patna, Delhi and Dehradun.
- 500g crude *Patala* of each market sample packed in polybags and labialized.

- **Sample preparation**
- The official Patala and its market sample were powdered with mechanical grinder and preserved in an air-tight glass container.
- After preservation of each sample were symbolized as –

Genuine – GEN, Patna-PAT, Dehradun- DEH and Delhi - DEL.

Laboratory work

It was conducted in laboratory of State Ayurvedic College, Lucknow and CSIR-NBRI, Lucknow.

Pharmacognostical study of drug

Pharmacognostical study was carried out by standard methods as per Ayurvedic Pharmacopoeia of India (API).

- Organoleptic study,

- Microscopic study,
- Foreign matter,
- Moisture content,
- Ash value,
- Acid insoluble ash value,
- water soluble ash value,
- Extractive value
- Qualitative Phytochemical analysis,

Organoleptic characters of crude samples of patala

Parameters	Sample-GEN	Sample-PAT	Sample-DEH	Sample-DEL
Texture	Course	Fine to coarse	Fine to coarse	Fine to coarse
Colour	Greyish brown	Dark brown	Brown	Dark brown
Odour	Characterstic	Characterstic	No characetrstic	Characeterstic
Taste	Slightly astrigent	Astringent	Bitter	No taste
Touch	Rough and smooth	Rough and smooth	Smooth	Smooth

A-Genuine sample.

B-Dehradun sample.

C-Patna sample.

D-Delhi sample.

A--**Dehradun** **B-Genuine**

C-Patna **D-Delhi Sample**

RESULT

Foreign matter of all Patala sample

Sample	Foreign Matter	Standard as per API
Sample-GEN	Absent	Not more than 2%
Sample-PAT	1.2%	Not more than 2%
Sample-DEH	1.6%	Not more than 2%
Sample-DEL	1.4%	Not more than 2%

Moisture content

S. No.	Sample	Moisture content in %
1	GEN	13.5
2	DEH	10.3
3	PAT	9.9
4	DEL	9.1

Ash value

Sample	Total Ash [%w/w]	Standard as per API
GEN	5.75%	Not more than 8%,
PAT	7.3%	
DEH	12.7%	
DEL	15.3%	

Extractive value

Sample	Alcohol soluble extractives	Standard as per API
GEN	16%	Not less than 12.5%
DEH	13.4%	Not less than 12.5%
PAT	14.5%	Not less than 12.5%
DEL	13%	Not less than 12.5%

Phytochemical screening

Name of tests	Sample – GEN	Sample DEH	Sample PAT	Sample DEL
Flavonoids	++	++	+	+
Saponins	+	+	_	+
Tannins	++	_	+	_
Glycosides	+	+	+	_
Steroids	_	_	+	_
Terpenoids	++	_	++	_
Alkaloid (Hegar & meyar)	++	+	+	+
Reducing sugar	+	+	+	+

CONCLUSION

Ash Values are used to determine quality and purity of crude drug. It indicates presence of Various impurities like Carbonate, Oxalate and Silicate. Total ash value found in different samples in increasing order, ***GEN <PAT <DEH <DEL***. Minimum total ash value in GENsample is5.75% and maximum total ash value was found in the market sample of Delhi 15.3%. Total ash value of GEN, PAT, sample were within the limit of API.

Estimation of Extractive Values determines the amounts of active Constituents.

Limit of Alcohol soluble extractive value in API should not be less than 12.5%. Alcohol soluble extractive value content found in different samples in increasing order, ***GEN <PAT<DEH <DEL.*** in a given amount of plant material when extracted with a particular solvent.

Limit of Water soluble extractive value in API should not be less than 25%. Water soluble extractive value content found in different samples in increasing order, ***GEN<PAT <DEH<DEL***. Water soluble extractive value of genuine sample (25.65%) was within the limit of API.

Phytochemical screening-Identification of phytochemicals indicates pharmacological active metabolites present in the plant.

Phytochemical screening of water extract the official/genuine sample revealed the presence of **Flavonoids, Glycosides, Steroids, Terpenoids, Reducing Sugars and Tannins.**

On the basis of microscopic character, pharmacognosy and phytochemicals Delhi and Dehradun sample slightly similar with official/genuine sample. That means Delhi and Dehradun sample was mixer of two different drugs one was Patala and second was other adulterate drug.

Hence, standardization and quality specifications of herbal drug market samples are a matter of concern.

Condition of crude herbal drug market is very poor. Present time needs attention and promotion of medicinal plant cultivation, for authentic and quality raw material. That is necessary for its long term stability and prevention of adulteration and substitution.

This study is a time bound short term and has its own limitations like budget, time and availability of all kind of resources.

Hence it is humbly suggested that an extended Pharmacogonostical evaluation of market samples from all the parts of India. Invasive techniques like DNA fingerprinting etc. should be involved to trace-out adulterant in order to reach out a more precise decision.

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