



ISSN Print: 2394-7500
ISSN Online: 2394-5869
Impact Factor: 5.2
IJAR 2018; 4(7): 386-388
www.allresearchjournal.com
Received: 19-05-2018
Accepted: 20-06-2018

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Physico-chemical and Phyto-chemical standardization of Pind Taila

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Abstract

Standardization of drug means confirmation of its identity and determination of its quality and purity and detection of nature of adulterant by various parameters like morphological, microscopical, physical, chemical and biological observations. The present study involved standardization of Pind Taila. The present standardization study reveals organoleptic characteristics, phyto-chemical analysis and physico-chemical analysis. The application of present study may play significant role in deciding the identity, purity, quality of the Pind Taila formulation and also for fixing standards for this Ayurvedic formulation.

Keywords: Pind Taila, AYUSH, Physico-chemical, Phyto-chemical, quality control

Introduction

Ayurveda is the most primary Indian systems of medicines. In order to market these products on a commercial basis it is important to maintain quality controls and standardize them based on international guidelines. For these reasons we need to refer to the guidelines and methods in Ayurvedic pharmacopoeia of India, Ayurvedic formulary of India etc.

In the present study, The Ayurvedic formulation Pind Taila was prepared as per the guidelines of department of AYUSH. The Department is responsible for designing, formulating and implementing policy for promoting and propagating the Indian systems of Medicines.

Pind Taila is a classical ayurvedic topical medicine which helps in relieving inflammation as in *Vatta rakta* (Gout). Pind Taila is a medicated oil used in Ayurvedic system of Medicine for Vaatharakta. The ingredients used in Pind Taila are *Rubia cordifolia* (useful for skin treatment such as acne, burns or eczema), *Hemidesmus indicus* (diuretic and a blood purifier), *Risina flena* (highly effective in treatment of burns), *Glycyrrhiza glabra* (heals respiratory tract disorders) and wax. Castor oil was used as the base.

The standardization was carried out using various pharmacognostic tools like acid value determination and saponification value determination, phytochemical analysis, macroscopic and microscopic analysis etc.

Materials and methods

Preparation of Pind Taila

All the ingredients were crushed. Required quantity of water was added and kept for soaking for 1 hour. It was then boiled and reduced to half volume. The mixture was filtered with muslin cloth. Castor oil (500 ml) was added into extract. Again it was boiled till water gets evaporated.

Test for completion of procedure: Take a cotton plug and dip it in formulation, if it burns properly without making cracking noise then formulation is complete.

Storage and preservation

It was preserved in dried, airtight, fungus free clean glass or china clay container.

Organoleptic characteristics

The finished product was analyzed for its organoleptic properties like Color, Odor and texture.

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Microscopic Analysis

The microscopic Character of each ingredient and final product were carried out. Permanent slides were prepared and stained with Safronin (1%) + Glycerin (Selvakumar *et al.*, 2010) [9].

Physico-chemical analysis

Acid value, Peroxide value and saponification value was determined (Trease and Evans Wc., 1989) [11].

Phyto-chemical Analysis

Preliminary tests were carried out on methanolic extract for the presence / absence of phyto-constituents like Cardiac glycosides, Phlobatanninx, flavanoids and tannins (Sazada *et al.*, 2009) [8].

Result and Discussion

Organoleptic parameters revealed that brownish Greyish in color, odorless with oily texture (Table 1).

Microscopic analysis of sample showed the presence of identifying diagnostic characters, which are not overlapping.

It shows presence of xylem thickening, Cork cells, xylem vessels, sclerides (Fig. 1).

Phytochemical analysis showed presence of glycosides, Phlobatanninx, flavanoids and tannins (Table 2).

Acid value (Table 3) showed the increase in the amount of free fatty acid in a sample of oil indicates hydrolysis of triglycerides which can be occurred by action of lipase enzyme & it is an indicator that the process had been carried out at high temperature & relative humidity. Saponification value (Table 4) concerning the character of the fatty acids of the fat- the longer the carbon chain, the less acid is liberated per gram of fat hydrolyzed. Peroxide value for oil was found to be 9.92 milliequivalents /kg, which was within the range.

Table 1: Organoleptic Characteristics Pind Taila

Organoleptic characteristics	Formulation
Color	Brown
Texture	Oily
Odor	Odorless

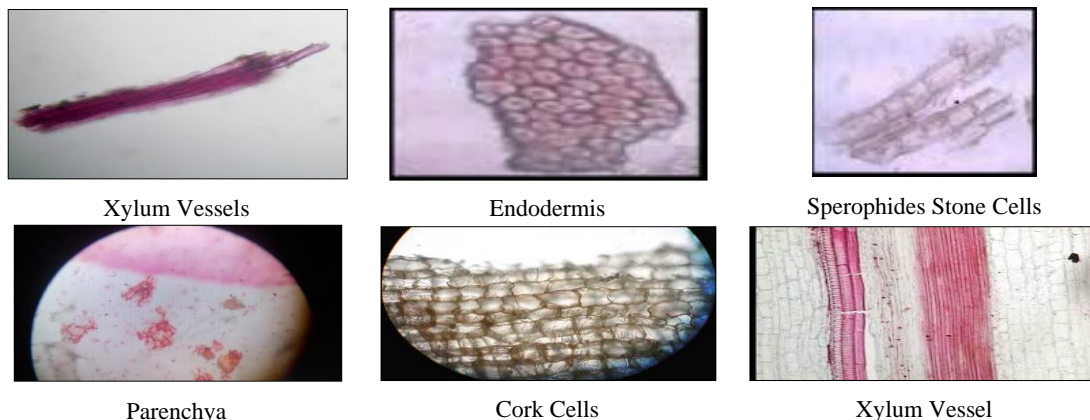


Fig 1: Microscopic Analysis of Pind Taila

Table 2: Phyto-Chemical Test

No.	Tests	Results				
		1	2	3	4	5
1.	Cardiac glycosides.	P	P	A	P	P
2.	Phlobatanninx	P	A	A	A	P
3.	Flavonoids.	P	P	P	P	P
4.	Tannins	P	P	A	P	P

Key: P –Present, A- Absent

1. Manjishshtha
2. Sariva
3. Ral
4. Yahthimadh
5. Pind Taila

Table 3: Acid Value

Name Of Formulation	B.R (A) For Sample	Weight Taken	Result (%))
Pind Taila	1.3 ml	1 gm	7.28 %

Table 4: Saponification Value

Name Of Formulation	B.R (A) For Sample	Result (%))
Pind Tail	38.5 ml	78.37

Conclusion

Standardization is maintaining the same physicochemical properties and quality of a product or formulation throughout the process of preparation and utilization leading

to identical therapeutic efficacy an all batches. The standardization of Pind Taila was carried out using various pharmacognostic tools. Quality control tests were done to analyse the raw material as well as formulation. Powder

microscopy for raw materials was performed during and later-on in the process of preparation of ASU formulation. Tests like phyto-chemical test and physico-chemical tests were performed. The same protocol may be applied for as a regular development of drug, its quality control and standardization for polyherbal formulations. Further studies are required to determine its mechanism of action and *in vivo* studies.

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