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Quality evaluation of polyherbal formulation: Ark Taila

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Abstract
Ayurveda is considered by many scholars to be the oldest healing science. In Sanskrit ayurveda means the science of life. It stems from the ancient Vedic culture and was taught for many thousands of years in an oral tradition from accomplished masters to their disciples. Ayurveda places great emphasis on prevention and encourages the maintenance of health through close attention to one's life right thinking, diet, lifestyle and the use of herbs. In the present study efforts have been taken to make *Ark taila* by using proper raw materials with the help of ancient SOP. Quality parameters like organoleptic, phyto-chemical, physico-chemical analysis was carried out for quality testing and standardization of raw material as well as finish products.

Keywords: ark tail, ayush, physico-chemical, phyto-chemical, quality control

Introduction
AYUSH signifies a combination of alternative system of Medicine, which was earlier known as Indian System of Medicine. AYUSH includes Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homeopathy. The objective of AYUSH is to promote medical pluralism and to introduce strategies for mainstreaming the indigenous systems of medicine. In the last few decades there has been an exponential growth in the field of herbal medicine. It is getting popularized in developing as well as in developed countries owing to its natural origin and lesser side effect.
Ayurvedic formulations are predominantly composed of several herbal materials and also in combination with minerals and animal materials. Plants are very complex in their composition and their therapeutic activity depends on their chemical constituents, which vary according to their age, geographical location and harvesting processes. Raw materials (plants) used in the drugs during growth, collection, storage and transport are exposed to a multitude of environmental influence which are responsible for contamination, these contaminants may be of non-biological origin viz. heavy metals, pesticides etc or of biological origin like bacteria and fungi. Due to the health hazard measures and to prevent toxicity of material, it is essential to ascertain that the formulation or raw materials are free from harmful contaminants.
Thus, the initiative was taken to standardize ayurvedic formulation *Arka Taila or Ark tail*a which is widely used for various purposes. *Arka Taila or Ark taila* is made from whole lot of herbs. Arka is one of the herb mentioned in the ancient script of Ayurveda. This decoction is made from the leaves of *calotropis procera* and Haridra pulp i.e. *Curcuma longa* pieces.
The tailam is named after the main ingredient (arka patra swaras) i.e. *calotropis procera. Calotropis procera* is also known as milkweeds because of latex they produce. It is usually found in Southern Asia and North Africa. The other ingredient *curcuma longa* which is also known as curcuma domestica valeton which is usually found in forest of South and South East Asia. In fact in most part of India both the ingredients have their own effect i.e. *Calotropis p.* is useful to have mercury like effect on human body because of its latex and *curcuma longa* is used in remedy for stomach and liver ailment. *Arka Taila* is composition of this two herbs and sesame oil which act as vehicle for this medicine.
Arka is liquid preparation obtained by distillation of herbs soaked in water.
It is ayurvedic oil which is useful in eczema, itching, scabies, otamycosis (karnasrava) also in healing of crack heels. It is non-toxic ayurvedic product and thus can be used for healing purpose.

Materials and Methods
Preparation of Ark Taila
1. Clean and dry the raw material properly.
2. Weigh each one of them separately and soak in water for overnight extraction.
3. The following morning, blend the leaves of *Calotropis procera* (100gm) and filter it using muslin cloth to obtain the juice (arka).
4. Take the juice (60ml) + pieces of *Curcuma longa* (70gm) + 1000ml of water in a clean stainless steel vessel and heat it on low flame.
5. Pour sesame oil in the above decoction after 2 hours and stir thoroughly.
6. Heat for 4 hours with constant stirring, maintain the temp between 50C and 90C during the first hour of heating. Stop heating and allow to stand overnight.
7. Filter it with the help of muslin cloth and allow to cool.
8. Confirmation test – dip cotton in the prepared *arka Taila* and then held it on burning flame, no crackling noise indicates the completion of process.

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.

Microscopic Analysis
The microscopic Character of each ingredient and final product were carried out (Anonymous, 1992). 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 (Iyengar, 1995; 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 (Table 2, Fig. 1).
Phytochemical analysis showed presence of glycosides, Phlobatanninx, flavanoids and tannins (Table 3).
Acid value (Table 4) 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 5) 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 8.0 milliequivalents /kg, which was within the range.

Table 1: Organoleptic Characteristics Ark Taila

Organoleptic characteristics	Formulation
Color	Dark green
Texture	Bitter liquid
Odor	Odorless

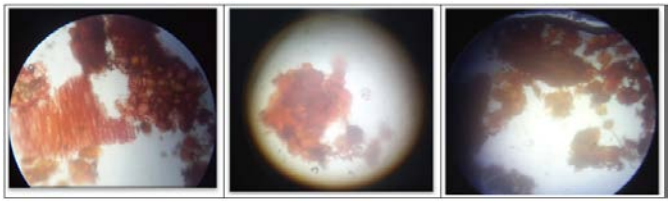

Fig 1: Microscopic Analysis of Ark Taila

Table 2: Powdered characteristic of raw materials and Formulation

Curcuma longa	*Calotropis Procera*	*Formulation*
Parenchyma cells	Parenchymatous cell	Scattered vascular bundles
Scattered vascular bundles	Intracellular spaces	Phloem
Definite endodermis	Xylem	Tracheids
Starch grains	Phloem	Xylem
Cubical cells	Tracheids	Cubical cells

Table 3: Phyto-Chemical Test

Sr. No.	Tests	Result		
		Curcuma longa	*Calotropis Procera*	*Ark Taila*
1.	Cardiac glycosides.	Present	Present	Present
2.	Flavonoids	Present	Present	Absent
3.	Phlobatanninx	Absent	Absent	Absent
4.	Tannins	Absent	Absent	Absent
5.	Steroid	Present	Absent	Present
6.	Terpenoides	Present	Absent	Present
7.	Saponin	Present	Present	Present

Table 4: Acid Value

Name of Formulation	B.R (A) For Sample	Weight Taken	Result (%)
Pind Taila	7.5 ml	1 gm	42.02%

Table 5: Saponification Value

Name of Formulation	B.R (A) For Sample	Result (%)
Pind Tail	27 ml	78.37

Conclusion
Standardization of ASU formulation (Arka Taila) was successfully carried various parameters like organoleptic test, phytochemical constituent, determination of saponification value, acid value and peroxide value, which helped in justifying the quality of formulation. Standardization of formulation helps to meet the desired quality of product. As arka Taila is useful in treating eczema, itching, scabies etc. The data evolved from the study can be helpful in understanding the importance of standardization which will not lead to scarcity of data.

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