



## Standardization of Ankola Oil

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ABSTRACT

*Alangium salvifolium* is a deciduous shrub belongs to family Alangiaceae with a long history of traditional medicinal uses in many countries, especially in India, China and Phillipines. The herb exhibits a broad range of therapeutic effects as an effective natural remedy for wound, rheumatism, leprosy, hemorrhoid, burning sensation, constipation and antidote for several poisons. Its various parts are used for several diseases among them one of it is oil extracted from seeds, used for wound healing purpose. A wide range of chemical compounds including proteins, steroids and saponins have been isolated from the species. Its extract have been found to possess various pharmacological activities. In this study we are concerned for the standardization of this medicated oil for its efficacy and quality perspectives. In this respect its organoleptic characters, physico-chemical properties, H1 NMR, C13 NMR, TLC and phytochemical screening has been done.

**KEYWORDS**

Organoleptic characters, Phytochemical screening, Wound healing.

**Introduction:**

Now a day's world population moves towards herbal remedies for treatment of various ailments. Plants have the ability to synthesize a wide variety of chemical compounds that are used to perform important biological functions. In India, medicinal plants are widely used by people as folk remedies and pharmaceutical preparations. *Alangium salvifolium* is the most versatile medicinal plants having a wide spectrum of biological activity. *Alangium salviifolium* showed potent anti-diabetic, anticancer, diuretic, anti-inflammatory, antimicrobial, laxative, astringent, emollient, anthelmintic and antiepileptic activities. The plant was also reported for its anti fungal activity, anti microbial activity, cardiac activity and anti fertility activity<sup>1-4</sup> The basic lacuna in Ayurvedic and herbal formulations is the inappropriate data and methods regarding quality control and standardization techniques. To minimise batch variation and to add scientific validity to herbal formulations, it is necessary that, like all other synthetic drugs herbal drugs should also be analyzed and proper quality control techniques should be developed. Along with physiochemical assessment other techniques including TLC have been applied here to know the compound in the oil<sup>5</sup>.

Ankola is described in Ayurvedic literatures for its use as an antidote for several poisons. So in this study we are standardizing the oil by various means like saponification value, iodine value, peroxide value, acid value, H<sup>1</sup> NMR, C<sup>13</sup> NMR, phytochemical screening & TLC plate study.

**Materials & Methods:**

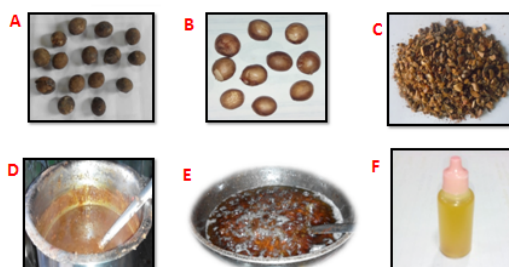
**1. Collection and Identification of Plant Material:**

Fresh fruit was collected from Ramana place near Varanasi. Botanical identification of fruit was confirmed by Prof. K. N. Dwivedi, Department of Dravyaguna, Faculty of Ayurveda, IMS, BHU, Varanasi.

**2. Sample Preparation:**

Fresh fruit was crushed and seed removed from it. Then coarse powder of seed kernels were prepared and its decoction was prepared using four times water and when one fourth remained then it was filtered. Then its four time sesame oil was taken and in it we add the decoction firstly prepared and cook it in medium flame. Stop heating when the kalka breaks down into pieces on attempting to form a varti, and at the appearance of froth over the oil<sup>6</sup>. Expose the varti

to flame and confirm the absence of crackling sound indicating absence of moisture. Filter while hot (about 80° C) through a muslin cloth and allow to cool. Pack it in tightly closed containers to protect from light and moisture.



**Fig. 1: Ankola oil preparation:** A) Fruit of Ankola, B)Seed of Ankola, C)Coarse powder of seed, D)Decoction of seed, E)Oil prepared, F)Ankola oil

Other relevant chemicals and instruments for phytochemical screening, H<sup>1</sup> NMR, C<sup>13</sup> NMR, TLC were used accordingly.

**Table 1: Organoleptic Characters of Ankola taila**

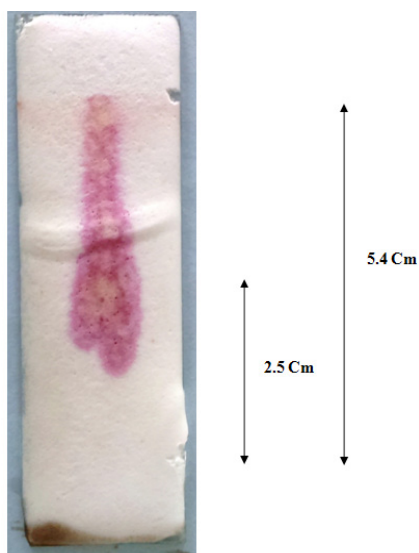
S. No.	Parameters	Ankola taila
1.	Color	Light yellow
2.	Odour	Characteristic
3.	Taste	Bitter
4.	Consistency	Liquid

**Table 2: Physico-chemical parameters of Ankola taila**

S. No.	Parameters	Result
1.	Peroxide value	5.98
2.	Acid value	33.06
3.	Saponification value	148.08
4.	Iodine value	58.31

**Table 3: Phytochemical screening of Ankola taila**

S.No.	Chemical Test	Oil formulation
1.	Carbohydrate Test	-
2.	Protein Test	+
3.	Steroids Test	+
4.	Amino Acid	-
5.	Glycosides Test (Saponin)	+
6.	Alkaloids Test	-
7.	Tannins and Phenolic Compounds Test	-
8.	Flavonoids Test	-
9.	Mucilage Test	-

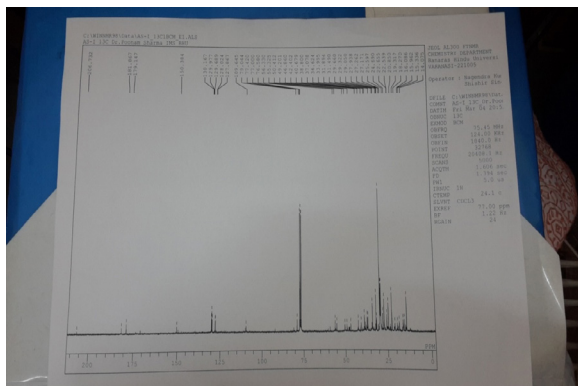


**Fig. 2 : TLC plate of Ankola oil then below it about the solvent system and its ratio. and Rf value = 2.5/5.4 = 0.46**

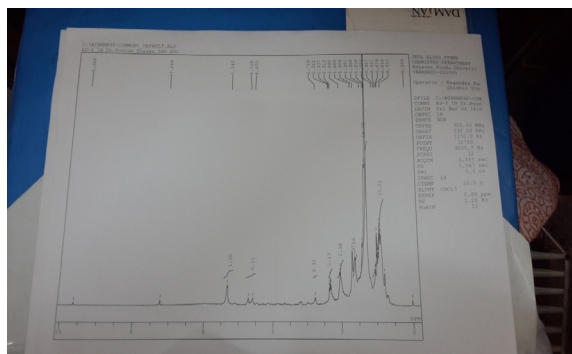
**Solvent System: Chloroform: Methanol: Water Thin Layer Chromatography**

Applying 10 µl of oil on TLC plate which is used as stationary phase. Develop the plate to a distance of 8 cm using Chloroform: Methanol: Water (7:4:1) as mobile phase which was already kept for few hours. After development allow the plate to dry in air. Then conc. H<sub>2</sub>SO<sub>4</sub> sprayed over it.

**13C NMR & 1H NMR**



**1 H NMR of Ankola oil :**



**Results and Discussion**

The formulated ayurvedic oil was evaluated for organoleptic characters and physicochemical parameters (Table 1&2). Phytochemical screening was done which leads to the presence of protein, steroids and saponin. NMR study shows the presence of aliphatic compounds in oil. Also, TLC was prepared and Rf value were reported in present communication. TLC plate shows major spot at 2.5 cm of pinkish yellow colour.

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**CONFLICT OF INTERESTS** The authors declare that there is no conflict of interests regarding the publication of this research article

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