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RESEARCH ARTICLE

ANALYTICAL STUDY OF ERANDADI TAILA: AN AYUREVDIC FORMULATION

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Abstract

Erandadi Taila is a classical Ayurvedic medicated oil indicated in the management of Karnanada (Tinnitus) for Abhyanga, Nasya and Karnapoorana. Karnanada is a Vata predominant disorder of the ear as described in Ayurvedic classics. Taila kalpana is considered highly effective in pacifying aggravated Vata doṣha due to its Snigdha and Ushna properties. Analytical evaluation of formulation is essential to ensure quality, purity and therapeutic consistency. The present study aims to carry out an analytical assessment of Erandadi Taila with reference to organoleptic, physiochemical and pharmaceutical parameters, HPTLC profile, thereby contributing to standardization of the formulation and validating its suitability for clinical application.

Introduction:-

Karnanada is characterized by different types of sounds (Vividh Shabda) perceived within the ear. [1] As described in Yog Ratnakar, these sounds may resemble those produced by instruments such as Bheri (cuttle drum sound),Mridanga (roaring sound),Shankha etc[2]. Erandadi Taila is mentioned in authoritative texts like Ashtanga Hridaya, as an effective formulation for Karnanada and Badhirya when used for procedures such as Abhyanga, Karnapooraṇa and Nasya [3]. The inherent properties of Taila—such as Snigdha, Guru, and Ushna [4] provide a pharmacological action which is contrast to the Ruksha, Laghu, Sheeta and Chala nature of Vata [5] effectively restoring physiological balance. Ayurveda places significant emphasis on Sneha kalpana, particularly Taila preparations, for the management of Vata-dominant disorders like Karnanada. Taila serves as an excellent carrier for active principles, allowing deeper tissue penetration and enhanced therapeutic action. For any formulation intended for clinical use, especially in sensitive therapeutic procedures like Nasya and Karnapoorana, standardization and quality assessment are essential. Analytical evaluation as per the Ayurvedic Pharmacopoeia of India (API) ensures the safety, purity, stability and reproducibility of the formulation. Hence, the present study has been undertaken to carry out an analytical evaluation of Erandadi Taila, with the objective of establishing its physicochemical standards and validating its suitability for therapeutic use in the management of Karnanada (Tinnitus).

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Material and Method:-

Collection of Raw Drugs:-

Raw drugs of Erandadi Taila were collected from the well-known dry herb seller Panna Lal Brij Lal, Haridwar.

Identification and Authentication:-

Raw drugs of Erandadi Taila were identified and authenticated by PG Department of Dravya Guna, Rishikul Campus, Haridwar, Uttarakhand. The final product Erandadi Taila was prepared in Anamika Pharmacy, Sidkul, Haridwar, Uttarakhand

Table 1: Pharmacological properties of Erandadi Taila.

DRUGS	LATIN NAME	FAMILY	PART USED	DOSHA KARMA	KARMA	PHARMACOLOGICAL ACTION
Eranda	Ricinus communis	Euphorbiaceae	Patra	Kapha**Vata shamak**	Naadi Daurblya nashak, Balya, Vata vyadhi nashak	Anti-Oxidant
Shigru	Moringa olifera	Moringaceae	Patra	**Vata**kapha **shamak**	Naadi Daurbalya nashak	Anti-Oxidant
Varuna	Crataeva nurvala	Capparidaceae	Patra	Kapha**Vata shamak**	Anulomaka	Anti-Oxidant, Neuroprotective
Moolaka	Raphanus sativus	Cruciferae	Patra	Tridhosha shamak	Vata anulomaka	Anti- Oxidant
Ashwgandha	Withania somnifera	Solanaceae	Moola	Kapha **Vatashamak**	Rasayana, Balaya , Naadi balya Anulomaka	Anti-Oxidant,Anti-anxiety,Anti-stress Immunomodulatory,Anti-depressant
Yastimadhu	Glycyrrhiza glabra	Leguminasae	Moola	Kapha**Vata shamak**	Balya, Naadi Baldaayak	Anti-Oxidant
Go Dugdha				**Vata**pitta shamak		
Tila taila	Sesamum indicum	Pedaliaceae	Beej, Tail	**Vata shamak**	Snehan,Balya, Vataroghara	Anti-oxidant

Fig.-1. Eranda

Fig.-2. Shigru

Fig.-3. Varuna

Fig.-4. Moolaka




Fig.-5. Yasthimadhu **Fig.-6. Ashwagandha** **Fig.-7. Tila Taila** **Fig.-8. Go-Dugdha**

Preparation of Erandadi Taila:-

Moorchita Tila Taila was taken as base oil. Fresh leaves of Eranda, Shigru, Varuna, Moolaka were taken, cleaned, crushed and expressed to obtain fresh Swarasa. Total quantity of swarasa obtained was 20 litres. Meanwhile 40 litre Go-Dugdha was kept ready. Dry & clean Yastimadhu moola and Ashwagandha moola were pulverized. The powders were triturated with sufficient water to prepare a kalka. In a clean vessel moorchita Tila Taila was taken & the prepared kalka was added to the oil & mixed thoroughly. Swarasa & Go-Dugdha were added gradually with constant stirring. The mixture was subjected to mild to moderate heating with continuous stirring to prevent charring at the bottom. The process of heating was continued until the complete evaporation of the aqueous medium. The siddhi lakshana of Madhyama paka were observed. (Madhyam Sarvakarmasu- Sharangdhara).[6] The oil was filtered two to three times through a clean muslin cloth to separate the residual kalka. The filtered oil was packed in air tight containers.





Final Product

Analytical Study:-

Erandadi Taila was tested at Multani Pharmaceutical limited, Khasra no.37, Bhagwanpur, Haridwar for a number of characteristics, including their organoleptic & physiochemical (table 2), heavy metal (table 3), and microbial limit count (table 4).

Table: 2 Organoleptic & Physiochemical parameters

Sr.no.	Test Parameter	Result	Method Reference
1.	Colour	Yellowish brown	API
2.	Appearance	Oily liquid	API
3.	Odour	Characteristics	API
4.	Taste	Characteristics	API
5.	Texture	Liquid	API
6.	Refractive index at 40^0c	1.4706	API
7.	Weight per ml	0.9165	API
8.	Acid value	1.18	API
9.	Peroxide value	1.51	API
10.	Saponification value	180.8	API
11.	Viscosity	12cps	API
12.	HPTLC	Complies	API

Table:3 Heavy Metals:

Sr.no.	Test Parameter	Result	Method Reference
1.	Lead (Pb)	0.253ppm	API
2.	Arsenic (As)	<0.50ppm	API
3.	Cadmium (Cd)	<0.01ppm	API
4.	Mercury (Hg)	<0.01ppm	API

Table:4 Microbiological Limit Test:

Sr.no.	Test Parameter	Result	Method Reference
1.	Total Bacterial count	20 cfu /g	API
2.	Total Yeast & mould count	<10 cfu /g	API
3.	Salmonella Species	Absent	API
4.	Pseudomonas aeruginosa	Absent	API
5.	E. Coli	Absent	API
6.	Staphylococcus aureus	Absent	API

Multani
ANALYTICAL DIVISION

MULTANI PHARMACEUTICALS LIMITED
(ANALYTICAL DIVISION)
(A GOVT. APPROVED TESTING LABORATORY)

TEST REPORT

Sample Common Name	: ERANDADI TAILA	**Report No.**	: MPLAD/AYF20250814008
Generic Name	: ERANDADI TAILA	**Report Dated**	: 29/08/2025

Batch / Lot No.	Pack Size	Mfg. Date	Exp. Date	Batch Size	Sample Quantity
NS	NS	NS	NS	NS	100ml

Sample Condition : NS **Sample reference** : NS

Sample Registration No. : AYF20250814008 **Location of Test (s) Performed :** Multani Pharmaceuticals Limited (Analytical Division)

Sample Manufactured By : NS **Mfg. License No. of Customer** : NS
Sample Supplied By : NS
Sample Submitted By : Dr. Poonam Rani
Address of Customer :

Sample received on : 14/08/2025 **Analysis started on** : 15/08/2025 **Analysis completed on** : 29/08/2025

Reference to Protocol : The Ayurvedic Pharmacopoeia of India. **Discipline** : Chemical and Biological
Description : A yellowish brown colour oil. **Group** : Ayush Products

RESULTS OF ANALYSIS

S.No.	Test Parameters	Results	Specifications	Method Reference
1	Colour	Yellowish brown		API
2	Odour	Characterstics		API
3	HPTLC	Complies		API
4	Taste	Characterstics		API
5	Appearance	oily liquid.		API
6	Texture	liquid.		API
7	Refractive Index at 40°C	1.4706		API
8	Weight per ml	0.9165		API
9	Acid Value	1.18		API
10	Peroxide Value	1.51		API
11	Saponification Value	180.8		API
12	Viscosity	12cps		API
13	Heavy Metals	-		
	Lead (Pb)	0.253ppm		API
	Arsenic (As)	Less than 0.50ppm		API

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Balwant Singh
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Authorised Signatory

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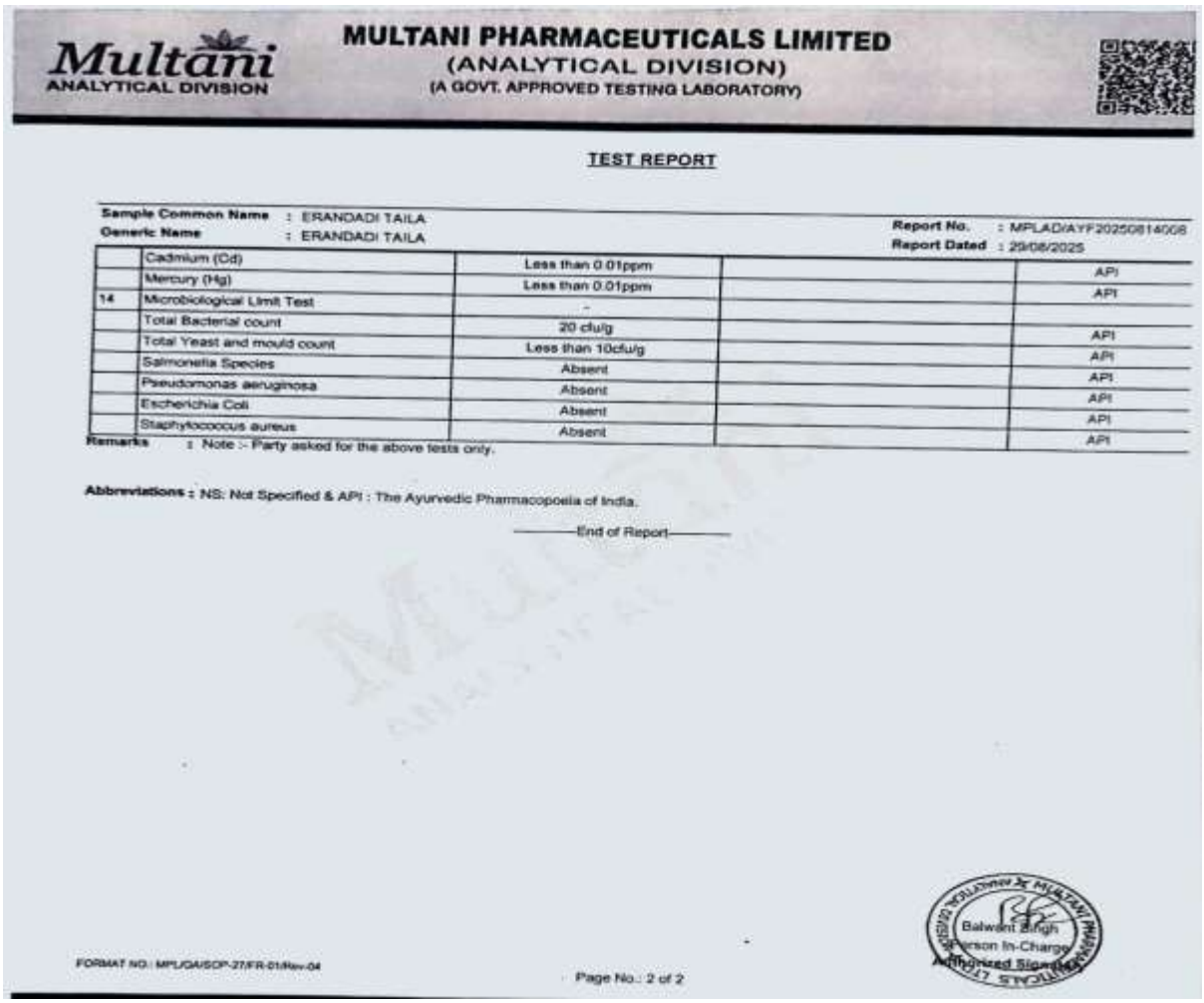

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ANALYTICAL DIVISION

MULTANI PHARMACEUTICALS LIMITED
(ANALYTICAL DIVISION)
(A GOVT. APPROVED TESTING LABORATORY)

TEST REPORT

Sample Common Name : ERANDADI TAILA
Generic Name : ERANDADI TAILA
Report No. : MPLAD/AYF/20250814008
Report Dated : 29/08/2025

	Cadmium (Cd)	Less than 0.01ppm		API
	Mercury (Hg)	Less than 0.01ppm		API
14	Microbiological Limit Test	-		
	Total Bacterial count	20 cfu/g		API
	Total Yeast and mould count	Less than 10cfu/g		API
	Salmonella Species	Absent		API
	Pseudomonas aeruginosa	Absent		API
	Escherichia Coli	Absent		API
	Staphylococcus aureus	Absent		API

Remarks : Note :- Party asked for the above tests only.

Abbreviations : NS: Not Specified & API : The Ayurvedic Pharmacopoeia of India.

End of Report

Balwant Singh
Person In-Charge
Authorized Signatory

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Result:-

The analytical evaluation of Erandadi Taila was carried out as per API standards, and the findings obtained from organoleptic, physicochemical, HPTLC, heavy metal, and microbiological analyses are summarized below.The organoleptic parameters (Table 2) revealed that the formulation possesses a yellowish-brown colour, characteristic odour and taste, and an oily liquid appearance. These findings indicate proper processing and preservation of the classical features of Taila Kalpana. The physicochemical parameters (Table 2) showed that the refractive index (1.4706) and specific gravity (0.9165) were within acceptable limits, confirming the purity and uniformity of the oil. The acid value (1.18) and peroxide value (1.51) were low, suggesting minimal hydrolytic and oxidative degradation, thereby indicating good stability and shelf life. The saponification value (180.8) reflects the presence of fatty acids essential for better absorption and therapeutic action. The viscosity (12 cps) indicates appropriate consistency, facilitating effective retention during therapeutic procedures like Karnapoorana. The HPTLC profile (Table 2) complied with API standards, confirming the presence and consistency of phytoconstituents across the formulation, thereby ensuring batch-to-batch uniformity. The heavy metal analysis (Table 3) demonstrated that lead (0.253 ppm) was within permissible limits, while arsenic, cadmium, and mercury were below detectable levels, indicating that the formulation is free from toxic contamination and safe for therapeutic use. The microbiological evaluation (Table 4) showed that the total bacterial count (20 cfu/g) and yeast & mould count (<10 cfu/g) were within acceptable limits. Moreover, the absence of pathogenic organisms such as Salmonella spp., E. coli, Pseudomonas aeruginosa, and Staphylococcus aureus confirms the microbiological safety of the formulation.

Discussion:-

Erandadi Taila is a classical Ayurvedic formulation indicated in diseases of the ear such as Karnanada (Tinnitus), Badhirya [7] etc. As Karnanada is described as a Vata-pradhana Vyadhi [8], the use of a Snigdha,Ushna and Vata-shamaka Taila is therapeutically appropriate. Snigdha and Ushna properties of this formulation help in pacifying aggravated Vata Dosha [9], which is primarily responsible for Karnanada. In the present analytical study, Erandadi Taila was evaluated according to the Ayurvedic Pharmacopoeia of India (API) standards. Organoleptic characters such as yellowish-brown colour, characteristic odour, oily liquid appearance and texture confirm the authenticity and classical nature of the formulation. Physicochemical parameters including refractive index and weight per ml were within acceptable limits, indicating proper processing and stability of the oil. Low acid value and peroxide value suggest minimal hydrolytic and oxidative degradation, reflecting good shelf stability and suitability for sensitive procedures like Nasya and Karnapoorana.

The saponification value suggests the presence of an optimal proportion of fatty acids, which enhances drug absorption and facilitates deeper penetration into tissues, correlating with the Ayurvedic concept of Sukshma and Vyavayi Guna of Taila [10]. The viscosity of the formulation ensures adequate contact time within the ear canal during Karnapoorana, thereby improving drug retention and therapeutic action. The formulation complied with HPTLC standards, confirming phytochemical consistency. Heavy metal analysis revealed levels well within permissible limits, and mercury and cadmium were below detectable limits, ensuring safety. Microbiological evaluation showed negligible microbial load with complete absence of pathogenic organisms, making the formulation safe for therapeutic use. From a pharmacological perspective, the ingredients of Erandadi Taila possess antioxidant, neuroprotective and adaptogenic properties, which may help in reducing oxidative stress and improving neural function in tinnitus. The analytical findings validate that Erandadi Taila is a safe, stable and standardized formulation, supporting its classical indication in the management of Karnanada (Tinnitus), where it helps pacify vitiated Vata, nourishes auditory structures and restores their normal function.

Summary and Conclusion:-

The present study was undertaken to analytically evaluate and standardize Erandadi Taila, a classical Ayurvedic formulation indicated in Karnanada (Tinnitus). The formulation was prepared using authenticated raw drugs and standard pharmaceutical procedures, followed by comprehensive analytical assessment. The findings revealed that the formulation possesses characteristic organoleptic features and stable physicochemical properties, indicating proper preparation and quality. The low acid and peroxide values suggest minimal degradation and good shelf stability. The HPTLC profile confirmed phytochemical consistency, ensuring reproducibility of therapeutic effects.The formulation was found to be safe, as heavy metals were within permissible limits and no pathogenic microorganisms were detected. The appropriate viscosity and fatty acid composition further support its suitability for procedures.

Additionally, the study highlights the importance of analytical standardization in Ayurvedic formulations, ensuring quality control, safety, and global acceptability. The results also provide a scientific basis for the classical use of Erandadi Taila in managing Vata-dominant disorders.Thus, Erandadi Taila can be considered a quality-assured, safe, and therapeutically reliable formulation, supporting its clinical use and future research in tinnitus management.The present analytical study concludes that Erandadi Taila, when evaluated as per the standards of the Ayurvedic Pharmacopoeia of India, fulfills all essential organoleptic, physicochemical, safety and microbiological parameters. The results confirm that the formulation is stable, safe, and of acceptable quality for therapeutic use. The physicochemical values indicate good stability and suitability for procedures like Karnapoorana and Nasya, while the absence of harmful heavy metals and pathogenic microorganisms ensures its safety for clinical application in Karnanada (Tinnitus).

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