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## Analytical study of Nirgundayadi taila an ayurvedic formulation

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### Abstract

‘In *Ayurveda*, medicated oils are used for mainly in diseases which are due to the *vata dosh dushti*. *Nirgundayadi taila* is an *ayurvedic* formulation mentioned in *Yog Ratnakar* in the management of *karnaroga*. The main contents of this *taila* are *Nirgundi*, *Jaati*, *Arka*, *Rasona*, *Bhringraj*, *Karpasa*, *Sahijana*, *Tulsi*, *Aadraka*, *Karvellaka*, *vatsnabha* and *tila taila*. It contains predominantly *vatakaphdoshshamak dravyas*. it is prepared by classical method of *taila paka Kalpana* according to the *ayurvedic* pharmacopoeia of india with standard operative procedure which is described for oil preparation.

**Aim:** To prepare and do the physio chemical study of finished product.

**Key words-** *Nirgundayadi*, *Taila*, *Karnanada*, *karnaroga*

### INTRODUCTION

*Ayurveda* is the integral and the most ancient form of medical stream related to the wholesome cure of ailments by the natural remedies in the form of both herbal formulations and purificatory procedures. In *Ayurveda* a person is known healthy when his/her all dosha, dhatu, malas all are in normal state<sup>1</sup>.

*Nirgundayadi taila* is an *ayurvedic* medicated preparation which is mentioned for *karnpoorana* therapy in *karnaroga*. *Karnanada* is one among *karnarogas* described by various *acharyas*. The sign and symptoms of *karnanada* have similiarity with tinnitus. *Taila* is a medicated formulations of various *doshshamak* drugs according to respective diseases which alleviates *vata dosh* does not aggravate *kapha*<sup>2</sup>. During the *snehapaka* procedure *taila* have a specific property to assimilate the properties of added drugs and maintains its own properties<sup>3</sup>. In present study *Nirgundayadi Taila* is taken for the management of *karnanada*.

Table 1 compositions of *Nirgundayadi taila*.

Sl. No.	Drug	Latin name	Family	Quantity
1.	<i>Nirgundi</i>	<i>Vitex nirgundo</i>	Verbenaceae	500gm
2.	<i>Jaati</i>	<i>Jasminum officinale</i>	Oleaceae	500gm

3.	<i>Arka</i>	<i>Calotropis procera</i>	Asclepiadaceae	500gm
4.	<i>Bhringraj</i>	<i>Eclipta alba</i>	Compositae	500gm
5.	<i>Rasona</i>	<i>Allium sativum</i>	Liliaceae	250gm
6.	<i>Karpasa</i>	<i>Gossypium herbaccum</i>	Malvaceae	500gm
7.	<i>Sahijana</i>	<i>Moringa oleifera</i>	Moringaceae	500gm
8.	<i>Tulsi</i>	<i>Ocimum sanctum</i>	Labiatae	500gm
9.	<i>Aadraka</i>	<i>Zinziber officinale</i>	Zinziberaceae	250gm
10.	<i>Karvellaka</i>	<i>Momordia charantia</i>	Cucurbitaceae	250gm
11.	<i>Vatsnabha</i>	<i>Aconitum ferox</i>	Ranunculaceae	250gm
12.	<i>Tila taila</i>	<i>Sesamum indicum</i>	Pedaliaceae	5 ltr

## Material and methods:

### Collection of Raw Materials:

The raw drugs for the study were procured from the Herbal Automation Kankhal, Haridwar, Uttarakhand. The final product that is *Nirgundayadi Taila* was prepared in Anamika Pharmacy, Sidkul, Haridwar, Uttarakhand. The ingredients were identified by PG Department of Dravyaguna, Rishikul Campus, Haridwar.

### Method of preparation of *Nirgundayadi taila*:

The *Nirgundayadi taila* was prepared as per standard operative procedures of the *ayurvedic* pharmacopeia of india for oil preparation. For the preparation of *Nirgundayadi taila* 5ltr *tila taila* was taken and the raw drugs *Nirgundi*, *Jaati*, *Arka*, *Bhringraj*, *Karpasa*, *Sahijana*, *Tulsi* were taken in equal amount each one part which was 500gm and *Rasona*, *Aadraka*, *Karvellaka*, *vatsnabha*, each 250gm taken in fresh and dry form as per availability. All the content drugs are shown in figure and tabulated (table 1).

*Nirgundi*, *Jaati*, *Arka*, *Bhringraj*, *Karpasa*, *Sahijana* and *Tulsi* were taken as fresh form and mixed with 8 times of water and boiled for decoction in regulated temperature till it became one fourth of water and filtered with muslin cloth. *Rasona*, *Aadraka*, *Karvellaka*, *vatsnabha*, these drugs were crushed in form of *kalka* (paste). After these 5ltr *tila taila* was taken in medium size vessel and the decoction and *kalka* were mixed in it and oil was heated till the water contents of oil evaporated. Heating was stopped when *varti* of *kalka dravyas* was formed and other *taila paka* examination was done. *Taila* was filtered while hot through a muslin cloth and allowed to cool after that the *taila* was packed tightly.

### Analytical study

Prepared final product i.e. *Nirgundayadi taila* was analysed by employing various analytical parameters.

### Organoleptic study

Organoleptic characteristics like color, appearance of *Nirgundayadi taila* were observed.

## Physiochemical analysis

Table 2. organoleptic parameters of *Nirgundayadi taila*

Sl.no	Test	Result
1.	Colour	Light yellowish
2.	Appearance	Oily Liquid
3.	Weight/ml at 40°C	0.9168
4.	Refractive index at 40°C	1.4716
5.	Peroxide value	2.10
6.	Iodine value	118.16
7.	Saponification value	202.94
8.	Mineral oil	Absent

Table 3. Pharmaceutical and analytical results

Sl. No	Test	Results
1	Total bacterial count(cfu/g)	<10
2	Yeast and mould count (cfu/g)	<10
3	E. coli	Absent
4	S. aureus	Absent
5	P. aeruginosa	Absent
6	Salmonella sp.	Absent

## TLC Profile

About 100ml oil measured and transferred to a 250ml capacity separating funnel and added 50ml of methanol. Shaked slowly for about 3-5minutes taking precautions that no emulsion formation should took place. Stand for 10-15minutes so that both layers are separated out. Collected the methanolic layer and evaporated the methanol.

Mobile phase- chloroform:methanol(90:10)

Procedure: Applied 10µl and 8µl of each of standard and sample preparation on the TLC plate at lower side, 5mm above the edge of plate. Developed the plate in 10× 10cm twin through glass chamber containing mobile phase and pre saturated for about 10min to 9cm.

**Spraying reagent:** Methanol:Glacial Acetic Acid:Anisaldehyde:Sulphuric acid (85:10:0.5:5).

## Discussion

*Nirgundayadi taila* is explained in *Yogratnakar* under *karna roga chikisa adhyaya* for *karnapoorana*. detailed method of preparation of *Nirgundayadi taila* is not available. For optimum therapeutic efficacy *Nirgundayadi taila* was prepared according to the *Ayurvedic Pharmacopoeia of India* and highest level of hygiene was maintained in all processes till the manufacturing and packaging of finished product was completed in 50ml sterile bottles. *Nirgundayadi taila* is prepared by *til taila* and eleven other drugs which are predominantly *vata* and *kapha shamak*. the obtained values of all tests are found within normal limits which indicate good quality of prepared oil.

## Conclusion

*Nirgundayadi taila* is a herbal formulation contains the drugs having properties such as *mastishk baldayak*, *balya*, *rasayana*, *naadi sansthan baldayaka*, *karna rognashaka*, *kapha vaata shamaka*. All the

test parameters and bacterial counts (table 2&3 ) as per API were found within normal limit in prepared *Nirgundayadi oil*.



TEST REPORT				
Sample Name	NIRGUNDYADI TAIL			
Report No.	AFF2019020110			
Batch No.	NS			
Exp. Date	2025/2021			
Pack Size	NS			
Batch Size	NS			
Sample Quantity	500ml			
Condition of product	NS			
Sample reference	NS			
Sample Manufactured By	NS			
Sample Supplier By	NS			
Sample Submitted By	DR. Hemraj Singh Jadhav, PG Scholar (A), Yashwantrao Chavan Pratishthan, Mumbai (M.K.)			
Address of Customer	100/2021			
Analysis started on	100/2021			
Analysis completed on	100/2021			
S. No.	Test Parameters	Methods	Specifications	Method Reference
01	Appearance	A light yellow colored oil	Visual	API
02	Weight per ml at 40°C	0.8166	API	API
03	Refractive index at 40°C	1.4715	API	API
04	Acid value	1.20	API	API
05	Alkaline value	2.30	API	API
06	iodine value	118.16	API	API
07	Saponification value	252.84	API	API
08	Moisture	10000	Should be absent	API
09	Identification (By TLC)	Picture attached	API	API
<b>Microbiological Limit Test</b>				
	Total bacterial count (log)	<10	10 <sup>6</sup>	API
	Total fungal count (log)	<10	10 <sup>6</sup>	API
	F. colt	Absent	Should be absent (g)	API
	S. aureus	Absent	Should be absent (g)	API
	P. aeruginosa	Absent	Should be absent (g)	API
	Salmonella sp.	Absent	Should be absent (g)	API

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	P. aeruginosa	Absent	Should be absent (g)	API
	Salmonella sp.	Absent	Should be absent (g)	API

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