

PHARMACEUTICO-ANALYTICAL STUDY OF YAMAK PAKA W.S.R. TO JIVANTYADI YAMAKA

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ABSTRACT

There are so many preparations which have been mentioned in the Ayurvedic classic. In *Sneha Kalpana*, *Yamak* preparation is one of them which are extremely rare as external application. The *Yamak* preparation is mentioned in context to the treatment of a group of many diseases which are prepared with some rejuvenating drugs apart from their *doshik* involvement. The efficacy of *Yamaka paka* namely “*JIVANTYADI YAMAK*” is having curable effect on skin disease like ‘*khudrakushtha*’. “*JIVANTYADI YAMAK*” is prepared with two *sneha* viz. *Neemba taila* & *Goghrita* along with some herbs effective in skin disease. After pharmaceutical process of *Jivantyadi Yamak* this is subjected to analytical tests. The details of the pharmaceutics and results of analytical tests of *Yamak* will be discussed in the full paper.

Keywords : *Jivantyadi Yamak*, Pharmaceutics, Analytical study.

INTRODUCTION:

Yamak Kalpana is a pharmaceutical process which is basically *Sneha Kalpana*. *Sneha Kalpana* is one of the preparations of *Bhaishajya Kalpana*. There are so many preparations, which have been mentioned in the Ayurvedic classic. There are mainly five classical preparations (*Panchabidha Kasaya Kalpana*), which have been mentioned in the different Ayurvedic text. But it is also true, some preparations which is very rarely mentioned in the classic, also purely a modified state of five classical preparations. Among them the *YAMAK* preparation is extremely rare. Though the preparation does not interfere primary and secondary with the basic five pharmaceutical preparations. But the base of the *Sneha*, which is used in *YAMAK sneha paka*, is separate from either *Taila* or *Ghritha paka*. *YAMAK* is consider when two types of *Sneha* i.e. *Ghritha* & *Taila* are mixture¹. “*JIVANTYADI YAMAK*” is prepared with two

sneha viz. *Neemba taila* & *Goghrita* along with some herbs effective in skin diseases.

MATERIALS & METHODS:

Jivantyadi Yamak (malahar) namely ‘*Yamak*’ preparation was considered an effective drug and preparation was mentioned in classical text books of Ayurveda. Here *Jivantyadi Yamak* was prepared according to Arundatta tika of *Astanga Hridaya* along with some modification. *Jivantyadi Yamak* was prepared in three batches with same method.

Preparation of *Jivantyadi Yamak malahar*: *Jivantyadi Yamak*^{2,3} was prepared as per the reference of *Carak samhita* & *Astanga Hridaya (Kusthadhikar)*. *Jivantyadi Yamak malahar* was prepared by some modifying the ingredients present form and keeping same ingredients. Ingredients, parts of used and quantity for the formulation are mentioned in (Table-1 & Table-2). *Prakshep dravya* shows another Table-3. *Goghrita* and *Neemba talia* was used after *murchhana*⁴, and *Arka kshir* also used after

sodhan⁵. Here Tuttha used as bhasma⁶ form.

PROCEDURE

- ◇ All *Kalka dravyas* was made in fine powder form and prepared *Kalka* by adding *Arka kshir* and water as 1:2 ratio.
- ◇ *Murchita Ghrita* and *Neemba Taila (Yamak)* was taken in a steel vessel and heated over *Madhyam agni* till complete evaporation of moisture content, at this stage temperature gone up to 130⁰C.
- ◇ The complete evaporation of moisture, then reduce temperature up to 80⁰C and bolus of *Kalka* was added to the *Yamak sneha* and constant stirring is carried.
- ◇ After that *Drava Dravya* (water) was added in *Murchita yamak*.
- ◇ Again heat was applied with *mandhagni* stirring.
- ◇ After 3 hrs and 45 minutes heating it is allowed for self-cooling and a plate is covered to prevent from any dust fall.
- ◇ On the next day, heating is again continued and 2^{1/2} hrs heating is carried on this day and constant stirring is carried to avoid sticking of the *Kalka* drugs.
- ◇ On 3rd day, the heating process is continued till the *Yamak sneha* becomes water free and gets the *Sneha Siddhi Lakshanas*.
- ◇ After observing all the qualities of *Sneha Siddhi* (at *Madhyama Paka*), the vessel is taken out from the fire and the *Siddha Yamak* is filtered through a clean cloth in the warm stage.
- ◇ After filtered *Sarjarasa* added and again heating till all *Rala* melted and continuous stir and again filtered.
- ◇ After that *Madhuchista* was added in the warm-stage and stirred till to cool.
- ◇ After adding *Madhuchista* when *Yamak* became sticky then added *Tuttha Bhasma* and stirred homogeneously.
- ◇ Obtained **Jivantyadi Yamak** is preserved in glass jar to protect from moisture.

Precautions:

- ◇ Big size vessel was taken and continuous stirring was done during preparation of **Jivantyadi Yamak** to avoid *Phenodgam* and sticking of *Kalka dravyas* at the bottom of vessel. The formulation of *Jivan-*

tyadi Yamak was analyzed by employing various related analytical parameters, like-

A. Organoleptic parameters:

Sparsha - Consistency, *Rupa* – Colour, *Rasa*- Taste and *Gandha*- Odour.

- #### B. Physico-chemical parameters:
- pH at 5.78% aqueous solution, Loss on drying at 105⁰C–1.410% w/w, Specific gravity, Refractive Index, Acid Value, Iodine Value, Saponification Value, Ester Value, Chromatographic methods- T.L.C., Microbial contamination (Total bacterial/fungal count), Test for Heavy Metals(AAS) [Copper, Lead, Cadmium, Mercury, Arsenic, Sulphur].

OBSERVATIONS:

At the time of *Yamak paka* stage the colour of the substance becomes pleasant smell and red brownish colour and sticking of *Kalka dravya* at the bottom of vessel was observed during *Paka*. When the *Paka* reaches the stage of completion it has found that all the *Siddhi Lakshanas* of *sneha paka* was properly identified except *Phenudgam* and *Phensanti lakshana*, because *Ghrita paka lakshana* has *Phenasanti* whereas *taila paka lakshana* has *Phenudgam*. So *Phenudgam* was observed till end-point of the *Yamak paka*. When adding *Rala* and *Madhuchista* its colour becomes deep brownish and after adding *Tuttha bhasma* again it becomes dark brownish. Observation of analysis is mentioned in Table-5.

DISCUSSION:

Jivantyadi Yamak paka is one of the Peculiar *sneha paka*. During frying of the *kalka* the temperature was maintained in an average between 60⁰C - 70⁰C, which allows the slow contact of drug with fat in mild fire, due to which the active components are not evaporate, only moisture is evaporate. After proper frying of *kalka* then added water at the amount of 4 times of *sneha* which is help to all drugs active properties (fat soluble & water soluble) comes out from *kalka* to *sneha* and that time temperature was maintained in an average 90⁰C-98⁰C.

Average total time required for preparation of *Jivantyadi Yamak* is 9.30

hrs. Another average 1-2 hours is needed for cooling and malahar preparation.

Here observed that Acid value has slightly elevated, it may be due to beeswax. Beeswax has an acid value of 17-24.

CONCLUSION:

Malahar form of Jivantyadi yamak which have easily external applicable.

The adopted manufacturing procedure can be accepted as S.M.P. (Standard Manufacturing Procedure) for Jivantyadi Yamak malahar.

The present analytical parameters can be used for routine quality control of the formulation.

Table-1: SHOWING INGREDIENTS ALONGWITH QUANTITY OF JIVANTYADI YAMAK.

Sl.No.	Materials	B ₁	B ₂	B ₃
1.	Murchit Goghrita	1 kg.	1 kg.	1 kg.
2.	Murchit Neem oil	1 kg.	1 kg.	1 kg.
3.	Kalka	500 g.	500 g.	500 g.
4.	Water	8 Litres	8 Litres	8 Litres

Table-2: SHOWING THE KALKA DRAVYA OF EACH BATCH.

Sl.No.	Sanskrit Name	Latin Name	Part of used	Quantity
1.	Jivanti	Leptadenia reticulate	Whole plant	100 g.
2.	Manjishta	Rubia cordifolia	Root	100 g.
3.	Daruharidra	Berberis aristata	Stem	100 g.
4.	Kampillak	Mallotus philippinensis	Fruits (Phala raja)	100 g.
5.	Suddha Arka	Calotropis procera	Latex(kshir)	100 g.

Table-3: SHOWING THE QUANTITY OF PRAKSHEP DRAVYA FOR EACH BATCHES OF JIVANTYADI YAMAK.

Sl.No.	Prakshep dravya	B ₁	B ₂	B ₃
1.	Sarjaras	119 g.	114 g.	117 g.
2.	Madhuchhista	119 g.	114 g.	117 g.
3.	Tuttha bhasma	63 g.	63 g.	63 g.

*N.B. = Tuttha was taken in the same ratio of other kalka dravyas and Tuttha bhasma taken according to percentage of weight obtained.

Table-4: SHOWING THE PREPARATION OF VARIOUS SAMPLE OF JIVANTYADI YAMAK.

Sample Name & no.	Duration of Paka (in hours)	Quantities of Yamak (in kg.)		Loss of Yamak (in ml.)	% Loss of Yamak	Temp. range during Sneha Paka (in °C)	Type of Sneha Paka	Amount of rejected kalka (in g.)	Colour of Sneha paka obtained
		taken	obtain						
B ₁	9.00	2 kg.	1.9	100	5.0	96-98	Madhyam	743	Red brown
B ₂	10.00	2 kg.	1.83	170	8.5	96-98	Madhyam	650	Red brown
B ₃	9.00	2 kg.	1.91	90	4.5	96-98	Madhyam	867	Red brown

Table -5: SHOWING THE FINAL AVERAGE WEIGHT OBTAIN OF JIVANTYADI YAMAK.

Sl.No.	Name of Preparation	1 st Batch	2 nd Batch	3 rd Batch	Total wt.	Average wt. obtain
1.	Jivantyadi Yamak	2.201	2.121	2.207	6.529	2.18 kg.

kg.	kg.	kg.	kg.
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Table-6: SHOWING PHYSICO-CHEMICAL STANDARDS OF *JIVANTYADI YAMAK*.

Sl. No.	Name of tests	Results
1.	Colour	Dark Brown
2.	Odour	Characteristic
3.	Appearance	Oily malahar
4.	Touch	Mridu, Snigdha
5.	Clarity	Opaque
6.	Taste	mild tikta
7.	Specific gravity	0.9238 gm
8.	Refractive index	1.4687
9.	Loss on drying	1.410%w/w
10.	pH Value	5.78
11.	Acid value	16.49
12.	Ester value	17.29
13.	Iodine value	39.15
14.	Saponification value	42.07
15.	Microbial contamination(bacterial & fungal)	Less than10cfu/gm
16.	TLC (Rf value)	0.47, 0.68, 0.84

Table-6: SHOWING HEAVY METALS ANALYSIS(AAS) OF *JIVANTYADI YAMAK*

Sl.No.	Name	Results
1.	Copper	1.7482 mg/100ml.
2.	Mercury	0.01768 mg/100ml.
3.	Arsenic	0.02 mg/100ml.
4.	Lead	Not detected (qualitatively)
5.	Cadmium	Not detected (qualitatively)
6.	Sulphur	Not detected (qualitatively)

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