ISSN: 2320-7329
http://www.ayurlog.com
July-Sept: 2025 | Volume: 13th | Issue: 3rd

NATIONAL JOURNAL OF RESEARCH IN AYURVED SCIENCE

Article Received Date: 18/05/2025 Reviewed on Date: 19/07/2025 Accepted on: 25/07/2025

# A Pharmaceutico-Analytical Evaluation of *Kanakbindurishta*

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**Abstract :**

**Background :** Ayurvedic medicines are of various types, they are *Swaras* (juice), *Kwath* (herbal decoction), *Kalka* (Paste),*Hima*, *Phanta, Churna* (powder), oils, tablets, creams along with *Asava* and *Arishta*. *Asava* and *Arishta* are considered as unique and valuable therapeutics in Ayurveda. *Asava* and *Arishta* are made by fermentation process both acidic and alcoholic fermentation. There is various *Asav -Arishta* are mentioned in classic text . *Kanakbindurishta* is one of the formulation described in Charak Samhita. It is indicated in *Maha Kushta*, *Arsha*, *Shwas, Kasa, Kilas Kushtha, Prameha, Shosh*. Here attempt has been made to carry out original research article on *Kanakbindurishta*. **Aim :** To study the Pharmaceutico-Analytical Evaluation of *Kanakbindurishta*. **Material and Method :** The preparation of *Kanakbindurishta* was done according to the reference of Charak Samhita *Kushtarogadhikar*. All the procedure was done systematically and observations were noted. **Discussion:** Observations during Pharmaceutical and Analytical aspects of will be discussed in present paper. **Conclusion :** The stepwise description and documentation of Pharmaceutico-Analytical study of *Kanakbindurishta* in scientific, logical, and sequential manner helps in developing standard manufacturing procedure This standard procedure helps in producing the formulation by following the guidelines given in the above SOP.

**Keywords:** *Asav-Arishta, Kanakbinduarishta, Kushtha, Sandhan*, Fermentation, Analytical.

## INTRODUCTON :

*Rasashastra* and *Bhaishajyakalpana* is a branch of *Ayurveda* which mainly gives knowledge of preparation of medicine, it's properties and dosage. According to Acharya Sharangdhar, *Bhaishajyakalpana* comprises five basic formulations i.e *Swaras*, *Kalka*, *Kwath*, *Hima* and *Phanta*. Other *Kalpana* derived from above five *Kalpana* like *Avaleha Kalpana*, *Ghrita Kalpana*, *Tail Kalpana* and *Sandhan Kalpana*.

In Ayurveda, *Sandhana Kalpana* is one of the particular dosage forms. *Sandhan Kalpana* is a unique formulation due to its advantages, properties and preparatory method. In *Sandhana Kalpana*, preparation of *Asava* and

*Arishta* are included. *Arishta* are self-generated herbal fermentation formulation in traditional medicinal system, they are considered as unique as well as important therapeutics in Ayurveda.

These *Asava-Arishta* have many advantages like better keeping quality, enhancement in the efficiency of extraction of drug molecules from the herbs and improvement in drug delivery in to the human body sites The *Asava-Arishta* are classical Ayurvedic pharmaceutical dosage forms that are easy to use and are frequently prescribed owing to better palatability, accelerated therapeutic action enhanced efficacy in the treatment of several disease and due to its long shelf life. [1]

*Kanakbinduarishta* is one of the important *Arishta Kalpana* described in Charak Samhita *Kushtha Chikitsa Adhyay*. The ingredients of *Kanakbinduarishta* are *Khadir, Triphala, Marich, Pippali, Sunthi, Vidanga, Haridra, Musta, Vasa,Indrayava, Guduchi ,Darvi*. *Khadir* (Acacia catechu) is a main ingredient in this formulation. [2]

It is indicated in condition like *Maha Kushta*, *Arsh*, *Shwas, Kasa, Kilas Kushtha, Prameha, Shosh*.[2]

In the reference the ratio to prepare the *Kwatha* of *Khadira* and which sweetening agent should be used is not mentioned, so it is taken from Sharangdhara Samhita.[3] So, this is an attempt to establish Standard operating procedure for preparation of *Kanakbinduarishta* by pharmaceutical and analytical study. This research work will offer the scope of further experimental and clinical study.

**AIM :**

To study the Pharmaceutico-Analytical Evaluation of *Kanakbindurishta*.

**OBJECTIVES :**

1. To highlight the concept of *Asava-Arishta Kalpana in details*.
2. To prepare *Kanakbindurishta* by traditional method with special reference to Charak Samhita (*Kushtarogadhikar*) 7/76-79 [2]
3. To study physico-chemical analysis of *Kanakbindurishta* by Ayurvedic and modern parameter .

**MATERIALS AND METHODS :**

This study was carried out in two steps.

1. **Pharmaceutical study**
2. **Analytical study**

**1. Pharmaceutical study :** Pharmaceutical study carried out in three steps:

**A. Raw Material Identification:**

All the raw materials of *Kanakbindurishta* were procured from authentic source and identity by expert of Dravyagun and Rasashastra department to confirm the quality, identity, purity and strength.

**B. In process Quality Control:**

The preparation of *Kanakbindurishta* was done according to reference of Charak Samhita (*Kushtarogadhikar*) 7/76-79. [2]

**EQUIPMENTS :**

Stainless steel vessel, Stainless steel spatula, Stainless steel plate, Weighing machine, Porecelin Jar, Mercury thermometer, Cotton, Gas cylinder and burner, Stainless steel container, White clean cotton cloth (musline cloth), *Multani Mitti*.

**MATERIALS :**

**Table no.1 showing Ingredients of *Kanakbinduarishta***

| ***Dravya* Type** | **Drug name** | **Latin name[4]** | **Part used[4]** | **Quantity taken** |
|---|---|---|---|---|
| *Adhara Dravya* | *Khadira* | Acacia Catecha | *Khadirsara,Twak* | 1 kg |
| *Prakshepa Dravya (Adheya)* | *Amalaki* | Emblica Officinalis | Fruit | 48 gm |
| | *Haritaki* | Terminalia Chebula | Fruit | 48 gm |
| | *Bibhitaki* | Terminalia Bellirica | Fruit | 48 gm |
| | *Sunthi* | Zinziber Officinalis | *Kanda* | 48 gm |
| | *Maricha* | Piper Nigrum | Fruit | 48 gm |
| | *Pippali* | Piper Longum | Fruit | 48 gm |
| | *Vidanga* | Embelia Ribes | Fruit | 48 gm |
| | *Haridra* | Curcuma Longa | Fruit | 48 gm |
| | *Musta* | Cyperus Rotundus | Root | 48 gm |
| | *Vasa* | Adhatoda Vasica | Leaf | 48 gm |
| | *Indrayava* | Holarrhena Antidycentrica | Seeds | 48 gm |
| | *Daruharidra* | Berberis Aristata | *Twak* | 48 gm |
| | *Amruta* | Tinospora Cordifolia | *Kanda* | 48 gm |
| Sweetening agents[3] | *Guda* | Jaggery | - | 770 gm |
| | *Madhu* | Honey | - | 335 gm |



**METHODOLOGY :**

Preparation of *Kanakbinduarishta* is explained into 2 parts

A. Method of preparation of *Kanakbinduarishta*
B. Analytical test of finished product

**A.Method of preparation of *Kanakbinduarishta* -**

Preparation of *Kanakbinduarishta* divided into 3 parts

1. *Purvakarma*
2. *Pradhankarma*
3. *Paschatkarma*

***1.Purvakarma* :**

- Cleaning of *Sandhan Patra* –

Porcelain jars were washed with hot water and dried in sunlight.

- *Dhupana* of *Sandhan Patra* –

Porcelain jar was fumigated with *Guggul, Nimb, Vacha.*

***2.Pradhankarma* :**

**2.1. Preparation of *Khadir Kwatha* :**

- Coarse powder of *Khadir* was taken in vessel and water(8 lit) added to it and kept for soaking overnight.
- On next day it was kept on *Madhyam Agni* till it was reduced to 2 lit (¼part).
- Then *Kwatha* was filtered through muslin cloth in Stainless steel containers.

**Images showing preparation of *Khadir Kwatha* :**


**2.2 *Sandhan Vidhi* of *Kanakbinduarishta* :**

- After filtration of *Khadir Kwatha*, at $35^0$ C coarse powder of 770gm of jaggery was added to *Kwatha*.
- Continuous stirring was done until jaggery completely dissolved in it.
- After cooling of *Kwatha*, all *Prakshepa Dravyas* and Honey were added in it. Then mixture was continuously stirred.
- *Dhupana* of the *Sandhanpatra* (Porcelin jar) was carried out by *Dhupana Dravya*.
- Then, this mixture poured in dry and fumigated porcelain jar
- *Sandhibandhan* was done with mud layered cloth.

***3.Paschat Karma :***

- Porcelain pots were kept in clean and dry room for fermentation.
- After one month fermentation was completed, then *Sandhibandhan* opened *Sandhana Pariksha* were carried out (Crackling sound and candle flame test)**.**
- *Kanakbinduarishta* was filtered by cloth and kept in another vessel.

**C. Finished Drug :**

After complete preparation finished drug was stored in air tight container. And Analytical tests were carried out.

**Precautions :**

- Jaggery was added at 35°C and stirred well, again it was filtered with clean cloth to remove the residue or any particle if present after dissolving.
- The mixture was poured in *Sandhan Patra* in such way that minimum ¼ th space of *Patra* should remain empty.
- Care was taken to avoid spillage during the transfer of contents into porcelain jars.

***Arishta Siddhi Lakshana* : [5]**

**Following *Lakshanas* were found**

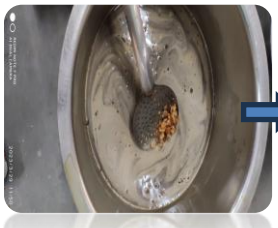
- There was no crackling sound heard in Porcelin jar.
- Candle test- Burning candle burns brightly when placed in or just above the *Sandhana Patra*.
- The preparation had the characteristics as typical aromatic and alcoholic odor.
- Powdered drugs settled down completely.
- *Arishta* was clear, no froth was present on the.

**Images showing Preparation of *Kanakbinduarishta*:**

**Images showing Preparation of *Kanakbinduarishta* :**

*Khadir*

Mixing of



Stirring

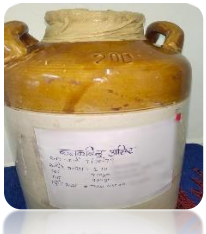
Mixing of Honey

Mixing of Honey

Dhupan

Pouring of mixture

Mixture



Sealing of

After Fermentation

Candle Test

Filtration of *Kanakbinduarisht*

*Kanakbinduarishta*

## OBSERVATION AND RESULTS :

**Table no.2 showing Temperature recorded during *Kwatha* preparation**

| **Procedure** | **Temperature of *Kwatha*** |
|---|---|
| Vessel kept on *Agni* | 28ºC |
| Mixture started boiling at | 82ºC |
| Maximum temperature | 92ºC |
| Filtered at | 73ºC |

**Table no.3 showing Organoleptic analysis of *Kwatha***

| **Parameters** | **Observation** |
|---|---|
| Colour | Brown |
| Odour | *Dravya Vishesh* |
| Appearance | Liquid |
| Taste | *Kashay, Tikta* |

**Observations of *Drava Dravya* after completion of Fermentation :**

Vessel is left undisturbed for 30 days. After 30 days tests of the completion of fermentation are looked for which are as follows –

- No effervescence
- No hissing sound.
- Strong alcoholic odour and taste.
- Burning candle continue to burn.



**Table no.4 showing Room temperature recorded during fermentation process**

| **Day** | **Minimum temperature** | **Maximum temperature** |
|---|---|---|
| Day 1 | 24 °C | 35 °C |
| Day 2 | 24 °C | 35 °C |
| Day 3 | 25 °C | 34 °C |
| Day 4 | 24 °C | 37 °C |
| Day 5 | 25 °C | 38 °C |
| Day 6 | 27 °C | 36 °C |
| Day 7 | 25 °C | 39 °C |
| Day 8 | 25 °C | 29 °C |
| Day 9 | 24 °C | 37 °C |
| Day 10 | 25 °C | 37 °C |
| Day 11 | 25 °C | 39 °C |

| | | |
|---|---|---|
| Day 12 | 24°C | 38°C |
| Day 13 | 24°C | 37°C |
| Day 14 | 26°C | 34°C |
| Day 15 | 26°C | 33°C |
| Day 16 | 25°C | 32°C |
| Day 17 | 25°C | 33°C |
| Day 18 | 24°C | 33°C |
| Day 19 | 24°C | 32°C |
| Day 20 | 24°C | 35°C |
| Day 21 | 25°C | 32°C |
| Day 22 | 25°C | 34°C |
| Day 23 | 24°C | 34°C |
| Day 24 | 26°C | 32°C |
| Day 25 | 26°C | 35°C |
| Day 26 | 26°C | 36°C |
| Day 27 | 26°C | 36°C |
| Day 28 | 25°C | 34°C |
| Day 29 | 25°C | 34°C |
| Day 30 | 25°C | 35°C |

**Table no.5 showing Organoleptic Characterisitcks of *Kanakbinduarishta***

| **Organoleptic Parameter** | **Observation** |
|---|---|
| *Shabda* | No crackling sound present |
| *Sparsha* | Thin (liquid consistency) |
| *Rupa* (Color) | Dark reddish |
| *Gandha* | Alcoholic |
| *Rasa* (Taste) | *Tikta, Kashaya, Madhura* |

**Table no.6 showing Quantitative analysis during preparation of *Kanakbinduarishta***

| **Quantity of Drug taken** | **Quantity of Drug obtained** |
|---|---|
| • *Khadir Kwatha* – 2 lit<br>• *Prakshep Dravya* – 432 gm (each- 48gm )<br>• *Guda* (Jaggery) – 770 gm<br>• *Madhu* (Honey) – 335 gm | 2.6 lit |

**2. Analytical Study: Analysis of *Kanakbinduarishta*.**

**Table no.7 showing result of Physicochemical analysis of *Kanakbinduarishta*.**

| Sr No. | Parameters | Observed Values |
|---|---|---|
| 1. | pH | 4.46 |
| 2. | Specific gravity | 1.065 |
| 3. | Refractive Index | 1.341 |
| 4. | Total Solid(%w/w) | 19.61 |
| 5. | Viscosity(cPs) | 1.764 |
| 6. | Alcohol Content(% v/v) | 2.94 |
| 7. | Sugar percentage | 20.74 |

**DISSCUSSION :**

- All precautions were carried out for making *Kanakbindvarishta*. R.O water was used in preparation of *Kwatha* and *Sandhan Kalpana*. As it is easily available and free from contaminations. TDS level of RO water is below 150 and it is considered ideal for drinking purpose.
- *Kwatha* was prepared as mentioned in classical text. During *Kwatha* preparation, *Kwatha Dravya* was soaked in water for one night as soaking results in the softening of drug due to diffusion of liquid into the drug by the phenomenon of osmosis which results in better transfer of active principles from the drug to the solvent.
- A constant temperature upto 80ºC to 92ºC was maintained. This regulation of temperature protects heat labile phyto constituents. Temperature holds the significant factor in preserving thermolabile constituents.
- The fermentation vessels were subjected to *Dhupana*, to prevent contamination. *Dhupana* was carried out with *Haridra, Sarjaras, Nimba Patra, Guggula* .All *Dravya* possess *Krumighna* properties. *Dhupana* of Jar is important to avoid any contamination in *Arishta*.
- In *Kanakbinduarishta* Jaggery and Honey was added as sweetning agent and it also play important role in fermentation process. Jaggery contains sucrose, glucose and phosphate. Due to phosphate fermentation process increases. Honey contains nitrogenous elements which helps in fermentation.[6]
- Only three fourth of the container was filled with liquid ingredients, the remaining one fourth space may be left for the accumulation of gases released during fermentation process. This unfilled space shall provide room for frothing and release of gases during the process of fermentation.
- Effervescence with bubbling sound present during fermentation may be due to release of $CO_2$ as by product in process of fermentation. And no evidence of effervescence after completion of fermentation due to stoppage of release of $CO_2$.
- Mild alcoholic odour present during fermentation and strong alcoholic odour after completion of fermentation may be due to alcohol production increases.

- Burning candle may put off due to presence of $CO_2$ during fermentation and after completion of fermentation it continue to burn due to absence of $CO_2$.

**Analytical study :**

**pH value –**

- pH is a unit of measure which describes the degree of acidity or basicity. pH of *Kanakbinduarishta* is 4.46. This may be due to, process of fermentation produces more hydrogen ion which makes the preparation acidic. Because, when $H^+$ ion increases the pH will decreases.

**Specific gravity –**

- Specific gravity is the ratio of weight of substance in air at a specific temperature to that of an equal volume of water at the same temperature.
- The presence of dissolved substances in drugs expected to change or alter the value of specific gravity.
- Specific gravity pH of *Kanakbinduarishta* is 1.065.

**Alcohol content –**

- Alcohol by volume is a standard measure of how much alcohol is contained in a given volume of an alcoholic beverage.
- Alcohol content of *Kanakbinduarishta* is 2.94%.

**Total solid content –**

- Total dissolved solids is a measure of the combined content of all inorganic and organic substances contained a liquid in molecular, ionized or microgranular suspended form.
- Total solid content of *Kanakbinduarishta* is 19.61.

**Total Sugar percentage –**

- Total sugar includes reducing and non-reducing sugar present in drug.
- This may be due to in fermentation procedure sugars are converted to alcohol and carbon dioxide by yeast in absence of oxygen. Total Sugar Percentage of *Kanakbinduarishta* is 20.74 %.

**Viscosity –**

- Viscosity is a measure of a fluid's resistance to flow.
- Adding more sugar to water increases concentration of sugar molecules in the solutions, which in turn causes the molecules to become more tightly bound. This increased bonding between molecules causes the solution to become thicker, which is known as increased viscosity.
- Viscosity of *Kanakbinduarishta* is 1.764cPs

**CONCLUSION:**

- *Kanakbinduarishta* one of the most commonly used formulation in clinical practice
- The present research work aimed to study of Physico-chemical analysis of *Kanakbinduarishta* with special reference to *Charak Samhita*.
- This study formulated in 3 steps – which included step wise detailed procedure regarding raw material standardization, in process standardization and finished drug standardization, then analysis of each step to confirm the prepared product is in standard range according to standards mentioned.
- Preparation of *Kanakbinduarishta* was done firstly by the raw material standardization by the *Grahya Lakshana* of herbal drugs and also by the analytical study which was within the prescribed limits.
- This research work will offer the scope of further experimental and clinical study.

**REFERANCES :**


1. Dr. Sadiya Ajaj Shaikh, Dr. Arati P. Dubewar, Dr. Ashwin A. Shete. A pharmaceutico analytical study of Vidangarishta. J Ayurveda Integr Med Sci 2019;5:162-167. http://dx.doi.org/10.21760/jaims.4.5.26
2. Vd. Harish Chandra Singh Kushwaha, Charak Samhita Uttarardha, Edition 2009,Chaukhamba Orientalia,Varanasi, 2009, Pg. no. 206.
3. Dr. Brahmananda Tripathi, Sharangdhar Samhita, Edition 2015, Chaukhamba Surbharati Prakashan, Varanasi, Pg. no 164-165.
4. Dr. D. R. Lohar, Protocol for testing of Ayurved, Siddha, Unani medicines. Department of Ayush, Ministry of Health and Family welfare, Pg. no 49,50,54,124.
5. Siddhinandan Mishra, Bhaishajya Kalpana, Edition 2004, Chaukhamba Surbharati Prakashan, Varanasi, Pg. no 249-256.
6. Dr. Shital S. Yadav, Dr. Arati Dubewar, Dr. Ashwin Shete. Pharmaceutico Analytical Study of *Kanakbindvarishta* prepared by two different methods. J Ayurveda Integr Med Sci 2019;4:182-190. http://dx.doi.org/10.21760/jaims.4.4.25



*Conflict of Interest:* *None* *Source of funding:* *Nil*

***Cite this article:***

***A Pharmaceutico-Analytical Evaluation of Kanakbindurishta***

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*Ayurlog: National Journal of Research in Ayurved Science- 2025; (13) (03): 01-11*