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International Journal for Empirical Research in Ayurveda

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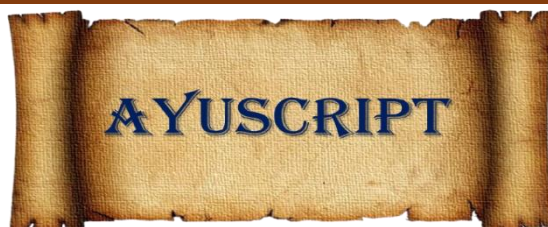
Volume - 4, Issue - 4

October-December: 2025

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## International Journal for Empirical Research in Ayurveda

### Pharmaceutical Preparation and Physico-chemical Evaluation of *Samasharkara Churna*: An Ayurvedic Formulation

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#### ABSTRACT:

Ayurveda is an ancient system of medicine, representing a comprehensive approach to personalised care. *Bhaishajya Kalpana* is a crucial branch of Ayurveda, focusing on the preparation of various formulations by converting raw materials into a suitable form. *Churna Kalpana* is one such formulation that is well known from the Vedic period for its extensive use. *Samasharkara Churna* is one among the formulations mentioned in the classics containing *Ela* (Cardamom), *Twak* (cinnamon), *Tejapatra* (Indian bay leaf), *Nagakeshara* (*Mesua ferrea*), *Maricha* (Black pepper), *Pippali* (Long pepper), *Shunthi* (Dry ginger), and *Sita* (Sugar candy), and is indicated in treating various conditions like *Arsha* (Hemorrhoids), *Kasa* (Cough), *Agnimadhy* (Indigestion), *Aruch i* (Anorexia), *Kantha roga* (Throat diseases), and *Hridroga* (Cardiac disorder). In recent years, due to changes in lifestyle and environmental factors, there has been a rise in various diseases, resulting in a growing interest in traditional medicine, which offers a holistic approach. This study will help in understanding the preparation, various pharmacological actions of the ingredients and its physico-chemical parameters that will ensure the quality and efficacy of the *Samasharkara Churna*.

**Key words:** *Samasharkara churna*, Pharmacological action, Physico-chemical parameters

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#### How to cite this Article:

Kakodkar S., Sudhindra N., Samant A., Mudliyar A. Pharmaceutical Preparation and Physico-chemical evaluation of *Samasharkara Churna*: An Ayurvedic Formulation. AYUSCRIPT 2025;4(4):15-22 DOI: <http://doi.org/10.55552/AYUSCRIPT.2025.4404>

**Introduction:**

Ayurveda is an ancient medical system that offers a holistic and personalised approach to health and well-being. Hence, it is referred to as the “science of life.” It comprises a wide range of formulations that have been traditionally used to manage various ailments. *Bhaishajya Kalpana* is one among the important branches of Ayurveda that focuses on the preparation of different formulations or converting raw material into a suitable and convenient form. It includes Fundamental or primary preparations, called as *Panchavidha Kashaya Kalpana*, that is *Swaras*, *Kalka*, *Kwath*, *Hima*, *Phanta* and secondary preparations like *vati*, *avaleha*, *Sneha*, etc. The *Acharya*’s have also mentioned the concept of *Upkalpana*, which means the basic principle of the preparation remains the same, but the method of preparation slightly varies.

*Churna Kalpana* is a pharmaceutical preparation well known since the Vedic period. It is widely used both internally and externally to treat different disease conditions. *Churna* is the fine powder of completely dried drugs that is filtered through a clean cloth.<sup>[1]</sup> It holds a significant place due to its simplicity, ease of preparation and wide applicability. *Churna* can be prepared from a single drug or it can be a compound formulation. *Churna* is considered as the *upakalpana* of *kalka*, as the basic principle, pounding remains the same. However, in *Kalka*, wet drugs are used, whereas in *churna* the properly dried drugs are used.

*Samasharkara churna* is the classical formulation traditionally employed to treat

a wide spectrum of diseases. It is mentioned in the *Bhaishajya Ratnavali* <sup>[2]</sup> and even in the *Yogaratanakara*. <sup>[3]</sup> It is indicated in conditions like *Arsha* (Hemorrhoids), *Kasa* (Cough), *Agnimadhya* (Indigestion), *Aruchi* (Anorexia), *Kantha roga* (Throat diseases), and *Hridroga* (Cardiac disorder) etc. As per the classics, the formulation consists of *Ela* (Cardamom), *Twak* (cinnamon), *Tejapatra* (Indian bay leaf), *Nagakeshara* (*Mesua ferrea*), *Maricha* (Black pepper), *Pippali* (Long pepper), *Shunthi* (Dry ginger), and *Sita* (Sugar candy).<sup>[2,3]</sup> The formulation is valued for its various therapeutic properties that play a significant role in managing the ailments.

The physico-chemical profiling serves as the foundation stone to ensure the quality and efficacy of the formulation, which is an essential requirement for the global acceptance of the formulation.

**Aim:** To prepare and study the pharmacological and physicochemical aspects of the *Samasharkara churna*.

**Objectives:**

1. To analyze the pharmacological properties of each ingredient of *Samasharkara Churna*.
2. To prepare *Samasharkara churna* according to classical guidelines.
3. To study the organoleptic and physicochemical parameters of *Samasharkara churna*.

**Materials and methods:**

The information was gathered from various sources including classical books, compiled books, research articles and other sources.

**Table 1. Composition of Samasharkara churna: <sup>[2,3]</sup>**

Ingredients	English names	Botanical names	Part used	Ratio
<i>Ela</i>	Lesser Cardamom	<i>Elettaria cardamomum</i>	Seed	1 Part
<i>Twak</i>	Cinnamon	<i>Cinnamomum zeylanicum</i>	Bark	2 Parts
<i>Tejapatra</i>	Indian Bay Leaf	<i>Cinnamomum tamala</i>	Leaf	3 Parts

<i>Nagakeshara</i>	Mesua	<i>Mesua ferrea</i>	Flower stamen	4 Parts
<i>Maricha</i>	Black Pepper	<i>Piper nigrum</i>	Fruit	5 Parts
<i>Pippali</i>	Long Pepper	<i>Piper longum</i>	Fruit	6 Parts
<i>Shunthi</i>	Dry Ginger	<i>Zingiber officinale</i>	Rhizome	7 Parts
<i>Sita</i>	Sugar candy	-	-	28parts



Table 2. Pharmacological properties of the ingredients: [5]

Sr. no	Ingredients	Rasa Panchaka	Doshaghnata	Karma	Other Properties
1	<i>Ela</i>	Rasa: Madhura, Katu Guna: laghu, rukasha Virya: Sheeta Vipaka; katu	Kapha- Vata hara	Hridya (Cardiotonic), Dipana (Appetizer), Pachana(Digestive), Vatanulomaka(Carminative)	Anti-microbial, Anti-cancer, Anti-oxidant, Anti-inflammatory, Gastro-protective <sup>[6]</sup>



2	Twak	Rasa: Madhura, Katu, Tikta Guna: Laghu, ruksha, Tikshna Virya: Ushna Vipaka: Katu	Kapha – Vata hara	Ruchya(Palatable or appetite enhancer), Vishaghna (Antitoxic), Kanthasudhakara (throat- soothing)	Anti-microbial, Anti- diabetic, Anti- inflammatory, Anti- viral, Anti-bacterial, Gastro-protective [7]
3	Tejapatra	Rasa: Madhura Guna: laghu, picchila, Tikshna Virya: Ushna Vipaka: Katu	Vata – kapha hara	Ruchya(Palatable or appetite enhancer), Arshoghna (Anti- hemorrhoidal)	Anti-microbial, Ulcer protective, Anti-inflammatory, Anti-diarrheal, Anti- hyperlipidemic [8]
4	Nagakeshara	Rasa: Kashaya, katu, tikta Guna: laghu, ruksha Virya: Ushna Vipaka: katu	Kapha – pitta hara	Pramathi(Scrapping), Grahi (Absorbent), Pachana (Digestive)	Anti-oxidant, Anti- inflammatory, Anti- spasmodic, Hepatoprotective, Anti-microbial, Anti-fungal, immunomodulatory, cardio-protective[ 9]
5	Maricha	Rasa: katu Guna: laghu, tikshana Virya: ushna Vipaka: katu	Kapha -vata hara	Dipana (Appetizer), pramathi (Scrapping)	Anti-Microbial, Anti-oxidant, Anti- obesity, Digestive, Anti-pyretic, Immunomodulatory activity, Anti- diarrheal [ 10]
6	Pippali	Rasa: Madhura, katu, Tikta Guna: laghu, snigdha, Tikshna Virya: anushna Vipaka: Madhura	Vata – kapha hara	Dipana (Appetiser), Hridya (Cardiotonic), Ruchya (Appetite Enhancing), Rasayana (Rejuvenative), Rechana (laxative)	Anti-bacterial, Anti- inflammatory, CNS Stimulant, Cough suppressor, Anti- spasmodic [11]

7	Shunthi	Rasa: katu Guna: laghu, snigdha, tikshana Virya: ushana Vipaka: Madhura	Vata Kaphahara -	Anulomana (Carminative), Dipana (Appetiser), Hridya (Cardioprotective), Pachana (digestive)	Anti-inflammatory, Anti-oxidant, Anti-microbial, Antipyretic, immunomodulatory, Anti-atherosclerotic, Anti-angiogenic activity, Anti-helminthic, Anti-emetic activity [12]
8	Sita	Rasa: Madhura Guna: Snigdha Virya: Atishitala Vipaka: madhura	Vata-pitta-hara	Ruchikara (Palatable)	Enhances absorption [13]

**Pharmaceutical study:**

It includes:

1. Collection of raw material
2. Preparation of *Samasharkara churna*

**1. Collection of raw material:**

All the raw materials were collected from Authentic source and local market.

**2. Method of preparation of *Samasharkara Churna*:**

- Each raw material was identified, collected and authenticated individually.
- The *Samasharkara churna* was prepared following standard operative procedure of *Churna*.
- All the raw materials, i.e., *Ela*, *Twak*, *Tejapatra*, *Nagakeshara*, *Maricha*, *Pippali*, *Shunthi* and *Sita* were taken in the prescribed ratio mentioned in the table no.1
- Each drug was taken separately in the *khalva yantra* and pounded to convert it into fine powder form and sieved through the sieve no.80

- Later all the fine powders were taken in the *khalva yantra* one by one and triturated to form homogenous mixture.
- The prepared *churna* was weighed and packed in the clean, air-tight container and stored to prevent it from moisture.

**Precautions:**

1. The hygienic conditions were maintained throughout the procedure.
2. The trituration was done carefully to avoid the spillage.
3. The sieving was done carefully.
4. The weighing of each drug was done carefully.

**Observation:**

**Table 3. Organoleptic characters of *Samasharkara churna***

<i>Samasharkara churna</i>	Result
Colour	Cream colour
Odour	Characteristic
Taste	Pungent and slightly sweet
Touch	Smooth

**Analytical test result:****Table 4: Physico- chemical analysis of Samasharkara churna**

Parameters	Result
1. pH	5.5
2. Total ash	7.10%
3. Acid-insoluble ash	1.2 %v/v
4. Water-soluble extractives	51.56%
5. Alcohol soluble extractive	14.56%
6. Loss on drying at 105°C	3.87%
7. Reducing sugar	2.64%
8. Non-reducing sugar	1.41%

**Discussion:**

In this article the information was collected from different classical and compiled books and research articles.

**Pharmacological review:**

The formulation comprises of ingredients which mainly have *Madhura*, *Katu* and *Tikta Rasa*, *Ushna Virya*, *Laghu*, *Tikshana Guna* and *Exhibit Katu Vipaka*. Due to these properties, it collectively contributes to enhancing *Agni*, digesting ama dosha, balancing the doshas, mainly *Vata* and *Kapha dosha* and also helps in nourishing and promoting tissue strength and immune response. It also has properties like *Hridya* (Cardio-protective), *Vatanulomaka* (Regulate bowel Movement), *Pramathi* (Scraping), *Kanthasudhakara* (Throat-soothing agent), *Arshoghna* (anti-hemorrhoidal) etc. Hence, establishes its relevance in managing a wide range of diseases. Research has shown that these ingredients also possess antimicrobial, antioxidant, gastroprotective, immunomodulatory, etc., properties. These activities align with the traditional use of the drug and significantly contribute to the formulation's efficacy in treating various ailments and maintaining good health.

**Pharmaceutical review:**

The formulation was prepared following proper procedure mentioned in the classical reference. The *churna* formed was creamish in colour, with drug specific odour, smooth consistency and pungent and slightly sweet taste.

**Analytical review:**

Analytical evaluation plays a critical role in ensuring the quality of the formulation. The pH of the formulation is 5.5 which is mild acidic in nature. The total Ash value of the formulation is 7.10%. The ash value suggests the purity and authenticity of the drug and the amount of inorganic matter present in the formulation. Acid-insoluble ash is 1.2 % v/v, determines the acid-insoluble inorganic content present in the given sample. The water-soluble extractive value of the formulation is 51.56% suggesting the active principles soluble in the water. The alcohol soluble extractive value of the *churna* is 14.56%, that is the amount of compound soluble in alcohol. The Loss on Drying is 3.87%, it is a critical parameter that indicates the amount of moisture content present in a given formulation, which is important for ensuring the stability and shelf life of the formulation. Reducing and non-reducing sugar suggest the presence of a free aldehyde or ketone group in the sugar molecule and is crucial for ensuring the quality of the formulation. The formulation contains 2.64% reducing sugar and 1.41% non - reducing sugar.

**Conclusion:**

*Samasharkara churna* is the combination of ingredients that possesses *Dipana*, *Pachana*, *Anulomana*, *Ruchya*, *Arshoghana*, *Kanthasudhakara*, antimicrobial, immunomodulatory etc properties that are beneficial in treating disease condition. The physico-chemical parameters help in ensuring the quality of the drug. The combination of pharmacological properties with modern analytical evaluation provides a comprehensive understanding of the formulation. Further well-designed clinical



trials, in vitro, in vivo studies can be carried out to evaluate the efficacy, safety and therapeutic potential of Samasharkara churna. The in vitro studies help in elucidating the mechanism of action and pharmacological activities while in vivo study help in assessing its dose-response relationship, pharmacological efficacy and toxicity profile. The well-designed clinical trials can further establish its clinical effectiveness, safety and tolerability in specific disease condition, thereby providing evidence-based use.

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**Authors Contribution:** All authors have contributed equally.

**Financial Support and Sponsorship:** None declared

**Conflict of Interest:** There are no conflicts of interest.

**Declaration of Generative AI and AI Assisted Technologies in the writing process:** The author has not used generative AI/AI assisted technologies in the writing process.

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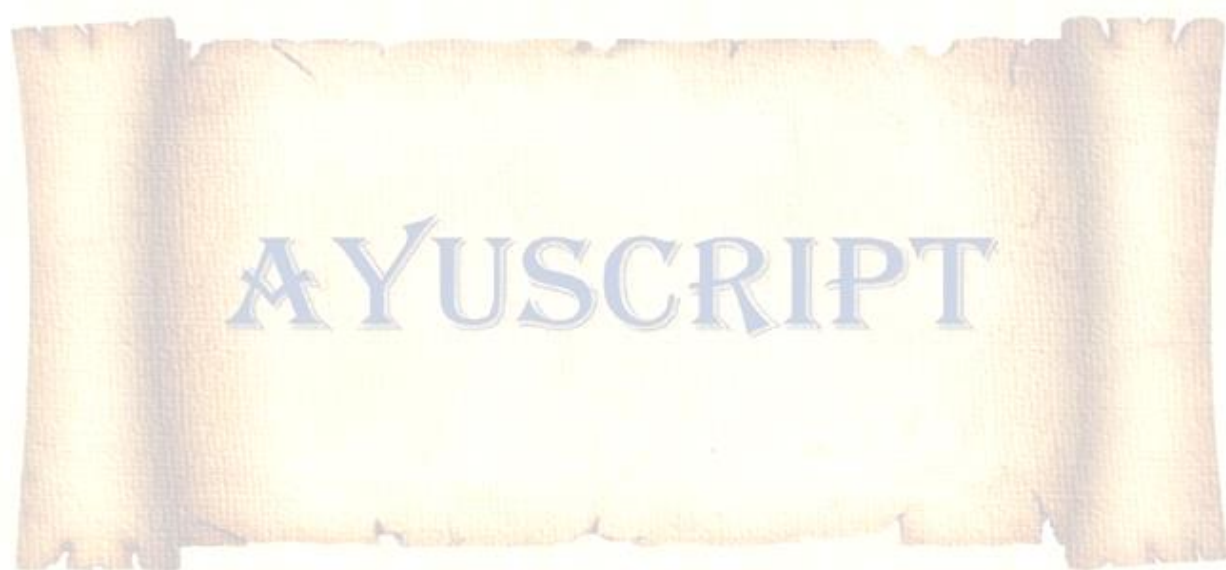
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IIFS Impact Factor: 2.125



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