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PHARMACEUTICAL EVALUATION OF SHATYADI CHURNA

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ABSTRACT
Medicinal plants form an integral part of traditional healthcare systems and are now recognized globally for their therapeutic importance. Their curative actions are attributed to a wide range of secondary metabolites present in various plant parts. ***Shatyadi Churna*** *is a classical Ayurvedic formulation prepared from eight key herbs in equal proportion, with a Bhabana Dravyas added to enhance efficacy. The present work aims to explore its phytochemical profile, pharmacological attributes, and probable mechanism of action.* ***Shatyadi Churna*** *is a classical powder formulation indicated in disorders of Grahani, Atisāra and Prameha conditions in different Nighaṇṭus. Grahaṇi Roga is a disease of Agni Vaishamya where Mandagni leads to improper digestion, Ama formation and deranged Grahaṇi functions. The formulation contains Deepana, Pacana, Grahaṇisaṃsthapana and Srotoshodhana drugs. Therefore, Shatyadi Churna corrects the Agni at Jatharagni level and reduces Ama, improves the digestive fire and normalises Grahaṇi function. The present study, carried out at ALN RAO MEMORIAL AYURVEDIC MEDICAL COLLEGE AND PG CENTRE, KOPPA, CHIKMAGALUR (KARNATAKA), includes standardization parameters such as identity, purity, strength, preliminary phytochemical screening, and TLC profiling. These findings play a crucial role in establishing scientific quality control measures and enhancing the therapeutic credibility of Ayurvedic formulations.*

KEYWORDS: *Shatyadi Churna, Deepana, Pacana, Grahaṇisaṃsthapana, Srotoshodhana, Grahaṇi, Agni, Ama, Preliminary Phytochemical Screening, And TLC Profiling.*

INTRODUCTION

Ayurveda, the ancient science of life, emphasizes not only the therapeutic utility of formulations but also their proper pharmaceutical preparation and evaluation. Churna (powder) is one of the most widely used dosage forms in Ayurvedic pharmaceutics (Rasa Shastra and Bhaishajya Kalpana)1. To achieve desired therapeutic effects, the quality of the raw drugs and the precision of the preparation process are of paramount importance.

Shatyadi Churna is a classical polyherbal powder formulation described in Yogaratnakar, Grahaniroagadhikar, Kaphaja Grahani. It contains Karchura(Curcuma zedoaria), Sunthi(Zingiber officinalis), Maricha(Piper nigrum), Pippali(Piper longum), Haritaki(Terminalia chebula), Pippalimoola (Piper longum), Yavakshara, Sarjikshara in equal proportions, with Vijapuraka(Citrus medica) as Bhabana Dravyas. The formulation Shatyadi Curṇa is primarily indicated in Grahaṇi Roga, especially the Kaphaja type of Grahaṇi, where Mandagni and excessive Kapha lead to picchila mala, gaurava, alasya and amapratiṣṭhana. This formulation exhibits Dipana, Pachana, Grahaṇisaṃsthapana and Srotoshodhana properties, which correct Agnidushti, eliminate Ama and normalise Grahaṇi function. The Tikta–Kaṭu–Kaṣaya Rasa along with Laghu–Rukṣa–Tikṣṇa Guṇa of Shatyadi Curṇa directly antagonise Kapha, therefore reducing mucous content in stool, heaviness and bloating. It also supports proper digestion and absorption, thereby improving Dhatu-poṣhaṇa. The pharmaceutical evaluation of Shatyadi Curṇa includes standard organoleptic, physicochemical and qualitative parameters as per API/WHO guidelines to ensure uniformity, consistency and quality standardisation of the formulation.

AIMS AND OBJECTIVES

1. To prepare Shatyadi Curṇa according to classical Ayurvedic texts.
2. To evaluate its pharmaceutical parameters including organoleptic, physicochemical, and phytochemical properties.
3. To establish standard quality control measures for the formulation, Shatyadi Curṇa.

MATERIALS AND METHODS

Source of Data

1. Classical text book of Ayurveda
2. Text books of Modern science
3. Published articles from periodical journals another magazines.

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Raw Materials

All the raw drugs were collected from authentic Ayurvedic suppliers and identified based on their **macroscopic and microscopic characters** as per *API (Ayurvedic Pharmacopoeia of India)* standards.

Method of Preparation 2,3

All the raw drugs of Shatyadi Curṇa were collected from authentic GMP approved raw drug store and were authenticated by the Department of Dravyaguna. Each drug was cleaned properly to remove physical impurities like soil, stones and foreign particles. Afterwards the drugs were dried under shade at room temperature to protect the volatile phytoconstituents. Each ingredient was powdered separately using a mechanical pulveriser to obtain fine powder. The powders were then passed through 80# sieve to achieve uniform particle size. All the sieved powders were mixed thoroughly in a clean, dry stainless steel container to obtain a uniform and homogeneous mixture of Shatyadi Curṇa. Finally, the prepared Churṇa was packed in an airtight, moisture-free, light resistant container and stored at room temperature until further use. Then the sample of final product, Shatyadi Curṇa was labeled with name, parts of ingradients and send to Laboratory for Pharmacological evaluation.

Table 1: Ingredients of Shatyadi Curṇa

Sl. No.	Drug Name (Botanical Name)	Botanical Name	Part Used	Quantity
1	Shati	Curcuma zedoaria	Kanda (Rhizome)	1 part
2	Sunthi	Zingiber officinalis	Kanda (Rhizome)	1 part
3	Maricha	Piper nigrum	Phala (Fruit)	1 part
4	Pippali	Piper longum	Phala (Fruit)	1 part
5	Haritaki	Terminalia chebula	Phala (Fruit)	1 part
6	Pippalimoola	Piper longum	Moola (Root)	1 part
7	Yavakshara	-	—	1 part
8	Sarjikshara	-	—	1 part
9	Vijapuraka	Citrus medica	Swarasa	As required

INGREDIENTS OF SHATYADI CHURNA



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PHARMACEUTICAL STUDY/ ANALYTICAL STUDY:

The Shatyadi Curṇa was analyzed by adopting various related analytical parameters like

A. Organoleptic Characteristics

Colour, odour, taste and appearance of Churna were observed and mentioned in (Table no.2)

(Table No. 2)

Colour	Greyish green
Odour	Aromatic
Taste	Slightly bitter, pungent, astringent
Texture	Powder

B. Physiochemical Analysis

Loss on drying at 105^0c, total ash value, water soluble ash, acid insoluble ash, pH value. Alcohol soluble extractives, Water soluble extractives was carried out for raw materials and results are mentioned in (Table no.3)

(Table No.3)

Parameter	Result (% w/w)	Remarks / Observation
Loss on Drying at 105°C	3.71%	Indicates moisture content
Total Ash	7.01 %	Represents total mineral content
Acid Insoluble Ash	0.50%	Reflects siliceous (sand/silica) matter
Water Soluble Ash	3.38 %	Indicates water-soluble inorganic salts
Alcohol Soluble Extractives	17.81%	Shows alcohol soluble phytoconstituents
Water Soluble Extractives	38.34 %	Represents water soluble active components
pH (5% Aqueous Solution)	4.76 + 0.10	Slightly acidic nature

These results indicate good quality of the Churna, with optimal moisture and extractive values suggesting stability and solubility.

C. Preliminary Phytochemical Tests (Qualitative Tests):

For various functional groups were done and observation and result of the *churna* was asserted in (Table no.4).

(Table no.4)

Phytochemical Test	Result
Carbohydrate	Present
Protein	Present
Alkaloid	Present
Cardiac Glycoside	Present
Flavonoids	Present
Tannins	Present
Anthraquinone Glycoside	Present
Triterpenoids	Present

The presence of these phytochemicals supports the Deepana, Pacana, Grahaṇisaṃsthapana and Srotoshodhana properties described in Ayurvedic literature.

D. FLUORESCENT TESTS

Reagent / Sample Treatment	Under Visible Light	Under Long UV
Sample + Water	Creamish Yellow	Fluorescent Yellow
Sample + MeOH	Light Yellow	Fluorescent Cream
Sample + 10% NaOH	Reddish Green	Fluorescent Green
Sample + 10% HCl	Yellowish Green	Fluorescent Green
Sample + 10% HNO_3	Reddish Green	Fluorescent Green
Sample + 10% H_2SO_4	Greenish Yellow	Fluorescent Yellow
Sample + 10% NH_3	Light Brown	Brown

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E, TLC PROFILE

Solvent System: Toluene: Ethyl acetate:: 80:20

Rf Value	Colour Under Long UV
0.04	Brownish Blue
0.15	Fluorescent Green
0.22	Fluorescent Green
0.35	Fluorescent Green
0.56	Fluorescent Green
0.65	Fluorescent Green
0.74	Fluorescent Green

DISCUSSION

The pharmaceutical evaluation of Shatyadi Curṇa demonstrated that the formulation maintains desirable organoleptic and physicochemical characteristics suitable for Churna preparation. The extractive values indicate a balanced solubility of active principles in both aqueous and alcoholic media. The presence of vital phytoconstituents such as alkaloids and flavonoids ensures Deepana, Pacana, Grahaṇisaṃsthapana and Srotoshodhana activity, correlating with its therapeutic indications in Grahaṇi Roga, especially the Kaphaja type of Grahaṇi.

The analytical data of *Shatyadi Curṇa* indicates that the formulation possesses satisfactory physicochemical characteristics ensuring its quality, stability, and efficacy. The **loss on drying (3.71%)** reveals a low moisture content, suggesting good stability and reduced susceptibility to microbial contamination. The **total ash value (7.01 %)** represents the overall mineral content, confirming the presence of inorganic constituents derived from the raw herbal materials. The **acid-insoluble ash (0.50%)** being very low denotes minimal siliceous or earthy impurities, reflecting the purity of the ingredients used. The **water-soluble ash (3.38 %)** suggests a considerable amount of inorganic salts soluble in water, contributing to the formulation's therapeutic mineral fraction. The **alcohol-soluble extractive value (17.81%)** indicates the presence of moderately polar phytoconstituents such as alkaloids, flavonoids, and resins, whereas the **water-soluble extractive value (38.34 %)** highlights the predominance of polar bioactive compounds like glycosides, tannins, and saponins that are easily extractable in aqueous media. The **pH value (4.76 + 0.10)** shows a slightly acidic nature, which is acceptable and suitable for oral administration. Overall, the results demonstrate that *Shatyadi Curṇa* is a well-balanced formulation with appropriate physicochemical properties supportive of its stability and therapeutic potential.

The phytochemical screening of Śatyādi Cūrṇa showed the presence of Carbohydrates, Proteins, Alkaloids, Cardiac glycosides, Flavonoids, Tannins, Anthraquinone glycosides and Triterpenoids which indicates that the formulation is pharmacodynamically rich. Alkaloids, flavonoids and triterpenoids are reported for strong Deepana–Pācana, antioxidant, anti-inflammatory, smooth muscle regulating and gut motility stabilising activities, which directly support the core chikitsā sūtra of Kaphaja Grahaṇi Roga where Agnimāndya and Āma formation are dominant. Tannins and cardiac glycosides help in grahaṇi saṃsthāpana by tightening gut mucosa, reducing excessive secretions and improving tone of the intestinal wall; while carbohydrate and protein fractions support Dhātu-vardhana and restoration of depleted bio-energy after chronic mal absorption. Anthraquinone glycosides contribute to mild Srotoshodhana effect by ensuring proper colon cleansing without irritation. Collectively, these phytochemical constituents justify the classical claims that Śatyādi Cūrṇa acts as Deepana, Pācana, Grahaṇi Saṃsthāpana, Srotoshodhana, Śophahara and Rasāyana; hence effectively corrects the Samprapti of Kaphaja Grahaṇi Roga by improving Agni, reducing Kapha–Āma load and normalising intestinal function.

The TLC profiling of Śatyādi Cūrṇa under long UV showed multiple bands distributed throughout the Rf range (0.04 to 0.74) with predominant fluorescent green zones. Presence of several distinct spots at Rf 0.15, 0.22, 0.35, 0.56, 0.65 and 0.74 suggests that Shatyadi Churna contains a wide spectrum of phytoconstituents with varying polarity — which signifies a poly-herbal synergy. The predominance of fluorescent green bands indicates rich flavonoid fraction and related phenolic compounds, while the brownish-blue low Rf band around 0.04 indicates the presence of heavier / less mobile phytocompounds like tannins. Such multi-component profile supports the combined Deepana, Pachana and Srotoshodhana potential of the formulation. In the context of Kaphaja Grahani Roga — where Kapha + Ama leads to mandagni, impaired digestion and malabsorption — this kind of diversified phytochemistry helps to simultaneously kindle Agni, reduce Ama, control excessive Kapha and stabilise intestinal function. Therefore, the observed TLC pattern provides scientific support to the classical claim that Śatyādi Cūrṇa acts as a multi-target formulation correcting Agni dushti and Grahani dushti in Kaphaja Grahani.

Proper standardization ensures batch-to-batch uniformity, enhances shelf life, and provides a scientific foundation for traditional formulations. Hence, pharmaceutical evaluation is an indispensable step before clinical or pharmacological studies.

CONCLUSION

The Śatyādi Cūrṇa prepared as per classical guidelines and evaluated on modern pharmaceutical parameters fulfils the essential qualitative standards required for safe and effective Ayurvedic formulations. The analysis confirms that the formulation has

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acceptable physicochemical characteristics along with significant phytochemical constituents which directly support its classical claims in the management of Kaphaja Grahaṇi Roga. The presence of multi-dimensional phyto-markers indicates strong Deepana, Pācana, Grahaṇi Saṃsthāpana and Srotoshodhana potential which can help in correcting Agnimāndya, reducing Kapha-dominance and breaking the Ama-pathology. Further advanced analytical and pharmacological studies can strengthen the scientific evidence and establish wider therapeutic applicability of Śatyādi Cūrṇa in Grahaṇi spectrum disorders.

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