SJIF Impact Factor (2025): 8.688| ISI I.F. Value: 1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 10 | Issue: 6 | June 2025 - Peer Reviewed Journal

FORMULATION AND EVALUATION OF HERBAL CHURNA FOR DIGESTIVE PROPERTY

Mr. Santosh R. Dhakane[1], Mr.Pramod P.Mapari[2], Mr.Shubham G.Doifode[3], Dr.Sunil S.Jaybhaye[4], Mr. Vikas S. Dongre[5]

[1]Student of Institute of Pharmacy, Badnapur, Jalna.
[2]Deparment of Pharmaceutical Science Institute of Pharmacy, Badnapur,Jalna
[3]Deparment of Pharmaceutical Science Institute of Pharmacy, Badnapur,Jalna
[4]Principal of Institute of Pharmacy, Badnapur, Jalna
[5]Student of Institute of Pharmacy, Badnapur, Jalna.

ABSTRACT

Herbal Churna is a time-honored Ayurvedic formulation composed of finely powdered medicinal herbs and natural ingredients. It plays a significant role in traditional medicine, offering therapeutic solutions for a wide range of ailments, from digestive disorders to immune enhancement. Known for its versatility, herbal Churna can be consumed directly, mixed with other substances, or applied externally, making it a preferred choice in holistic healing practices.

The preparation involves careful selection, drying, and grinding of herbs to preserve their medicinal properties. The simplicity of its preparation and administration makes it accessible and affordable for individuals across socio-economic strata. Despite its ancient origins, herbal Churna remains relevant due to its effectiveness, minimal side effects, and adaptability.

However, challenges such as standardization, shelf-life limitations, and taste acceptance require modern scientific intervention. Recent advancements in phytochemistry and pharmacology have begun to validate the efficacy of various herbal churnas, bridging traditional wisdom with contemporary healthcare practices. These abstract highlights the potential of herbal churna as a sustainable, natural alternative to synthetic medications while emphasizing the need for further research and integration into global health systems.

In the last few years, the use of herbal drugs has increased all over the world due to their huge therapeutic effect and fewer adverse effects as compared to other medicines. The rising use of herbal drugs by humans is forcing the driving force to evaluate the health claims of these agents and to develop standards of quality, purity, safety, and efficacy of the drug. Mostly, herbal drugs are effective, but due to adulteration and lack of standardization, the effectiveness of the herbal drug is decreased. So, there is a need for development of standardization parameters. In the standardization of the herbal drug, the physical, chemical, biological, and analytical parameters are carried out. It assures the quality, purity, and safety of herbal drugs.

INTRODUCTION

Churna Herbal and Constipation Churna are both types of powdered herbal formulations used in traditional Indian systems of medicine like Ayurveda.

Definition: Churnas are finely powdered drug. Drugs stated in *Patha* are first cleaned, dried, pulverized, and then sieved. Churnas are stored in air-tight containers to maintain their potency and free-flowing nature for up to a year.

Churna is defined as a fine powder of one or more drugs in the Ayurvedic system of medicine. The drugs mentioned in *Patha* are cleaned properly, dried thoroughly, pulverized, and then sieved. The resulting churna is free-flowing and retains its potency for one year if preserved in an air-tight container. Examples include Triphala Churna**,** Trikatu Churna**,** Drakshadi Churna**, and** Sudarsana Churna.

Churna formulations are similar to powder formulations in the allopathic system of medicine. In recent times, churns have also been formulated into tablets to simplify dosage. These forms of medication are generally prescribed due to their particle size. The smaller the particle size, the greater the absorption rate from the gastrointestinal tract (GIT), and hence the greater the bioavailability.

Churna is prescribed by Ayurvedic physicians for treating conditions such as diabetes**,** indigestion**,** constipation, etc. Indigestion is a common ailment affecting the general population, and in the allopathic system, antacids are commonly prescribed.

The preparation of herbal churna involves finely grinding carefully selected herbs and spices to ensure maximum potency and bioavailability. Each ingredient is chosen based on its unique properties and synergistic effects, resulting in a balanced formulation tailored for specific health conditions such as digestion, immunity, or stress management. Popular varieties include:

SJIF Impact Factor (2025): 8.688| ISI I.F. Value: 1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 10 | Issue: 6 | June 2025 - Peer Reviewed Journal

- **Triphala Churna** – for digestive health
- **Ashwagandha Churna** – for vitality and stress
- **Amla Churna** – for immunity and skin care

Herbal churna is easy to incorporate into daily routines. It can be consumed with water, honey, or milk, depending on the desired effect. Unlike synthetic medications, it carries minimal side effects and promotes natural healing, addressing not just symptoms but the root causes of health issues.

As people increasingly turn toward natural and sustainable healthcare options, herbal churna stands out for its efficacy, affordability, and deep connection to nature. Whether used for therapeutic purposes or as a preventive measure, it serves as a bridge between ancient wisdom and contemporary lifestyles, ensuring health and harmony in everyday life

ADVANTAGES AND DISADVANTAGES

ADVANTAGES

- **Natural Ingredients**: Made from plant-based ingredients, reducing the risk of harmful chemicals.
- **Holistic Benefits**: Often targets multiple health issues simultaneously.
- **Digestive Aid**: Commonly supports digestion and detoxification.
- **Customizable**: Can be tailored for specific health needs.
- **Minimal Side Effects**: Generally safer than synthetic medicines when used correctly.

DISADVANTAGES

- **Lack of Standardization**: Quality and potency can vary across brands.
- **Delayed Effects**: May take longer to show results compared to allopathic medicines.
- **Allergic Reactions**: Some individuals may be sensitive to specific herbs.
- **Improper Usage Risks**: Incorrect dosage or combinations can lead to adverse effects.
- **Limited Scientific Evidence**: Some claims may lack rigorous research backing.

Ayurvedic Approach

Ayurvedic physiology is based on three fundamental humoral elements known as the Doshas, which form the core of all psychosomatic functions and the maintenance of homeostasis.

The three Doshas are:

1. Vata
2. Pitta
3. Kapha

These Doshas govern all anabolic and catabolic processes in the body. Their balance is essential for physical, mental, and emotional health.

Ayurveda is a highly individualized healthcare system. It emphasizes that every person has a unique constitution, called Prakruti, which defines their physical, physiological, and mental characteristics, as well as their vulnerability to disease.

Prakruti is determined by the dominance of one or more of the Doshas. Though everyone possesses all three, typically one or two Doshas dominate in an individual.

The Three Doshas

1. **Vata** – The Energy of Air and Space
   Function: Controls bodily movements such as breathing, circulation, and nerve impulses.
   Characteristics: Creative, energetic, quick-thinking, lively.
   Imbalance Symptoms: Joint pain, dry skin, constipation, anxiety
2. **Pitta** – The Energy of Fire
   Function: Governs digestion, metabolism, and endocrine functions.
   Characteristics: Intelligent, focused, fast-paced, fiery temperament.
   Imbalance Symptoms: Ulcers, inflammation, digestive issues, anger, heartburn, arthritis.
3. **Kapha** – The Energy of Earth and Water
   Function: Provides structure, strength, and stability. Related to growth and immunity.
   Characteristics: Calm, grounded, solid constitution.

SJIF Impact Factor (2025): 8.688| ISI I.F. Value: 1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 10 | Issue: 6 | June 2025 - Peer Reviewed Journal

Imbalance Symptoms: Obesity, diabetes, sinus issues, lethargy, insecurity.

Ayurvedic Treatments and Formulations
Ayurvedic treatment incorporates:
Herbal remedies (from plants)
Animal-derived products
Metals and minerals
Lifestyle practices (diet, exercise, daily routine)
There are two primary categories of Ayurvedic compound formulations:

1. Kasthaushadhi
   - Derived from medicinal plants.
   - Focuses on herbal preparations.
2. Rasaushadhi
   - Involves the use of metals and minerals in combination with herbs.
   - Known as herb-mineral formulations.

Ayurvedic Dosage Form Types
Ayurvedic dosage forms are classified into four forms and their respective subtypes. They are as follows:
Solid Dosage Forms
i. Pills
ii. Gutika
iii. Vatika
Liquid Dosage Forms
i. Asava
ii. Arishta
iii. Taila
iv. Arka
Semi-Solid Dosage Forms
i. Avaleha
ii. Lepa
Powder Dosage Forms
i. Churna
ii. Bhasma
iii. Satva
Some Ayurvedic herbs may produce side effects or interact with conventional medications.

Churna
Churna is a Sanskrit term that refers to a type of Ayurvedic medicine that is made from a mixture of dried and powdered herbs, spices, and other natural ingredients. The term "Churna" literally means "powder" in Sanskrit Churna is a traditional Ayurvedic formulation that has been used for centuries to promote health and wellness. It is a versatile form of medicine that can be used to treat a variety of health conditions, including:

- Digestive issues
- Respiratory problems
- Skin conditions
- Stress and anxiety

The benefits of Churna include

- Easy to prepare and administer
- Can be customized to individual needs and health conditions
- Can be used in combination with other Ayurvedic remedies
- Natural and holistic approach to health and wellness

SJIF Impact Factor (2025): 8.688| ISI I.F. Value: 1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 10 | Issue: 6 | June 2025 - Peer Reviewed Journal

Churna can be prepared in various ways, including:

- Mixing powdered ingredients with water or other liquids to create a paste or decoction
- Taking the powder orally with water or other liquids
- Using the powder as a topical application for skin conditions

Some common examples of Churna include:

- Triphala Churna
- Hingvashtak Churna
- Panchakarma Churna
- Nityam Churna
- Kayam Churna

It is important to note that Churna should only be prepared and administered by a qualified Ayurvedic practitioner, as the preparation process involves specific techniques and methods to ensure the potency and efficacy of the final product.

Bhasma

Bhasma is a Sanskrit term referring to a type of Ayurvedic medicine made by purifying and calcining (burning at high temperatures) metals, minerals, or animal products to create a potent, ash-like powder. The preparation involves heating ingredients to extremely high temperatures (usually between 500–1000°C) to ensure detoxification and transformation into a bioavailable form.

Uses of Bhasma:

Bhasma is used to treat a variety of health conditions including Chronic diseases, Degenerative diseases , Autoimmune disorders , Inflammatory conditions

Benefits of Bhasma:

Fast-acting and potent
Easy to absorb and digest
Versatile in treating different health issues
Can be used in combination with other Ayurvedic remedies

Common Types of Bhasma:

Swarna Bhasma (Gold Ash)
Rajata Bhasma (Silver Ash)
Tamra Bhasma (Copper Ash)
Loha Bhasma (Iron Ash)
Abhrak Bhasma (Mica Ash)

- Note: Bhasma should only be prepared and administered by a qualified Ayurvedic practitioner, as improper preparation can be dangerous due to the high temperatures and complex processes involved.

Satva

Satva (also spelled Sattva) is a Sanskrit term used in Ayurveda to refer to the essence or pure extract of a plant or herb. It is a concentrated and potent form of the ingredient, obtained through traditional Ayurvedic extraction techniques.

Uses of Satva

Satva is used to address conditions such as:
Respiratory problems
Skin conditions
Stress and anxiety
Immune system support

Benefits of Satva

Highly concentrated and potent
Easy to absorb and digest

Uses in Ayurvedic Treatment

Satva is often used to:
Enhance the bioavailability of herbs
Increase the efficacy of treatments
Provide a natural and holistic approach to wellness

SJIF Impact Factor (2025): 8.688| ISI I.F. Value: 1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 10 | Issue: 6 | June 2025 - Peer Reviewed Journal

Common Examples of Satva:
Ashwagandha Satva
Brahmi Satva
Guduchi Satva
Turmeric Satva
Ginger Satva

- Note: Like Bhasma, Satva should be prepared and administered only under the supervision of a qualified Ayurvedic practitioner to ensure safety, potency, and effectiveness.

Commercial Constipation Churnas in the Market

1. **Kayam Churna**

Type: Herbal Churna
Ingredients: Senna Leaves, Mulethi (Licorice), Ajwain (Carom Seeds), Black Salt,Nishoth,Haritaki,Svarjikshara



Benefits
Helps treat constipation
Effective for acidity linked with constipation
Prevents bloating and flatulence
Helps cure ulcers

2. **Hingvashtak Churna**

Type: Herbal Churna
Ingredients: Jeera (Cumin), Hing (Asafetida),Ginger, Long Pepper (Pippali),Fennel (Saunf),Sendha Namak (Rock Salt)



Benefits

- Provides relief from gas and bloating
- Helps in constipation relief
- Reduces stomach discomfort

SJIF Impact Factor (2025): 8.688| ISI I.F. Value: 1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 10 | Issue: 6 | June 2025 - Peer Reviewed Journal

3. **Nityam Churna**

Type: Herbal Churna
Ingredients: Triphala (Three Fruits: Amla, Haritaki, Bibhitaka),Yastimadhu (Licorice),Swarnapatri (Senna),Fennel Seeds



Benefits:

- Regulates healthy digestion
- Cleanses intestinal walls
- Soothes internal lining of the intestine
- Prevents and cures gastric problems
- Strengthens muscular movement of the intestines

4. **Triphala Churna**

Type: Herbal Churna
Ingredients: Haritaki, Bibhitaki,Amla



Benefits

- Helpful in indigestion and constipation
- Boosts digestion
- Reduces gastric discomfort
- Naturally improves bowel movement

LITERATURE REVIEW

- **Patel et al. (2019):**
  The formulation and evaluation of herbal churna for constipation involves a multidimensional approach encompassing botanical, pharmacological, and formulation aspects.
- **Gupta et al. (2020):**
  Investigated the efficacy of a churna containing Triphala, Senna, and Psyllium husk in promoting bowel movements and relieving constipation symptoms.
- **Sharma et al. (2018):**
  The formulation and evaluation of herbal churna for constipation have garnered significant attention in recent years due to the growing interest in natural remedies and the need for effective and safe alternatives to conventional laxatives.
- **Samantha M. K. et al. (2000):**
  Natural products have been a source of inspiration for drug discovery and development. Herbal drugs are gaining popularity due to their perceived safety and efficacy. The study emphasizes the need for scientific validation of traditional medicinal

SJIF Impact Factor (2025): 8.688| ISI I.F. Value: 1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 10 | Issue: 6 | June 2025 - Peer Reviewed Journal

plants to ensure their safety and efficacy. Techniques such as chromatography and spectroscopy are used to analyze and standardize herbal drugs. The authors discuss aspects of natural product development, including extraction, isolation, and characterization of bioactive compounds.

- **Sagar Bhanu P. S. et al. (2005):**
  The authors highlight the need for standardization in herbal drug development to ensure quality, safety, and efficacy. Parameters involved in standardization include botanical identification, phytochemical analysis, and pharmacological evaluation.
- **Ramya Kuber et al. (2017):**
  This study focused on the preparation of ethanolic extracts of individual ingredients in the Shatavaryadi Churna formulation. Both marketed and house-made formulations were evaluated using organoleptic properties, preliminary phytochemical analysis, extractive values, ash values, moisture content, bulk density, tap density, Carr's index, Hausner's ratio, angle of repose, and in vitro antimicrobial activity.
- **Mr. Gunji Venkateswarlu et al. (2019):**
  In recent years, there has been rapid growth in the field of herbal medicine. Most traditional systems of medicine are widely accepted only after proper standardization. The study emphasizes the importance of developing essential techniques for the standardization of herbal drugs.

MATERIAL AND METHODS

Fennel (Foeniculum vulgare)



Figno.1Fenne

Fennel (Foeniculum vulgare)
Synonyms: Saunf
Biological Source: Fennel (*Foeniculum vulgare*), a perennial herb of the carrot family.
Family: Apiaceae
Chemical Constituents: Fennel contains volatile oil (1–4%), fixed oil (9–12%), and proteins (20%).
Uses: Fennel is used for various digestive problems including heartburn, intestinal gas, bloating, loss of appetite, and colic in infants.

Mulethi (Licorice)



SJIF Impact Factor (2025): 8.688| ISI I.F. Value: 1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 10 | Issue: 6 | June 2025 - Peer Reviewed Journal

Family: Fabaceae
Biological Source: Licorice (*Glycyrrhiza glabra*)
Synonyms: Yashtimadhu
Chemical Constituents: Glycyrrhizin (glycyrrhizic acid), glucuronic acid
Sugars: Glucose, mannitol
Other Constituents: Resin, volatile oils, starch
Uses:

- Maintains mucosal health of the digestive tract
- Relieves constipation
- Prevents gastric and peptic ulcers

Triphala(ThreeFruits)



Triphala (Three Fruits)
Family: Euphorbiaceae
Synonyms: Vara, Phalatrikam
Biological Source

- Emblica officinalis (Indian gooseberry)
- Terminalia belerica (Belleric myrobalan)
- Terminalia chebula (Chebulic myrobalan)

Chemical Constituents
Gallic acid, ellagic acid, ethyl gallate, galloyl glucose, and chebulagic acid.
Uses:

- Analgesic
- Antibacterial
- Anti-arthritic
- Hypoglycemic
- Anti-aging
- Antiviral
- Helps with headache, dyspepsia, and fatigue

Ajwain (Carom Seed)



Family: Umbelliferae (Apiaceae)
Synonyms: Ajwain, Caraway, Thymol Seed
Biological Source:Dried fruits (seeds) of Trachyspermum ammi
Origin: Eastern regions of Persia and India

SJIF Impact Factor (2025): 8.688| ISI I.F. Value: 1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 10 | Issue: 6 | June 2025 - Peer Reviewed Journal

Chemical Constituents:Thymol (35–60%),γ-Terpinene**,**p-Cymene**,**α- and β-Pinene**,**Carvacrol (in smaller amounts)

Uses:

- Digestive Health
- Improves Provides Relief from Cough and Constipation
- Fights Bacteria and Infections
- Has Anti-Inflammatory Effects
- Soothes Earaches and Toothaches

Kalana Namak (Black Salt)



Biological Source: Naturally occurring mineral salt obtained from **salt mines**, especially in the Himalayan regions.

Synonyms: Himalayan Black Salt, Indian Black Salt

Chemical Constituents: Sodium Sulphate (Na_2SO_4)**,**Sodium Bisulphite ($NaHSO_3$)**,**Sodium Sulphide (Na_2S)**,**Iron Sulphide (FeS)**,**Hydrogen Sulphide (H_2S) – gives it the characteristic pungent smell

Uses

- Good for eyesight
- Improves taste of food and digestion
- Helps relieve constipation
- Beneficial in arthritis – may help reduce inflammation
- Promotes overall health – used traditionally in Ayurvedic and Unani Medicine

Fenugreek(TrigonelaFoenum)



Family: Fabaceae

Synonyms: Alhalva, Chandrika, Fenugreek

Biological Source

Dried seeds of Trigonella foenum-graecum.

Chemical Constituents: Alkaloids, Amino acids,Saponins,Steroidal flavonoids

Uses

- Acts as a mild bulk-forming laxative; suitable for long-term use in individuals with chronic constipation.
- Has a soothing effect on the digestive system.
- Traditionally used to aid digestion, reduce inflammation, and manage blood sugar levels.

SJIF Impact Factor (2025): 8.688| ISI I.F. Value: 1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 10 | Issue: 6 | June 2025 - Peer Reviewed Journal

Preparation and Evaluation of Herbal Churna

1. Collection of Herbal Drugs

The ingredients used in the churna preparation—Fennel, Mulethi, Triphala, Ajwain, Kala Namak, Flaxseed, and Fenugreek—were either purchased from the market or sourced from the laboratory. All raw herbal ingredients were dried and powdered using a mixer.

2. Formulation Table for Herbal Churna

Formulation Table for Herbal Churna (with Synonyms)

Sr. No	Ayurvedic Name	English Name	Synonym	Quantity
1	Fennel	Fennel	Saunf	5 gm
2	Mulethi	Licorice	Yashtimadhu	5 gm
3	Triphala	Three Fruits	Amla, Baheda, Harad	2 gm
4	Ajwain	Carom Seeds	Omama, Ugragandha	2 gm
5	Kala Namik	Black Salt	Sulemani Namak, Bit Lobon	2 gm
6	Flaxseed	Linseed	Alsi	2 gm
7	Fenugreek	Fenugreek	Methi	2 gm

3. Method used in preparation of Churna

Drying: All the powders are in dry form, grinded.
Size reduction: The crude ingredients were collected and these ingredients were size-reduced using driven mixer individually.
Weighing: Next, a work weight out of the ingredients for the batch. For some ingredients, only a small amount is necessary in the batch but if a very large batch is being made, then several ingredients are needed in large amounts.
Mixing: In a formula in which no pre-mixing is required, after checking and weighing the ingredients, they are simply mixed. The ingredients are completely mixed with each other.
Filling:
The finished batch of Churna product is formed, placed in the filling area. Then the measured amount of Churna is weighed using balance.
Packaging:
From the filling area, the plastic container is sent to the packaging line. The packaging is completed and the labelling with product details is done. Then the products are taken to the warehouse to await distribution.

Procedure

All the powders are in dry form and grinded.
↓
Accurately weigh all the powder ingredients.
↓
Such as Fennel, Mulethi, Triphala, Ajwain, Black Salt, Flaxseed, Fenugreek, powders are mixed together on large paper.
↓
Then the fine powder is passed through sieve no. 85
↓
Then all the ingredient powder mixture is mixed using a spatula
↓
Filled in a suitable container

4. Evaluation Parameters of Herbal Churna

a) Organoleptic Evaluation

Test	Observation
Colour	Greenish Brown
Odour	Pungent
Taste	Salty
Abrasiveness	Good
Spreadability	Good
Texture	Smooth, Fine
Appearance	Powder
Formability	Good
Stability	Stable

SJIF Impact Factor (2025): 8.688| ISI I.F. Value: 1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 10 | Issue: 6 | June 2025 - Peer Reviewed Journal

b) Physicochemical Evaluation

1. **pH:**
   Formulated herbal Churna/powder is evaluated by taking five grams of Churna/powder placed in 100 ml beaker. Add 10 ml of boiled and cooled water. Stir fast to make a suspension and measure the pH.

Moisture Control

4 gm of formulated churna is placed in a porcelain dish containing 6.8 cm in diameter and 2.4 cm depth. Then place the sample in a hot air oven for drying at 100°C for five minutes.

c) Rheological Evaluation

1. **Flow Property**
   The final powder was taken and fixed with a clamp. Then graph paper was kept below the funnel and the height between graph paper and the bottom of the funnel was measured. Then 50 gm of powder was weighed and placed in the funnel, allowing it to flow, and the flow property was measured.
2. **Bulk Density**
   20 gm of powder was accurately weighed and carefully introduced into a 100 ml graduated (1 ml) measuring cylinder. The cylinder was dropped at two-second intervals onto a hard surface three times. Volume of powder was noted and the bulk density in g/ml was calculated.
3. **Tapped Density**
   20 gm of powder was accurately weighed and carefully introduced into a 100 ml graduated (1 ml) measuring cylinder. The cylinder was fitted on a base with a height of about four inches. Tapping continued until no further volume change occurred.

CONCLUSION

Herbal Churna is a powdered formulation composed of medicinal herbs traditionally used in Ayurveda and other indigenous systems of medicine. It is valued for its **holistic approach to health**, offering both **preventive** and **curative** benefits. Herbal churna formulations are highly versatile and can be targeted to address a variety of health concerns, including **digestive issues**, **immune support**, and **detoxification**.

The effectiveness of a churna largely depends on the **quality of raw materials**, **accurate dosage**, and **proper preparation techniques**. Although generally considered safe, it is essential to **consult a healthcare professional** before use—especially for chronic conditions or when taken alongside other medications.

In this study, the prepared churna formulation was specifically aimed at treating **constipation**. The herbal ingredients, such as **fennel**, were found to work synergistically to **stimulate bowel movement** and **relieve constipation** effectively. While the formulation showed **poor flowability** in rheological evaluations, it demonstrated **good mechanical strength** and **stability**, indicating its **therapeutic potential** as an effective herbal remedy.

REFERENCES

1. *G. Arunachalam, Dr. V.E. Ida Christi, Dr. Prashant Kumar. Textbook of Herbal Drug Technology. 2019–2020, Section 3.2.5: p. 68.*
2. *Mr. Jaydeep V. Satre, Prof. Suryawanshi R.K., Bhushan B. Wagh, Vishal C. Waghchaure.*
3. *Samantha M.K., Pulok K. Mukherjee. "Development of Natural Products." The Eastern Pharmacist, 2000, 43: 23–24.*
4. *Plotz P.H., Rifai A. J. Biochem, 1982, 21: 301–308.*
5. *Muhammed Nabel, Anwarul Hussan, Gilam. "Pharmacological Basis of Medicinal Uses of Ginger in Gastrointestinal Disorders." J. Anaesth, 2000, 84: 367–371.*
6. *Kalpana Patel, Alkananda Rao. "Digestive Stimulant Action of Indian Spice Mixes in Experimental Rats." J. Digestive Diseases and Sciences, 2005, 50: 1880–1887.*
7. *Indian Herbal Pharmacoepia. Indian Drug Manufacturers Association, 1998, Vol. 1: A13–20.*
8. *Singh G., Maurya S., Delampasona M.P., Catalan C.A. "A Comparison of Chemical, Antioxidant and Antimicrobial Studies of Cinnamon Bark and Leaf." Food Chemistry & Toxicology, 2007, 55: 1173–1183.*
9. *Mimica-Dukić N., Kujundžić S., Soković M., Couladis M. "Essential Oil Composition and Antifungal Activity of Foeniculum vulgare Obtained by Distillation Conditions." Phytotherapy Research, 2003, 17: 368–371.*
10. *Oussalah M., Caillet S., Lacroix M. "Mechanism of Action of Spanish and Chinese Cinnamon and Essential Oil Against Cell Membranes and Walls of E. coli." J. Food Products, 2006, 69: 1046–1055.*
11. *Kokate C.K., Purohit A.P., Gokhale S.B. Textbook of Pharmacognosy, 2002, 13: 550–559.*
12. *Shan B., Cai Y.Z., Sun M. "Antioxidant Capacity of 26 Spice Extracts and Characterization of Phenolic Constituents." J. Agriculture and Food Chemistry, 2005, 53: 7749–7750.*
13. *Rama Sharma G.V.S., Sadhan K., Dutta. Ancient Science of Life, 1955, 15: 119–120.*
14. *Folin O., Ciocalteau V. "Tyrosine and Tryptophan Content in Proteins." J. Biochem, 1927, 1: 627–640.*

SJIF Impact Factor (2025): 8.688| ISI I.F. Value: 1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 10 | Issue: 6 | June 2025 - Peer Reviewed Journal

15. *Indian Pharmacopoeia. Controller of Publications, 1966, Vol. 1: 514–517.*
16. *Indian Pharmacopoeia. Controller of Publications, 1996, Vol. 2: A138–143.*
17. *Nadkarni A.K. Indian Materia Medica. Popular Prakashan, 1976, Vol. 1: 800–806.*
18. *Harold Varley. Practical Clinical Biochemistry. CBS Publishers, 1988, 4: 24*