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(REVIEW ARTICLE)

A comprehensive review of Churna as an ayurvedic formulation

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Abstract

Ayurveda is an oldest system of medical system that originated in India. It is based on the idea of keeping the body, mind, and soul in balance with the Universe. This balance is maintained by three main energies called doshas (Vata, Pitta, and Kapha). These doshas are made from the natural five elements- space, air, fire, water, and earth.

According to the Ayurvedic system of medicine, churna is defined as "a fine powder of one or more drugs". Churna formulation is similar to powder formulations in the allopathic system of medicines. These forms of medication are generally prescribed because of the particle size. The smaller the particle size of churna, the better the effect on the body. Churna is classified into two main types: simple churna and compounded churna. Simple churna is prepared from a single herbal ingredient (eg, Triphala churna prepared from a single herb), while compounded churna is prepared from several herbal ingredients (eg, Chaturjat churna prepared from many herbs). This review main goals to present a comprehensive overview of churna - its historical background, Classification, Preparation technique, Therapeutic uses, and standardisation parameters. Churna or Ayurvedic herbal powders play a Vital role in supporting overall health by primarily aiding digestion and detoxification. There are many varieties of churna, and every churna has its benefits. It is a very effective and ancient form of Ayurvedic medicine.

Keywords: Churna; Ayurveda; Tri-Dosha; Formulation; Herbal Medicine; Standardization

1. Introduction

1.1. Ayurveda

1.1.1. Definition of Ayurveda

The terms "Ayur" (life) and "Veda" (sciences) are combined to form the term "AYURVEDA." Thus, we must be familiar with both Ayurveda.

1.1.2. Ayur

For thousands of years, Ayurveda has explained every aspect of a healthy life, including mental, physical, and anatomical aspects. Our goal is to lead a healthy life.

1.1.3. Veda

Veda means "sciences" and serves as a complete guide to understanding the right approach. The body is formed with the five Panchamahabhutas, whose combination leads to Tridosha. Through this system, one learns how to achieve good

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health and well-being.[1] Ayurveda is considered the oldest traditional medical system, with roots in India that go back more than 5,000 years. Ayurveda is a Sanskrit term that translates to the science of life. This system began in the ancient Vedic culture and was passed down orally from teachers to students for generations. Ayurveda is thoroughly explained in two significant manuscripts, the Charaka Samhita and the Sushruta Samhita. The Sushruta Samhita describes surgical procedures, but the Charaka Samhita covers every facet of Ayurvedic medicine. Both manuscripts are still utilised by practitioners of traditional medicine today. [2–3]

Ayurveda works on the following five basic principles:

- Vayu [Air]
- Jala [Water]
- Akash [Space or ether]
- Prithvi [Earth]
- Teja [Fire]

1.2. Basis Concept for Ayurvedic Philosophy

1.2.1. Concept of tri-dosha

This theory states that the human body contains the five fundamental elements (Pancha Mahabhuta) in three distinct forms, which collectively are referred to as "Tridosha." These are:

- Vata (Space Air).
- Pitta (Fire+ Liquid).
- Kapha (Liquid + Solid).

Any imbalance in tridosha is regarded as a disease condition; when these tridoshas are present in the body in a balanced form, they are considered healthy. Ayurveda helps to balancing the body component. [6]

1.2.2. Concept of Panchkarma Treatment

Panchakarma is an ancient method for detoxification and purification. It includes "five therapies" in Sanskrit, reflecting its comprehensive approach to removing impurities and restoring balance. The five therapies are Vamana, Virechana, Nasya, Basti, and Raktamoskshana. [4]

1.2.3. Classification of Ayurvedic Dosage Form

Ayurvedic dosage forms have been developed using the concepts found in ancient literature such as the Charaka Samhita and Sushruta Samhita. However, these formulations need to be reexamined in light of modern drug delivery technologies and quality assurance, given the developments in pharmaceutical sciences. Many Ayurvedic products, like Bhasma and Kupipakva Rasayana, need to be tested to make sure they are safe and effective. [5]

Ayurvedic formulations are classified into the following three types-

- Solid Forms
    - Eg- Churna, Vatika, Nasya.
- Liquid Forms
    - Eg- Swarsa, Asava- Arista.
- Semi-solid Forms
    - Eg- Lepa, Paka, Kalka.

1.2.4. Churna

Churna is a finely powdered blend of medicinal herbs, prepared by cleaning, drying, grinding, and sieving the ingredients. When stored in an airtight container, churna remains effective for up to a year. Common examples include Sud-harsana churna, Drakeshadi churna, Trikatu churna, and Triphala churna. In modern practice, churna is sometimes processed into tablets for more accurate dosing. [7] Ayurvedic churna may be made from various plant parts, such as roots, stems, or entire plants. Compound formulations can also include ingredients from animal, mineral, and plant sources, with 21 recognized types. [8] Sarpagandha root churna has used for the central nervous system disorders, including hypertension, due to its content of anti-hypertensive alkaloids, primarily reserpine. [9]

[https://share.google/XWKlKcPSVu3KJUhyG]

Figure 1 Chruna formulation Powdered

The churna also facilitates healthy digestion, metabolism, and detoxification. Agni imbalances, on the other hand, can result in the buildup of toxins and digestive issues. One of the many Ayurvedic treatments for promoting gut health, balancing the body, and aiding in digestion is churna, a powdered herbal blend.[10] Madhumeha churna can also be used to treat diabetes mellitus. [11]

1.3. History of Chruna formulation

The word "trem churna" refers to fine powder. Utilized since the Vedic era, it is the most ancient type of Ayurvedic medication.

- Vedic and Samhita Period (1500 BCE-200 CE).
- Post-Samhita and Classical Period (200CE-1400 CE).
- Medieval Period (500–1500 CE).
- Modern Ayurvedic Literature (19th–20th Century). [12]

1.3.1. Types of Churna

These are the medication's solid dosage forms intended for internal consumption. These are the different kinds of churna.

- Simple Churna: It only contains one medication.
    - Example- Triphala Churna, Ekaushadha Churna.
- Compounded Churna: It contains multiple medications.
    - Example- Chaturjat Churna, Mishra Churna. [2-13]

1.3.2. Advantages

- Since more chemical reactions occur in the liquid dosage form, churna is more stable than the liquid dosage form.
- Easier to absorb and digest than other solid dosage forms, such as tablets, capsules, etc.
- As a result, action will start early.

1.3.3. Disadvantages:

- The greater the surface area of the drug exposed. The likelihood of oxidation and hydrolysis will increase.
- It is not possible to dispense bitter or unpalatable medications in powder form. [13]

1.3.4. Characteristics and preservation

- The powder is fine enough to pass through at least 80 mesh screens.
- It passes through a 355mm IS sieve and not less than 50% through a 180 mm IS sieve.
- It shouldn't get wet or stick together.
- They retain potency for one year. It should be kept in airtight containers. [14]

1.3.5. Application of Churna

According to different Ayurvedic texts, the Churna dosage forms have several uses, such as -

- Churna is applied externally for Lepana in wounds and skin conditions, Avadhulana (sprinkling), and Prasaran (rubbing teeth and gums with the finger).
- In the Ayurvedic medical system, it is a primary medication used to treat a variety of illnesses, such as Shankhpushpi Kalka, Rasayan Churna, Bhallataka Churna, and Talisadi Churna.
- Churnas, such as Abhrak Bhasma with Talisadi Churna and Suvarna Bhasma with Trikatu Churna, can be used as adjuvants.
- Vati, Avaleha, Arka, Kashaya, Hima, Phanta, Snehas, and so on are prepared using churnas. [14]

1.3.6. Available Formulation of Churna

Table 1 Available Formulation of Churna

Sr.No	Formulation	Ingredients	Uses
1	Triphala churna	Amalaki-100g, Haritaki-100g, Vibhitaki-100g.	Laxatives, improve digestion, and antioxidants.
2	Vidanga churna	Vidanga-500 g.	Used in GERD, constipation, and Peptic Ulcer.
3	Trikatu churna	Shunti-100g, Pippali-100g, Maricha-100g.	It's also used in digestion.
4	Trijataka churna	Twak - 200g, Ela- 200 g, Patra- 200g.	Asthma, Cold, and Cough.
5	Chanaka churna	Chanaka–300 g	Skin diseases and Digestive disorders.

[Hema T, Sridurga CH. Pharmaceutical standardization of Shaptala Gandhaka Churna. Int J Ayurveda Pharma Res. [Internet]. 2025 [cited 2025 Nov 6];:5-6. ISSN: 2322-0902 (P).]

1.4. Methods of Preparation of Churna

The medication used is cleansed, dried, ground into a fine powder, and sieved. For a large number of drugs, each one is powdered, sieved, and weighed separately before the final powder is combined. All medications are cleaned, dried, and ground into powder in disintegrators before being filtered through mechanical sifters for large-scale manufacturing. Make sure the powder is fine enough to fit through an 80-mesh screen. The powder particles shouldn't stick together or get wet. Fine powder has a relatively higher therapeutic efficacy [16].

1.4.1. Herbal plants used in churna formulation

Table 2 Plants used in churna with chemical constituents and uses

Sr.no	Plant Name	Chemical constituents	Uses
1	Haritaki (Terminalia chebula)	Tannins, Polyphenols, and Flavonoids.	Improves digestion, Relieves constipation, Detoxifies the body, Enhances immunity.
2	Amalaki (Emblica officinalis/ Amla)	Vitamin C, Minerals, Gallic acid, Tannins, Quercetin.	Rich in Vitamin C, Acts as an antioxidant, Boots immunity, Improve eyesight, Good for hair and skin.
3	Bibhitaki (Terminalia bellerica)	Tannins, Gallic acids, Ellagic acid, and other bioactive compounds.	Useful in respiratory disorders, Balance kapha dosha, Improve digestion.
4	Gokshura (Tribulus terrestris)	Alkaloids, Terriestrosin, Flavonoid glycosides, Furostanol, and Steroidal saponin.	Improve urinary health, Acts as a diuretic, Enhances stamina and reproductive health.
5	Ashwagandha (Withania somnifera)	Alkaloids, Steroidal lactone, Saponins	Reduces stress, Improves strength, Boosts immunity.
6	Neem (Azadirachta indica)	Azadirachtin, Nimbin, Nimbidin, and Quercetin.	Boold purifier, Useful in skin diseases, Anti-microbial, Reduces acne and infections.
7	Shatavari (Asparagus racemosus)	Isoflavones, Alkaloids, Shatavarins, and Steroidal saponins.	Promotes women`s health Balances hormones, Improve fertility.

[Marathe H, More H, Nikam H, Suryawanshi CP, Wagh RD. Development and evaluation of herbal churna: a natural approach to digestive wellness. Int J Pharmacol Clin Res. 2025;7(1):108.]

2. Evaluation Parameter of Churna

The following parameters are of the evaluation-

2.1. Organoleptic evaluation

Organoleptic evaluation is the study of crude drugs through the use of the sense organs. Color, smell, taste, size, and shape are all analyzed.

Table 3 Organoleptic characteristics of churna

1. Colour	Brownish
2. Odour	Astringents
3. Taste	Aromatic

2.2. Physical evaluation

2.2.1. Determination of Flow properties

Bulk Density

This is the mass of a specific powder divided by the volume of the bulk. A funnel is used to transfer a precisely weighed quantity of powder sample into a graduated cylinder for measurements. The first volume was recorded. The ratio of weight to volume consumed was computed.

$$Bulk\ Density\ =\ Mass\ of\ powder \backslash Total\ Volume\ of\ powder.$$

Tapped Density

A graduated cylinder containing a known quantity of powder (25 g) is tapped a predetermined number of times to determine the measurement. The first volume was recorded. For ten to fifteen minutes, the graduated cylinder was continuously tapped.

$$The\ density\ can\ be\ calculated\ as\ Tapped\ volume\ =\ Mass\ of\ the\ Powder/\ Volume\ of\ tapped$$

Carr's index

The powder tends to compact. The following formula can be used to calculate a powder's percentage compressibility based on its apparent bulk density and tapped density.

$$\text{Carr`s index}\ =\ \frac{\text{Tapped density}\ -\ \text{Bulk density}}{Tapped\ density} \times 100$$

Hausner Ratio

It displays the powder's flow characteristics. The Hausner ratio is the ratio of the tapped density to the bulk density of the powder.

$$Hausner\ ratio\ =\ \frac{Tapped\ density}{Bulk\ density}$$

Angle of Repose

The internal angle created by the powder pile's surface and the horizontal plane is known as the angle of repose. Pour the powder through a funnel attached to a 4 cm high burette. Graph paper is on the table underneath the funnel. The top and radius of the pile had been measured. The angle of repose of the powder was calculated using the following formula.

$\theta\ =\ tan-{}^{1}h/r$ is the angle of repose,

Where r is the pile's radius and h is its height. [17]

2.3. Determination of Physicochemical properties

2.3.1. Determination of foreign organic matter

250 g, or the amount indicated in the original sample's individual monograph, should be precisely weighed and dispersed in a thin layer. The foreign organic matter must be manually separated as thoroughly as possible and weighed after the samples have been examined with the naked eye or with the aid of a magnifying lens (6X or 10X). Weighing and comparing the percentage of foreign organic matter to the weight of the drug taken is necessary. [18]

2.3.2. Determination of total ash

The residue remaining after incineration is the ash content of drugs, which represents inorganic salts naturally occurring in drugs or added to them as a form of adulteration. It is used to detect contamination and adulteration, like sand or earth, or unwanted parts mixed in crude oil.

Type: Total ash, Physiological ash, non-physiological ash, Carbonated ash, Sulphated ash, Nitrate ash, Acid soluble, and Water-soluble ash.

2.3.3. Total ash

Place about 2-4 g of grounded material (as mentioned in the monograph of the drug) in the crucible and ignite it until it is white.

2.3.4. Acid insoluble ash

Residue left over after the entire amount of ash was extracted and treated with hydrochloric acid (HCL). Use to find out if soil or sand is contaminated. After five minutes of boiling ash with 25 milliliters of 2M HCL, gather the residue on ashless filter paper, rinse with hot water, ignite, let cool in desiccators, and weigh.

2.3.5. Water-soluble ash

The portion of the total ash content that dissolves in water is known as water-soluble ash. It is a reliable indicator of either improper preparation or prior extraction of the drug's water-soluble salt. In 25 milliliters of distilled water, bring the entire amount of ash to a boil for five minutes. The insoluble residue should be gathered on ashless filter paper, cleaned with hot water, ignited, cooled in desiccators, and weighed. The value of water-soluble ash is obtained by subtracting the weight of insoluble matter from the weight of total ash. [19]

2.3.6. Loss on Drying

After being precisely weighed, 2g of the churna was put into a watch glass that had already been weighed. 8. This was dried for five hours at 105°C, with weight checks at each stage.

The final loss in weight was calculated by

$$\text{LOD (\%)} = \frac{\text{Initial weight} - \text{Final weight}}{Final\ Weight} \times 100$$

2.3.7. Determination of pH

Using a pH meter determine the pH of churna. It dispersing 1% and 10% w/v churna in water.

2.3.8. Crude Fibre Content

50ml of 10% nitric acid was added along with 2g of the churna wad. After boiling, this was filtered. 50ml of a 2.5% v/v sodium hydroxide solution was added after the retentates had been cleaned with hot water. After filtering it once more and washing it with hot water, the residue was put in a crucible. To find out how much crude fiber was in the churna, the residue's weight was measured. [20]

2.3.9. Extractive Value

Alcohol Soluble Extractive Value

After adding 5g of churna and 100ml of alcohol, the mixture was shaken occasionally for 24 hours before being set aside after the first six. After that, it was filtered. Until a consistent weight was achieved, the filtrate was evaporated. Alcohol soluble extractive value is determined by the weight difference.

Water Soluble Extractive Value

The addition of 5g of churna to 100ml of chloroform-water and a 24-hour incubation period, the same procedure as for the alcohol soluble extractive value was employed. [21]

2.3.10. Future Scope of Churna

Churna formulations have enormous potential for growth and international recognition in the modern era. Traditional churna can be enhanced using contemporary scientific methods in response to the rising demand for herbal and natural remedies. Standardization can be aided by the application of sophisticated analytical tools, guaranteeing constant quality and therapeutic effectiveness. Research and clinical trials can verify the pharmacological effects of churna,

increasing its acceptability in evidence-based medicine. Churna can be added to contemporary dosage forms such as granules, capsules, and nano-formulations to enhance bioavailability, stability, and patient compliance.

3. Conclusion

Churn is one of the oldest and most basic forms of Ayurvedic medicine. It shows how traditional medicine is still important even in modern healthcare. It's determined the deep knowledge and practical use of the old Indian Medical system. Churn has many advantages. It is easy to prepare, low-cost, works fastly, and can include many useful ingredients. In conclusion, churn holds a significant place in traditional Ayurvedic medicine due to its natural composition, ease of use, and therapeutic benefits. Various types of churna, such as a Thriphala, Hingvashtak, and Trikata, are widely used for improving digestion, supporting detoxification, and boosting immunity. Testing and checking of churna with scientific methods like pharmacological studies, quality testing, and analysis- its value and trust have increased. Churna helps make healthcare safe, effective, and long-lasting all over the world.

Compliance with ethical standards

Disclosure of conflict of interest:

No conflict of interest to be disclosed.

References

[1] Ranaawat AK. A brief review about ayurveda. Int J Complement Alt Med. 2017;5(6):147–148.

[2] Bysani S, Srinivasababa P, Karthikeyan R. Ayurvedic churnas—An ancient dosage form to rebuild for better primary health care needs. Inventi Rapid Planta Activa. 2017;2017(1):1–3.

[3] Jaiswal YS, Williams LL. A glimpse of Ayurveda: The forgotten history and principles of Indian traditional medicine. J Tradit Complement Med. 2017;7(3):436–9.

[4] Shekhar S, Ramani A, Sonwaniya R. A review on formulation and evaluation of digestive churna. World J Pharm Res. 2023;12(10):115–19.

[5] Bhanupriya. Review of different Ayurvedic dosage forms in relation to contemporary aspects. J Ayurveda Integr Med Sci. 2025;10(3):125–6.

[6] Piyush M. Tridosha theory in Ayurveda: a comparative review of Charaka, Sushruta and Vagbhatta. International Journal of AYUSH. 2026;15(2):47–57.

[7] Riyazullah MS, Snehalatha S, Ansari MK, Niak MV, Prudvi P, Ganesh S, Jothieswari D. Development and evaluation of polyherbal digestive churna. Int J Pharmacogn Chem. 2025;6(2):1.

[8] Jaiswal DJ, Bagul SS. Ayurveda study of Churna Kalpana. J Bio Innov. 2023;12(4):744–749. doi:10.46344/JBINO.2023.v12i04.07

[9] Singh T, Mukhopadhyay T, Jaiswara SK, Taraphdar AK. A review on antihypertensive effect of Madbhanjan churna with equal quantity of trikuta: A traditional formulation of Bengal. World J Pharm Res. 2024;14(5):178.

[10] Marathe H, More H, Nikam H, Suryawanshi CP, Wagh RD. Development and evaluation of herbal churna: A natural approach to digestive wellness. Int J Pharmacogn Clin Res. 2025;7(1):107.

[11] Bhatnagar S, Yadav K, Bharadawaj S, Sharma K, Raghuvanshi M, Veena. Review of Madhumehari churna: An Ayurvedic polyherbal formulation used in the management of diabetes mellitus. Aryavaidyan. 2024;38(2):2.

[12] Sharma PV. Dravyaguna Vijnana. Varanasi: Chaukhamba Bharati Academy; 2003.

[13] Singh PK, Sah MK, Singh BK. A literary review on churna—An Ayurvedic dosage form. J Ayurveda Campus. 2021;2(1):105–6.

[14] Panda P, Meda MR, Dighe D. Review on pharmaceutical and therapeutic uses of churna in Ayurveda. Int Ayurvedic Med J. 2021;5(11):4235.

[15] Mehul M, Sushan S, Urvi D, Vivek D. An appraisal to ancient churna kalpana in existing epoch WSR to Dashan sanskar churna. World J Pharm Res. 2020;9(6):567.

[16] Arunachalam G, Christi VEI, Kumar P. Textbook of Herbal Drug Technology. Lucknow: Thakur Publications Pvt Ltd; 2021. p.68.

[17] Waghmare RM, Wani A, Wagh PS, Girbhane Y, Shabnam TS. Formulation and evaluation of churna. World J Pharm Res. 2024;13(10):353–4.

[18] Kumar A, Ghosh T, Hullati KK, Hullathi P. A systematic review on standardization of polyherbal churna. Syst Rev Pharm. 2016;7(1):43.

[19] Kokare N, Wadkar K, Kondwar M. Review on standardization of herbal churna. Int J Res Ayurveda Pharm. 2014;5(3):398–9.

[20] Surisetty RR, Xavier FG, Seetharaman S, Duraipandian CS. Standardization of marketed churna—An Ayurvedic polyherbal formulation. Int J Pharm Sci Res. 2014;28(2):109.

[21] Chamundeeswari D, Kanimozhi P, Vasanthkumar, Vamadhesheswara Reddy C. Formulation and evaluation of churna for digestive property. Sri Ramachandra J Med. 2007;2(2):39–40.