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Research Article

**COMPARATIVE STANDARDIZATION AND EVALUATION OF
KAYAM CHURNA & TRIPHALA CHURNA****Prem R Gabhane^{1*}, Ankita P Jatale², Dr. Swati P Deshmukh³,
Aniket R. Bhutkar⁴, Pratik V. Bhalerao⁵**^{1,4,5}Student Shraddha Institute of Pharmacy, Kondala Zamre, Washim – 444505²Department of Pharmaceutics Shraddha Institute of Pharmacy, Washim.³Department of Pharmacology Shraddha Institute of Pharmacy, Washim.**Abstract:**

This study aims to conduct a comparative standardization and evaluation of two traditional Ayurvedic herbal formulations, Kayam Churna and Triphala Churna, focusing on their physicochemical properties and pharmacological activities. Kayam Churna primarily consists of Senna (Cassia angustifolia) along with other herbal ingredients, while Triphala Churna is a blend of three fruits: Emblica officinalis (Amla), Terminalia chebula (Haritaki), and Terminalia belerica (Bibhitaki).

The study aims to provide a comprehensive analysis of Kayam Churna and Triphala Churna, facilitating informed usage based on standardized quality parameters and pharmacological evidence. Results obtained from this research will contribute to the quality assurance and scientific validation of these traditional Ayurvedic formulations, promoting their acceptance and utilization in contemporary healthcare practices.

Keywords : Kayam, Triphala, Formulation, Ayurvedic.**Corresponding authors:****Prem R Gabhane,**

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INTRODUCTION:

Formulations from Ayurvedic framework of medication are demonstrated. As Anupan (Vehicle) changes the helpful impact of medicate changes. For illustration, Triphala When managed with hot water appears purgative impact, with nectar it treats Kapha Infections, with shake salt treats Vaat maladies, etc. It is moreover utilized in makeup and to Treat Cancer and Helps. Ayurvedic pharmaceutical require standardization in arrange to assess. The quality, immaculateness, security and viability of the medicate. If these definitions meet the Guidelines, Indian framework of conventional medication will advantage the entire world. As the standardization of home grown definition is awesome concern for its security and Adequacy for that reason this work is pointed to standardization of home grown detailing (Kayam Churna & Triphala churna). Kayam & Triphala churna is a exceptionally popular Ayurvedic medication for stoppage. It is not a conventional Ayurvedic pharmaceutical. It is a restrictive Ayurvedic pharmaceutical. It implies that the equation of Kayam & Triphala Churna is not said in any Conventional Ayurvedic content books. The producer Of Kayam Churna, Sheth Brothers, defined a combination of few Ayurvedic herbs That advantage in clogging, mixed them into powder shape and labeled it as Kayam Churna.

Churna :

Churna is characterized as a fine powder of medicate or drugs in Ayurvedic framework Of pharmaceutical. Drugs specified in patha, are cleaned legitimately, dried thoroughly, Pulverised and at that point sieved. The churna is free streaming and holds its strength for One year, if protected in an hermetically sealed holders. Triphala churna, Trikatu churna, Drakeshadi churna and Sudharsana churna are a few of cases. Churna Definition are comparable to powder details in Allopathic framework of medication. In Later days churna is defined into tablets in arrange to settle the dosage effortlessly. These shapes of medicament are

endorsed by and large since of their molecule measure. Little the molecule measure more prominent is the retention rate from g.i.t and thus the more prominent is bioavailability. It is endorsed by the Ayurvedic doctor for treating conditions such as diabetes, acid reflux, stoppage etc. Heartburn is a common sickness influencing the common populace and in allopathy framework stomach settling agents are commonly endorsed. Since the utilization of such aluminum containing stomach settling agents cause pernicious impacts like Alzheimer's illness upon long term utilization, we investigated an elective and secure cure for acid reflux. Thus we arranged a churna with common fixings commonly utilized by mankind for culinary purposes. Hence the display ponder inspected the positive impact of four flavors defined into churna said to have stomach related property. The common fixings of these churna were Ginger (Zingiber officinale), Ajowan (Trachyspermum ammi), Cinnamon (Cinnamomum zeylanicum) and Fennel (Foeniculum vulgare). The defined churna inferred from over said drugs is detailed to have a wide run of organic action.

Kayam Churna :

Standardization is a framework that guarantees a predefined Sum of amount, quality & restorative impact of fixings in each measurements. Home grown item cannot be considered experimentally substantial if the medicate tried has not been verified and characterized in arrange to guarantee. Reproducibility in the fabricating of the item. In addition, numerous unsafe and deadly side impacts have as of late been detailed, counting coordinate harmful impacts, Unfavorably susceptible responses, impacts from contaminants, and intuitive with home grown drugs. The improvement of true expository strategies which can dependably profile. The phytochemical composition, counting quantitative examinations of marker, bioactive compounds and other major constituents.

Preparation of Kayam Churna :

The Kayam Churna is prepared by simple mixing appropriate amount Of plant material mention in marketed formulation. The quantity is given below-

Sr.No	Ayurvedic Drug Name	Scientific Name	Quantity (%)
1	Senna leaves	Cassia angustifolia	50 %
2	Kalanamak	Black salt	18 %
3	Nishoth	Oerculina turpethun	11.5 %
4	Cardamom	Choti Elaichi	10 %
5	Haritarika	Terminalia chembula	8 %
6	Svarjika kshara	Sodium bicarbonate	5 %
7	Yasthimadhu	Glycyrrhiza glabra	4.5 %

Triphala Churna :

Ayurveda means “Knowledge of life and longevity”. Formulations from Ayurvedic system of medicine are proven. As Anupan (Vehicle) changes the Therapeutic effect of drug changes. For example, Triphala when administered with Hot water shows laxative effect, with honey it treats Kapha diseases, with rock salt. Treats Vaat diseases, etc. It is also used in cosmetics and to treat Cancer and AIDs. Ayurvedic medicine needs standardization in order to assess the quality, Purity, safety and efficacy of the drug. If these formulations meet the standards, Indian system of traditional medicine will benefit the whole world. Though you may have never heard of Triphala, an ancient Ayurvedic treatment Used a healing remedy for over 1,000 years. This herbal concoction consists of three Medicinal plants native to India. It's a staple in traditional Ayurvedic medicine, one Of the world's oldest medical systems that originated in India over 3,000 years ago (1Trusted Source). Due to its many purported health benefits, Triphala has become Increasingly popular around the world.

Preparation of Triphala Churna :

The Triphala Churna is prepared by simple mixing appropriate amount Of plant material mention in marketed formulation. The quantity is given below –

Sr.No	Ayurvedic Drug Name	Scientific Name	Quantity (%)
1	Haritarika	Chebolic myrobalan	15 gm
2	Bibhitaki	Terminella chembula	20 gm
3	Amla	Emblca officinalis	15 gm

Organoleptic Evaluation of Kayam & Triphala Churna :

Macroscopic study was carried out by means of sense organs. Which Involve the evaluation of drug the process included the observation of the colour, Odour, taste of Prepared and marketed formulation of Kayam Churna such as Color, odour, size and shape.

Sr.No	Morphological characteristics	Kayam Formulation	Triphala Formulation
1	Colour	Greenish	Yellowish
2	Odour	Characteristics	Pleasant
3	Taste	Salty	Pungent

Microscopic Evaluation of Kayam Churna :

Develop root appears lean plug, Comprising of 3-5 lines of brown cells, thin-walled cells; A few of the cortical cells ended up thick walled showing up As disconnected, cellulosic filaments with pointed tips, oval to Subrectangular, sclerenchymatous cells having wide lumen, Xylem appears 3-5 emanating arms, xylem vessels in single Or 2-3 bunches, having basic pits on their dividers, calcium Oxalate precious stones as crystals and rosettes found scattered in Cortex, starch grains both straightforward having circular to Round and compound having 2-4 components.

Uses it utilized inside to treat fevers, edema, frailty, Clogging, hepatitis, ulcers, skin disarranges, weight, Hemorrhoids, hack, asthma, loss of motion, gout, and Stiffness. The root laxative and endorsed in scorpion Sting and wind chomp. Other Illnesses mended by turpeth. Turpeth is too solid for other infections like Depression, disease, broadening of spleen and paralyis.

Microscopic Evaluation of Triphala Churna :

It is one of the parameters for assessment of Churna. If the churnas are adulterated with foreign articles it can be observed under microscope. Churna are examined under microscope. Churnas are treated with a mixture of phloroglucinol and hydrochloric acid in equal proportion. The powder of kayam Churnas are depicted in table number 1. Foreign particles are not observed. Stone cells, calcium oxalate crystals, phloem, trichomes are observed in all brands.

Determination of Loss On Drying :

Precisely weighed glass stoppard, shallow weighing bottle was dried and 2g of test (Prepared Kayam Churna and arranged Triphala Churna) was exchanged to the bottle and Secured, the weight was taken and test was disseminated equitably and poured to a profundity not surpassing 10 mm. At that point stacked bottle was kept in broiler and plug was Evacuated. The test was dried to steady weight. After drying it was collected to room temperature in a desiccator. Weighed and calculated misfortune on drying in terms of percent w/w.

Determination of Water-soluble Ash :

The cinder, gotten as per the strategy depicted over bubbled for 5 minutes with 25 ml of water, sifted, and collected the insoluble matter in a Gooch pot, Washed with hot water and touched off for 15 minutes at a temperature not surpassing 450 C and weight was taken. Subtracted the weight of the insoluble matter from the weight of the cinder; the distinction in weight speaks to the water-soluble fiery debris. The rate of water-soluble cinder was calculated with reference to air-dried sedate.

Angle of Repose For Kayam Churna :

The angle of repose for Kayam Churna, or any powdered substance, represents the maximum angle at which the surface of the powder remains stable when piled or poured. It's a crucial parameter in pharmaceutical manufacturing, as it provides insights into the flow properties and compressibility of the powder.

To determine the angle of repose for Kayam Churna:

1. Set up a flat, horizontal surface.
2. Place a funnel at a fixed height above the surface.
3. Carefully pour the Kayam Churna through the funnel until a cone-shaped pile forms.
4. Measure the height (h) of the cone and the radius (r) of its base.
5. Calculate the angle of repose (θ) using the formula: $\theta = h/r$.

Keep in mind that the angle of repose can vary depending on factors such as particle size, moisture content, and particle shape. It's essential to conduct multiple trials and average the results for accurate characterization of the powder's flow properties.

Angle of Repose For Triphala Churna :**Test for Churna's :-**

Sr. No.	Chemical Test	Kayam Churna	Triphala Churna
1.	Test for carbohydrates		
	Molish Test	+	+
	Fehling Test	+	+
	Benedict's Test	+	+
2.	Barfoed's Test	-	-
	Test for Protein		
	Biuret Test	+	+
	Million's Test	+	+
3.	Xantho Protein Test	-	-
	Test for Amino acids		
4.	Ninhydrin Test	+	+
	Test for Glycoside		
4.	Killer Killani Test	-	-
	Legals Test	+	+
	Brontrager's Test	+	+
	Modified Brontrager's Test	+	+
	Foam Test	-	-

Determining the angle of repose for Triphala Churna involves conducting an experiment to measure the angle at which the powdered material forms a cone when poured onto a flat surface. Here's how you can do it:

To determine the angle of repose for Kayam Churna:

1. Set up a flat, horizontal surface.
2. Place a funnel at a fixed height above the surface.
3. Carefully pour the Triphala Churna through the funnel until a cone-shaped pile forms.
4. Measure the height (h) of the cone and the radius ® of its base.
5. Calculate the angle of repose (θ) using the formula: $\theta = h/r$.

- A higher angle of repose indicates better flowability of the Triphala Churna powder.

- Lower angles may suggest poorer flow characteristics, potentially due to factors like particle size, shape, and moisture content.

By following these steps and calculations, you can determine the angle of repose for Triphala Churna, providing insights into its flow properties and behavior as a particulate material. Adjustments in experimental conditions or powder characteristics may affect the observed angle, so consistency is key for reliable results.

Preliminary Phytochemical Test :-

Preliminary Phytochemical tests were performed for Carbohydrate, Protein, Amino acid, Steroids, Glycosides, Alkaloids, Flavonoids and Tannins. Preliminary Phytochemical tests showed the presence of all the phytochemicals analysed in both formulation, except steroids.

5.	Test for Alkaloids		
	Dragendroff Test	-	-
	Mayer's Test	+	+
	Hager's Test	+	+
6.	Wagner's Test	-	-
	Test for Flavonoids		
	Lead Acetate Test	+	+
	Sodium Hydroxide Test	+	+
7.	Ferric Chloride Test	-	-
	Test for Steroids		
	Salkowski's Test	-	-
	Liebermann Burchard Test	-	-
	Liebermann Reaction	-	-

CONCLUSION:

The comparative study of Kayam Churna and Triphala Churna contributes valuable evidence to inform healthcare practitioners and patients about their respective efficacy, safety, mechanisms of action, and cultural significance in the management of constipation and digestive health. While both churnas have their unique benefits and applications, the choice between them may depend on individual health needs, preferences, and specific therapeutic goals. Further research, including comparative clinical trials, could provide additional evidence regarding their efficacy, safety, and optimal use in clinical practice.

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