IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

# Formulation And Evaluation Of Herbal Churna

**Nitin Ashok Pawar , prof. Sayyed A. Kirmani , Dr. Rajendra M. Kawade**

**Nandkumar Shinde college of Pharmacy, Vaijapur ,**

**Dist. – Chh. Sambhajinagar**

**ABSTRACT** :

People all throughout the world utilise natural remedies to cure a variety of illnesses. People have faith in natural remedies. We have created a herbal churn that you may take whenever you'd like to treat a medical condition in an attempt to win people's faith. help improve and support your health by fortifying your immunity. With a recommended dosage, you can take this churn at any time of day and it contains ten different Ayurvedic aushadhis. Ten herbs were used to prepare the chop: giloy (Tinospora cordifolia), lemongrass (Cymbopogon), clove (Syzygiumaromaticum), ginger (Zingiber officinale), cinnamon (Cinnamomum), tulsi (Ocimum tenuiflora), cardamom (Elettaria cardamomum), fennel (fennel fruit), peppermint (brandy mint), giloy (Tinospora cordifolia), or giloy. Evaluations are made of this Ayurvedic treatment. Just boil the required amount of churn in water and consume at least three healthy sips daily to boost your immunity and reduce congestion brought on by airborne illnesse

**Keywords**: Herbal Churna, Anti-viral activity, diabetic activity, constituents, Anti-inflammatory.

## INTRODUCTION :

A powder generated from an unprocessed material is called churn. The sizes of each component are reduced once they have all been collected and dried. There are many different Churn products available on the market. For a full year, the powdered churn can be stored in sealed containers. [1] Common ingredients in this churn included tulsi (Ocimum tenuiflorum), cinnamon (Cinnamomum), clove (Syzgiumaromaticum), ginger (Zingibrin officinale), lemongrass (Cymbopogon), longpepper (Piper longum), giloy (Tinospora Cordifolia), and cardamom (Elettaria cardamomum) [1] fennel (fennel fruit) and peppermint (brandy mint).

**Material**:

**Clove**: Tropical areas with rich, fertile soil, lots of water, and a humid climate are ideal for growing them. It is primarily found at higher elevations on the hilly western ghats terrain across most of Tamil Nadu and Karnataka. It is the most valuable spice in the world. Cloves, which are unopened buds from Myrtaceae plants, have a strong aroma similar to that of guavas. Among its many medical uses are the preservation of oral health, its antimicrobial properties, and its use in toothpastes and lotions for dental preparations. It has

anti-inflammatory properties as well. Proteins, carbohydrates, cellulose, pentosans, stem volatile oil,fixed oils, and several vitamins are among the chemical components of clove.[2]

Fig 1 :-Clove

**Ginger**:

Ginger Ginger is one of the spices cultivated in India and other Asian countries. This churn is made using ginger that is either Chinese or Indian. Ginger comes from Zingiber officinale.[3] Ginger, a member of the tropical family that has 53 genera and over 1200 plant species in the Malay region, is more prevalent in Indo-Pacific. Ginger has a number of important chemical components, such as gingerberine and bisabolene. The remaining components are gingeraol and six-shogaols.[4] Other components that are known to exist include geraniol, d-camphor, beta-phthaldane, linalool, alpha-farnesene, Shagoal, neroliol, and other compounds like zingerone A&B. Analgesic, cardiovascular, respiratory, anti-inflammatory, and antiplatelet actions are among its effects. It has anticancer properties as well..

Fig 2 : Ginger

**Cinnamon**:

Cinnamon bark, which comes from a range of cinnamon tree species, is one of the most important and popular spices in the world. It is used in both traditional and contemporary medicine and cooking. There are cinnamon trees all over the world, and the genus contains more than 250 species that have been identified. The bark

contains cinnamon and eugenol. It acts as an anti-inflammatory to treat inflammation of the throat.infections, therapy of cardiovascular disease, anticancer action, antidiabetic action, etc. [5,6]

Fig 3. : Cinnamon

**Tulsi** :

One plant that grows evergreen and has many medicinal uses is tulsi. It belongs to the Lamiaceae family and is primarily found on the Indian subcontinent. It has been used in ayurvedic remedies for over three thousand years. Tulsi has galactagogue, carminative, and stomachic properties because it also includes holy basil. Its main purposes are to assist treat upper respiratory issues and reduce elevated blood sugar levels. Potential risk for diabetics. Tulsi is used to reduce blood pressure, lower cholesterol, and ease sore throats. Tulasi leaves contain a variety of chemicals, including ursolic acid, carvacrol, linalool, limatrol, caryophyllene, and carvicol [7].

Fig 4 : Tulsi

**Fennel**:

Foeniculum vulgare is typically a perennial, fragrant plant with numerous subspecies and variants that belongs to the Apiaceae (Umbelliferae) family. While F. vulgare mill is known as sweet fennel, F. vulgare subsp. Vulgare var. Dulce is known as sweet fennel. We call this subsp. Vulgare var. vulgare bitter fennel. These two types are mostly used medicinally and are sold commercially. Although the plant thrives in the Mediterranean region and temperate European nations, it is currently grown for commercial purposes in the majority of the world's arts. The ridged, oblong or ellipsoid-shaped, aromatic fruits that are commonly called seeds are known by more than 100 different names worldwide and have been used medicinally since ancient times. The Saxons considered fennel to be one of their nine sacred herbs, and they believed it to have healing properties and to be a magical

herb. On midsummer eve in the Middle Ages, it was hung over doorways to ward off evil spirits from the home.[8]

Fig 5 : Fennel

**Peppermint**:

Out of all the plants in the world today, about 10% have been found to have therapeutic properties. Herbs with the capacity to fend off various illnesses are considered medicinal herbs. The primary cause of these plants' medicinal uses in treating various illnesses is their phytochemical composition. Peppermint (Mentha piperita L.), also referred to as pudina in India, is a common type of medicinal herb. This is primarily grown in cold climates and mountainous terrain. The world is well aware of its relaxing and cooling properties.

Fig 6: Peppermint

**Lemon grass** :

Throughout Asia, America, and Africa, this tropical and semi-temperate plant is commonly referred to as citronella grass. It belongs to the genus Cymbopogon and the Poaceae family. Lemon grass contains humulene,alpha guaiene, borneol, citronellal, neral, geranial, nerol, citronellol, geranic acid, and t-cadinol. Its biological qualities include antibacterial, antifungal, anti-inflammatory, and respiratory effects.

Fig : Lemon grass

**Cardamon**:

Elettaria cardamomum Maton, also known as the Queen of Spices, is the indigenous name for the evergreen woods found in the southern part of the Western Ghats.The seeds also contain 3–6% volatile oil in addition to fixed oil, ligninous fiber, ash, nitrogenous mucilage, a bitter resin, and starch.[9]The active component of the volatile oil is cineole. Other aromatic compounds present in the mixture include terpinyl acetate, terpineol, borneol, itenol, nerol, geraniol, methyl eugenol, trans-nerolidol, terpinene, and others.[10] It functions as a flavoring agent, diaphoretic, expectorant, stimulant, appetiser, digestive aid, and carminative. Among the diseases for which it is utilized are asthma, bronchitis, cough, nausea, vomiting, indigestion, headache, diarrhea, respiratory issues, colds, flatulence, and aspice in cooking. [11,12]

Fig 8 : Cardamon

**Formulation of Churna** :

The formulation was prepared using the following raw materials: two parts of Zingiber officinale rhizomes, two parts of Foeniculum vulgarae fruits, one part of Cinnamomum zeylanicum bark, and one part of Trachyspermum ammi fruits. The Nandkumar Shinde College of Pharmacy's Pharmacognosy department verified the raw

components used in this formulation after they were bought from the market. The microscopic properties of the powdered medication are used to do the authentication. Following their passage through sieve number 60, the finely ground raw materials were combined in the proper proportions (16.7g of Zingiber officinale and Foeniculum vulgarae, 8.7g of Cinnamomum zeylanicum, and 8.7g of Trachyspermum ammi). An airtight glass jar was used to store the churna [32].

**Method**

1 . Plant collection and identification :

A portion of the herbal churna ingredients from different labs.The pharmaceutical department of verified the raw components used in this formulation after they were bought from the market.The microscopic properties of the powdered medication are used to carry out the authentication. The raw materials were finely ground and then run through filter number 44.

2 . Preparation for Harbal Churna :

All of the dry herbal ingredients have been ground into a fine powder.

3.Weighing :

A digital balance was used to precisely weigh each of the necessary herbal powders for making the face pack. Table Number 1 lists the quantity and composition.

4 . Mixing :

All these fine ingredients clove powder,ginger powder, cinnamon powder, Tulsi Powder, cardamom powder,fennel powder, Giloy powder, Mentha powder, Longpeeperpowder and lemon grass powder,were mixed thoroughly by a mixer to form a homogenous fine powder.

Fig 8: Mixing all ingredients

5. Seiving :

To obtain an adequate amount of extra fine powder, all fine powder materials were mixed and then run through sieve number 44.

Fig 9 : Seiving

Collection and Storage-

The powder mixture was gathered, kept in an appropriate plastic container, and utilized to calculate assessment parameters.

Fig 10 : churn container

**Evaluation of Physical Parameter:**

**1.Determination of PH** [30] : A pH meter (Elico pH meter) was used to measure the pH of a 1% solution of the prepared churna.

**2.Determination of moisture** ccontent[30]: A halogen moisture determination device (Mettler ) was used to determine the churna's moisture content.

**3**. **Determination of Ash Values**[30]**:**

i. **Total Ash Value** : In a silicon crucible that had been previously burned and tarred, 2 grams of churna were precisely weighed. After that, the substance was burned by progressively raising the temperature to 500–600° C until it turned white, signifying the lack of carbon. After cooling in a desiccator, the amount of total ash in milligrams per gram of air-dried material is determined.

ii. **Acid Insoluble Ash Value** :After adding 25 milliliters of HCL and slowly boiling it for five minutes, around five milliliters of hot water were added and put into the crucible with the complete ash. An ashless filter paper was used to collect the insoluble material. After that, the filter paper and the insoluble material were put into a crucible and burnt to a constant weight after being cleaned with hot water until the filterate was neutral. After allowing the residue to cool, it was weighed.

**4 . Determination of Extractive Values**[30] **:**

i.**Water Soluble Extractive Value**: Five grams of churna were precisely weighed and put inside a conical flask with a glass stopper. After that, it is macerated for eighteen hours with 100 milliliters of chloroform water. After filtering, roughly 25 milliliters of the filterate were put into a china dish and dried by evaporating it on a water bath. After six hours of drying at 105° C, it was chilled and weighed.

ii**.Alcohol Soluble Extractive Value** : The subsequent steps were the same as for the water-soluble extractive value, except ethanol was employed as the solvent instead of chloroform water.

**5. Determination of Heavy Metal contamination:**

**I. Arsenic Content:**[31]

Preparation of Standard Solution (10ppm)

After dissolving 0.33 grams of arsenic trioxide in 5 milliliters of 2M sodium hydroxide solution, the mixture was diluted with 250 milliliters of water. Water was then used to dilute one volume of this to 100 volumes.

II. **Limit test for Iron :**[31]

Preparation of Standard Solution ( 20ppm)

Standard Solution Preparation (20 PPM) Distilled water was used to dilute one volume of a 0.1726% w/v ferric ammonium sulphate solution in 0.05 M sulfuric acid to ten volumes

Procedure

: In Nessler's cylinder, a limit test was conducted. Two milliliters of the test and reference solutions were placed in different cylinders, followed by the addition of two milliliters of a 20% citric acid solution and 0.1 milliliter of thioglycollic acid. After mixing and adding iron-free ammonia to make the solution alkaline, it was diluted with 50 milliliters of distilled water. After five minutes, it was let to stand, and the sample's color was compared to the standard color. The sample was deemed to fail if the color generated during the test was greater than that of the standard solution..

III. **Limit test for lead :**[ 31]

Preparation of Standard Solution (20ppm)

Two milliliters of nitric acid and enough water to make 250 milliliters were used to dissolve 0.4 grams of lead nitrate. Distilled water was used to dilute around 1 volume of the aforesaid solution to 10 volumes.

Procedure

: In Nessler's cylinder, a limit test was conducted. Separate cylinders containing 1 ml of the test solution and standard lead solution were diluted with 25 ml of distilled water. and then diluted to 35ml using distilled water after adding diluted acetic acid or diluted ammonia solution to get the pH down to values 3–4. Ten milliliters of freshly made hydrogen sulfide solution were added to each solution, combined, and diluted with water to equal fifty milliliters. After five minutes of standing, it was observed looking down over a white surface. The sample is considered to pass the limit test for lead if the color generated in the test solution is not more intense than that of the standard solution.

**Conclusion**

Combination of minerals and/or powdered herbs used in Ayurvedic therapy. Because they are thought to be safer and have fewer adverse effects than synthetic ones, natural therapies are more widely accepted. Herbal churna is used to treat conditions like diabetes and to increase blood circulation. Therefore, it is a very nice attempt in this work to make the herbal churna using elements that are readily available in nature, such as clove, ginger, cinnamon, cardamon, lemon grass, long pepper, pipper mint, fennel, and giloy tulsi. This manufactured herbal churna mixture has a smooth look, a fine texture, a nice odor, and a greenish color. Every evaluation test, including examinations of flow characteristics and morphology.

**Reference :**

1. Batiha GE, Alkazmi LM, Wasef LG, Beshbishy AM, Nadwa EH, Rashwan EK.Syzygiumaromaticum L.(Myrtaceae): traditional uses, bioactive chemical constituents, pharmacological and toxicological Functions. Biomolecules. 2020 Jan 30;10(2):202.doi 10.3390/biom10020202.

2. Liu Y, Liu J, Zhang Y. Research Progress on Chemical Constituents of Zingiber officinale Roscoe. Biomed Res Int. 2019 Dec 20;2019:5370823. Doi 10.1155/2019/5370823.

3. The Immunomodulatory effects of Zingiber officinale (Ginger):A Systematic Review Nurul Hikmah Harun*, Mohamad Firdaus Mohamad. © RJPT All right reserved. Research J. Pharm. And Tech. 2022; 15(8):3776-3781. DOI: 10.52711/0974- 360X.2022.00634

4. Singh N, Rao AS, Nandal A, Kumar S, Yadav SS, Ganaie SA, Narasimhan B. Phyto chemical and Pharmacologicfal reviewofCinnamomum verumJ. Presl-a versatile spiceused in food and nutrition. Food Chem. 2021 Feb 15;338:127773. Doi 10.1016/j.foodchem.2020.127773. Epub 2020 Aug 4.

5. Processing and Medicinal Uses of Cardamom and Ginger – A Review Cohen MM. Tulsi – Ocimum sanctum: A herb for all reasons. J Ayurveda Integr Med. 2014 Oct-Dec;5(4):251-9. Doi 10.4103/0975-9476.146554. PMID: 256247011

6. Benefits of cardamom (L.) extract for anti infllamatory propertyAdjuvants, Gustavo R. Cárdenas Garza,1 Joel H. Elizondo Luévano, ,4,* and Osvelia E. Rodríguez Luis1; -Geun Lee, Academic Editor and In Jin Ha, Academic Editor; National library of medicine, national centre for biotechnology information.

7. The Role of Cardamom Oil in Oral Health: A Short Review Pearley Jesylne, Subasree Soundarajan , Karthikeyan Murthykumar, Meenakshi. M, © RJPT All right reserved Research J. Pharm. And Tech. 9(3): Mar., 2016; Page 272-274 DOI: 10.5958/0974-360X.2016.00050.0

8. https://www.pharmacy180.com/article/fennel-240/

9. Cárdenas Garza GR, Elizondo Luévano JH, Bazaldúa Rodríguez AF, Chávez Montes 74. Sharma R. Cardamom comfort. Dent Res J (Isfahan). 2012 Mar;9(2):237. Doi 10.4103/1735- 3327.95243. PMID: 22623945;

10. Singh D, Chaudhuri PK. Chemistry and Pharmacology of Tinospora cordifolia. NatProd Commun. 2017 Feb;12(2):299-30

11. Current Research in Pharmaceutical Sciences 2019; Tinospora cordifolia (Giloy) – Therapeutic Uses and Importance: A review Charu Saxena and Geeta Rawat

12 Tinospora cordifolia– A plant with Spectacular natural immunobooster, Prativa Biswasroy1, Sthitapragnya Panda1, Chandan Das1, Debajyoti Das1, Durga Madhab Kar2, Goutam Ghosh1* © RJPT All Right reserved Research J. Pharm. And Tech 2020; 13(2):1035-1038. DOI: 10.5958/0974- 360X.2020.00190.0

13. Parle milind and khanna deepa.A champion spice .International journal of research inAyurveda & Pharmacy ,2 (1) jan-feb 2011 47-54

14. Shan B.Caiyz,sun M,corkeh. Antioxidant capacity 26 spice extracts and characterization of their phenolic Constituents .J Agric food chem 2005;53(20): 7749- 7759

15. Sahid hussain,Rafia Rahman and Ayesha mustaq ,Asma EIzerey –belaskeri .clove:Areview of previous Species with multiple uses .International journal of chemical and biological science 11 (2017) :129-133

16. Shan B, Cai YZ, Sun M, Corke H. Antioxidant capacity of 26 spice extracts and characterization of their Phenolic constituents. J Agric Food Chem. 2005;53(20):7749–7759.

17. Neveu V, Perez-Jiménez J, Vos F, Crespy V, du Chaffaut L, Mennen L, et al. et al. PhenolExplorer: anonline Comprehensive database on polyphenol contents in foods. Doi:10.1093/database/bap024.

18. pinto E, valer-silva, cavaleiro C,salgueiro E,Antifungal activity of clove essential oil from syzygium Aromaticum on candida aspergillus and dermatophyte species.2009;58:1454-1462

19. Chaieb K.Hajlaoui H.Zmantar T kahlaNakbi,A.B.,Rouabhia,M.,Mahdouani,K.and bakhrouf,A.the chemical Composition and biological activity of essential oil,Eugenia Caryophyllat(syzygium aromaticuml.Myrtaceace):a short review phytotherapy Research .2007 ;21(6):501-506

20. Prasad RC,Herzog B,Boone B,Sims L,Waltner-Law L. an extract of syzygiumaromaticum represses genes Encoding hepatic gluconeogenesis enzymes .J Ethanolpharmacoal.2005;96(12):295-301

21. Singh AK,Dhamanigi SS, Asad M.Anti-stress activity of hydro-alcholic extract ofEugenia carryophyllus Buds (clove).Indian J.pharmacol.2009;41:28-31

22. Trogtokit Y ,Rongsriyam y,Komalmistra n, Apiwathnasorn C. comperativerepellence of 38 essential Oils against mosquito bites.phytotherapy Research .2005;19(4):303-309

23. Cai l,CD Wu. Compounds from syzygium aromaticum possessing growthinhibitory activity against Oral pathogens.J.Nat.prod .1996;59(10):987-990

24. https://pharmaxchange.info/2013/01/pharmacognosy-of-ginger/

25. https://www.rxlist.com/ginger/supplements.htm#WhatIs

26. Awang DVC, Ginger. Can Pharm J, 309, (1992).

27. Bisset NG and Wichtl M, Herbal Drugs and Phytopharmaceuticals, MedpharmScientific Publishers:(1994).

28.Bradley PR, British Herbal compendium Bournemouthe, Vol 1, 190, (1992).

29. https://www.yourarticlelibrary.com/biology/resins/ginger-sources-cultivation- anduses/49779

30. Indian pharmacopoeia. Controller of Publications 1966, 1: 514 – 517.

31. Indian pharmacopoeia 1996, Vol.2 Controller of Publications, A 138-143

32. Rama Sharma GVS, Sadhan, K. Dutta. Ancient Science Of Life 1955, 15: 119-120.