

## Formulation and Evaluation of Natural Herbal for Respiratory Stimulator

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**ABSTRACT:** Herbal therapy and herbal drugs Predominates in traditional medicine as well as in alternative medicine practiced in the develop world. The main objective of the present study to formulate and evaluate a respiratory stimulant. Respiratory stimulant were formulated using the herbal drug Terminalia chebula (fruit), Piper nigrum (fruit), Cinnamomum zeylanicum (bark), Ocimum tenuiflorum (Leaves), Zingiber officinale (root), Moringa oleifera (drum stick), Emblica officinalis (fruit), the plant part used botanical and local names families and mode of preparation have been given.

The main objective of formulation and evaluation of herbal natural churan as respiratory stimulant is to overcome all the problems related to respiratory system and induce immunity to deal with diseases herbs which shown anti-oxidant and anti-inflammatory. Until now respiratory stimulants available as tablets, capsules, lozenges, solution, IV and IM. It is because of its fast bioavailability and fast onset of action without any side effects.

There is thus a growing interest in developing non – opioid based natural herbal therapies in the form of churan that can help improve out comes in these cases that is an agnostic respiratory ventilator one that improves respiratory function independent of chemical cause.

It is a classical ayurvedic medication that has been used since the ancient times by several sages and ayurvedic physicians to treat different types of respiratory conditions imbued with Bronchodilator, Expectorant, anti- inflammatory Churan extensively used for treating and managing conditions like whooping cough, cold, asthma, COPD, Pneumonia, etc.

**KEYWORDS:** Medicinal plant, Respiratory Stimulant, Anti – inflammatory, Herbal Churan.

### I. INTRODUCTION

There are still many people who practice traditional medical methods. The use of plant materials as a source of medicines for a wide range of human ailments has received more attention as a result of factors including population growth, insufficient drug supply, prohibitive cost of treatments, side effects of several synthetic medicines, and the emergence of resistance to currently used drugs for infectious diseases. Recent studies have also revealed promising results from using of plants in the treatment or prevention of a wide variety of hard curable diseases such, Athrosclerosis, Diabetes, Cardiovascular diseases, Neurological disorders and Cancer.Changes in redox status are the key hypothesized mechanism for the positive benefits of traditional plants. Therefore, medicinal plants with Antioxidant activity have been shown to counteract these situations and always been considered as a healthy source of health promotion. <sup>[5]</sup>

Respiratory disorders are a common concern among individuals worldwide. While pharmaceutical drugs provide temporary relief, many individuals are looking for a more natural and holistic approach to Respiratory support. Ayurveda, the ancient Indian system of medicine, provides a vast array of herbal remedies for respiratory support. One such remedy is the respiratory churna mixture which consists of a combination of herbs known for their respiratory -enhancing properties such as cough, inflammation, cold, immunity, etc. Churn prediction is important for improving the health of users. Churn prediction has been previously studied, but most studies applied time-invariant model structures However, additional unstructured data have become available; therefore, it has become essential to process daily time-series log data for

churn predictions. Churna is a polyherbal Ayurvedic formulation sold in the form of powder.<sup>[3]</sup>

It is composed of six main ingredients utilized for formulation listed in the Ayurvedic Formulary of India and in Indian Herbal Pharmacopoeia. All the ingredients have a role to fulfil. Phytochemicals like alkaloids, glucosides, tannins, and phenols are present.

*Terminalia chebula* Retz also spelled Hritaki in Sanskrit, Chebulic myrobalan in English, and Harad in Hindi. It is a member of the Combretaceae family and has common in tropical and subtropical nations like India. It is popular traditional medicine of Unani, Ayurveda and Homeopathic medicinal systems. Owing to various pharmacological activities, it is known as “King of

## II. METHODOLOGY:

### Materials and Methods:

#### Collection of Plants and Material:

All Plant Powder were Collected form Local market of Gondia District *Terminalia chebula* (Fruit), *Piper nigrum* (Fruit), *Cinnamomum zeylanicum* (Bark), *Ocimum tenuiflorum* (Leaves), *Zingiber officinale* (Root), *Moringa oleifera* (drum stick), *Embllica officinalis* (Fruit).

#### Instruments used:

Muffle furnace, Hot air oven, weighing machine, Crucible dish, Burner, Desiccator, Measuring cylinder, Beaker, Funnel, Wire gauge, Pair of tongs, Conical flask, Mortar and Pestle, foil paper, petri plate, Filter paper, pH paper, Shaker, Tap density tester.

#### Chemicals used:

Hydrochloric acid, Alcohol.

#### Determination of Total Ash:

About 2gm of sample was accurately weighed in a crucible dish at a temperature is exceeding in muffle furnace. then it was cooled in desiccator and weight. The percentage of total Ash was calculated to the formula.

Medicines” in Tibet and list top in Ayurvedic *Materia Medica*.<sup>[10]</sup>

The phrase "medicinal plant" refers to a variety of plant species used in herbal medicine or botanical studies. It is the use of plants for medicinal purposes and study of such uses. The word herb has been derived form the latin word *herba* and an old French word *herne*. Now days, herb refers to any part of the plant like fruit, seed, stem, bark, flower, leaf, stigma or a root, a non-woody plant. Previously, the word "herb" was solely used to describe non-woody plants, such as those that are derived from trees and shrubs. Additionally, these medicinal plants are employed in food, flavonoids, medicine, perfume, and certain spiritual practices.

#### Determination of Acid Insoluble Ash:

The total ash was boiled for five minutes with 25 milliliters of diluted hydrochloric acid, and the insoluble material was collected on ash-free filter paper. The filter paper was heated for two minutes before being placed in a desiccator to cool and be weighed. According to the formula, the percentage of total ash was determined.

#### Determination of Water Soluble Extractive:

In a closed flask, 5 g of test sample was weighed, macerated with 100 ml of chloroform water for six hours, and then left to stand for 18 hours. Rapid filtration was performed while taking safety measures to prevent solvent loss. 25 ml of the filtrate was taken in petri plate. Then heat to the water bath up to evaporated to dryness and weight. The percentage of water soluble extractive was calculated to the formula.

#### Determination of Alcohol Soluble Extractive:

5 g of test sample was weighed and macerated with 100 ml of alcohol in a closed flask then the shaking frequently during six hours and allowing standing for eighteen hrs. Rapid filtration was performed while taking safety measures to prevent solvent loss. 25 ml of the filtrate was taken in petri plate. Then heat to the water bath up to evaporated to dryness and weight. The percentage of alcohol soluble extractive was calculated to the formula.

#### Formulation of different Herbal Churan:

SR. NO.	INGREDIENTS	F1	F2	F3
1.	TERMINALIA CHEBULA	35 gm	30 gm	36 gm

2.	PIPER NIGRUM	12gm	15 gm	8 gm
3.	CINNAMOMUM ZEYLONICUM	8 gm	10 gm	4 gm
4.	OCIMUM TENUFIFLORUM	20 gm	15 gm	30 gm
5.	ZINGIBER OFFICINALE	10 gm	13 gm	6 gm
6.	MORINGA OLEIFERA	7 gm	10 gm	5 gm
7.	EMBLICA OFFICINALIS GAERTN	5gm	5 gm	9 gm
8.	OTHER	3gm	2gm	2gm

Table 1 : Formulation of herbal churan

#### Physicochemical Analysis of Churan:

SR.NO.	PARAMETERS	PHYSIOCHEMICAL VALUES		
		F1	F2	F3
1.	TOTAL ASH	1.21%	2.63%	2.60%
2.	ACID INSOLUBLE ASH	0.83%	0.42%	0.68%
3.	WATER SOLUBLE EXTRACTIVE	81.58%	87.68%	82.14%
4.	ALCOHOL SOLUBLE EXTRACTIVE	7.74%	6.55%	7.48%

Table 2: Physicochemical Analysis of churan

### III. EVALUATION OF HERBAL CHURAN:

#### Physicochemical Parameters of Churan:

Preliminary evaluation of formulations at different concentrations were carried out as follows:

#### Color and Order:

Color and order was examined by visual examination.

#### pH:

The pH of Harbal churan was determined by digital pH meter. 1g of churan powder was dissolved water and pH was measured.

#### Angle of repose:

The churan is allowed to fall on a flat surface from a funnel positioned at a certain height, the funnel is gradually moved upward in order to maintain a fixed height between the powder tip and bottom of funnel. The angle produce by powder on the surface is angle of repose is find.

Angle of repose

$$\tan \phi = \frac{h}{r}$$

$$\phi = \tan^{-1} \left( \frac{h}{r} \right)$$

Where, h= height of heap, r= radius of heap

SR.NO	ANGLE OF REPOSE	FLOW PROPERTY
1.	< 25	EXCELLENT
2.	25-30	GOOD
3.	30-40	PASSABLE
4.	>40	VERY POOR

Table 3: Angle of repose and flow property

#### IV. RESULT AND DISCUSSION

SR.NO.	EVALUATION PARAMETER	RESULTS		
		F1	F2	F3
1.	COLOUR	BROWNISH	YELLOWISH BROWN	BROWN
2.	TASTE	SOUR	SOUR	SOUR
3.	PH	6.4	6	6.5
4.	ASH VALUE	1.21%	2.63%	2.60%
5.	TAP DENSITY	0.659	0.658	0.652
6.	ANGLE OF REPOSE	35°	36.45°	37.44°
7.	TEXTURE	FINE	FINE	FINE

Table 4: Observation Table

The effectiveness of a herbal natural churan containing Terminalia chebula, Piper nigrum, Cinnamomum zeylanicum, Ocimum tenuiflorum, Zingiber officinale, Moringa oleifera and Emblica officinalis can vary depending on several factors, including person pathological condition and age. While these ingredients are commonly used as Ayurvedic and herbal respiratory stimulant there is limited scientific research specifically on the combination of these ingredients in churan form.

#### V. CONCLUSION:

The present study, we formulated an herbal churan containing Terminalia chebula, Piper nigrum, Cinnamomum zeylanicum, Ocimum tenuiflorum, Zingiber officinale, Moringa oleifera and Emblica officinalis which is traditionally used in diseases related to respiratory system. The

combination of above of all mentioned herbs shows a potential efficacy to words all problem related to birthing and proved the tremendous immunity for respiratory diseases. Terminalia chebula plays major role amongst other herbs in our composition which shows anti-oxidant, anti-inflammatory and immune booster property. This natural herbs are recognize for their anti-oxidant, anti-inflammatory and immune buster property. Which helps an individual to create a resistance to were diseases of respiratory system. All the herb used to formulate the herbal natural churan are safer then generic commercial medication and the physiochemical evaluation showed ideal result.

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