

A Literature Review on Herbs used in Cough Medication

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Abstract

Review Article

Cough refers to a powerful explosive expiration that clears the tracheobronchial tract of fluids and foreign materials. Given the high frequency of cough in both children and adults, the goal of this review paper was to document the plants used to cure and relieve cough in traditional culture and ethnobotany. The issues arising from the use of traditional opioid antitussive medications, such as codeine and codeine-like compounds, to treat cough in a variety of respiratory disorders. Medicinal plants have the potential to provide compounds with strong antitussive efficacy and little side effects. Specification of active compounds responsible for therapeutic action, as well as their measurement in healing medications, are recent advancements in modern phytotherapy, allowing for treatment rationalisation, particularly dose and monitoring of unwanted effects. The purpose of this review is to discuss the current state of the plant that is utilised as a source of food, cough-suppressing antitussives and expectorants, as well as their active components

Keywords: Cough, Antitussive activity, Medicinal plants.

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1. INTRODUCTION

Cough medications is used to not only suppress the cough, but also to relieve the discomfort caused by coughing repeatedly. Extrathoracic symptoms such back pain, headaches, fever, and malaise may warrant symptomatic treatment. Treatment for a productive cough may include correcting the abnormalities that cause sputum production or changing the composition of the secretions to make expectoration simpler. Therapy is required to treat the underlying pathology or reduce the frequency of a non-productive cough. Many patients are particularly interested in the latter, and hence seek out an antitussive that can also help them control their cough.

Cough Types: The simplest way to comprehend coughs is to categorise them as either wet or dry.

Wet coughs are mucus-filled coughs that commonly occur during colds, flu, pneumonia, and other illnesses. It is a method of removing mucus from the respiratory system, and the person feels sticky and wet at the back of their throat.

Coughs that do not produce mucus leave a dry, tickling sensation in the throat. They're frequently the

result of inflammation in your digestive tract caused by allergies, croup, asthma, and other conditions.

You can choose an appropriate wet cough syrup or a dry cough syrup developed to treat the specific problem depending on the type of cough.

2. THE ACTIVE INGREDIENTS IN HERBAL MEDICINAL MEDICINES THAT HAVE AN ANTITUSSIVE AND EXPECTORANT EFFECT ARE LISTED BELOW.

2.1 SAPONINS

Saponins have one of the best-understood modes of action among herbal medications, with the ability to alter cough parameters and phlegm quality. Saponins are heterosides with glycid and non-glycid components. Its pharmacological actions are due to the non-glycid component, known as the aglycone. The saponins irritate the vagal nerves reflexively when therapeutic amounts are given orally. Increased phlegm secretion in the airways arises as a result of this. Furthermore, the respiratory and cough centres are inflamed, leading to increased expectoration. Higher quantities of saponins, on the other hand, can cause emesis, diarrhoea, and bleeding by irritating the mucous membranes of the stomach and intestine

2.2 FLAVONOIDS

Flavonoids are made up of flavonol glycosides and their aglycones. Flavonoids can reduce the activity of cholinesterase and xanthinoxidase by inhibiting oxidative and reductive reactions. Flavonoids' therapeutic effects are utilised to treat cardiovascular disorders, thromboembolic consequences, and renal ailments combined with antitussive-expectorant activity, are likely to contribute to the positive and beneficial effects.

2.3 ESSENCES

Essences are aromatic terpene-containing molecules. They are volatile chemicals that cause irritation in a variety of tissues throughout the body, including the airway epithelium, by stimulating secreting cells directly. They have antibacterial and antiphlogistic properties while also speeding up the movement of the ciliary epithelium. *Fructus anisi*, *Fructus foeniculi*, *Fructus melissae*, *H. seu*, and *Fructus thymi* are used to make the essence medications. Nausea, allergic responses, and renal parenchyma damage are some of the side effects that might occur after using aetheric oils.

2.4 MUCILAGE

The so-called slime medicines are currently very commonly utilised in upper airway inflammations associated with dry irritating cough. *Radix*, *Folium et Flos althaeae*, *Folium et Flos malvae*, and *Folium plantaginis* are the most well-known. When slime

medicines come into touch with the airway mucous membrane, they form a protective layer on the surface that reduces irritation of cough receptors (rapidly adapting cough receptors, RARs) on myelinated vagal nerve fibres as well as irritation of nerve endings of non-myelinated C-fibers. This reduces the irritation caused by inflammatory mediators or foreign materials on the damaged mucous membrane, which causes cough.

2.5 GUMS

Gums are translucent, amorphous natural plant hydrocolloids that are typically formed in higher plants as a protective after-injury substance. The herbal gums exhibit a considerable antitussive action. It was investigated the antitussive properties of peach gum. Cough-suppressing activity is likely to be similar to that of mucilage.

2.6 PECTIN

Pectin is described as a stomach mucous membrane protector. The mechanism of pectins' antitussive action is unknown, but under experimental conditions, pectins isolated from citrus fruits (30.2 percent) had an antitussive effect comparable to that of peripherally acting antitussives such as prenoxidiazine (23.7 percent) and dropropizine (27.4 percent) (dose of 50 mg/kg b.w). Table-1, showed list of herbal plants used to treat cough. Table-2 showed list of herbal marketed formulations used to treat cough

Table-1: List of Herbal Plants used to Treat Cough

S. No	Scientific Plant Name	Common Name
1	<i>Abies webbiana Lindl.</i>	(Indian Silver Fir)
2	<i>Abrus precatorius</i>	(Indian liquorice)
3	<i>Acacia concinna wild.</i>	(Shikakai)
4	<i>Acorus calamus L.</i>	(Sweet flag)
5	<i>Adhatoda vasica L. Nees</i>	(Vasaka)
6	<i>Agaricus albus Linn</i>	(Purging agaric)
7	<i>Ailanthus excelsa Roxb.</i>	(Tree of heaven)
8	<i>Alhagi pseudalhagi Bieb. Desv</i>	(Camel thorn)
9	<i>Allium odorum L.</i>	(Sweet leek)
10	<i>Allium porrum Linn</i>	(Leek)
11	<i>Althae officinalis Linn</i>	(Marshmallow)
12	<i>Amomum aromaticum Roxb.</i>	(Bengal cardamom)
13	<i>Anagallis arvensis Linn.</i>	(Chari saben)
14	<i>Andrographis paniculata Burm.f.Nees</i>	(Kalmegh)
15	<i>Artemisia Vulgaris Linn.</i>	(Arbaaka)
16	<i>Asparagus racemosus Wild</i>	(Shatavari)
17	<i>Azima tetracantha Lam.</i>	(Mistletoe)
18	<i>Bacopa monnieri L.</i>	(Brahmi)
19	<i>Balanites aegyptiaca Linn.Delile.</i>	(Desert date)
20	<i>Balsamodendron Myrrha Nees.</i>	(Surasa, Barbara)
21	<i>Belamcana chinensis L.</i>	(Leopard lily)
22	<i>Bischofia javanica B.</i>	(Vinegar wood)
23	<i>Blepharis linariaefolia Pers.</i>	(Naethira Poondu)
24	<i>Bulbus of Fritillaria wabuensis. Blumea Balsamifera L. DC</i>	(Kukur Sunga)
25	<i>C. longa Linn</i>	(Turmeric)

S. No	Scientific Plant Name	Common Name
26	<i>Caesalpinia Bonducella F.</i>	(Kuberakshi)
27	<i>Cassia Tora L.</i>	Cakunda)
28	<i>Celosia Cristata Linn.</i>	(Cock's comb)
29	<i>Cephaelis ipecacuanha Rich.</i>	(Ipecac)
30	<i>Chelidonium major L.</i>	.(Tetter wort)
31	<i>Chondrus crispus L.</i>	(Pearl Moss)
32	<i>Cimicifuga racemosa Nutt.</i>	(Black snakeroot)
33	<i>Citrus japonica Thunb.</i>	(Marumi Kumquat)
34	<i>Coleus amboinicus Lour.</i>	(Indian borage)
35	<i>Cressa cretica Linn</i>	(Rudanti)
36	<i>Curcuma Zedoaria Berg. Rosc.</i>	(Cochin turmeric)
37	<i>Eclipta alba L.</i>	(Bhangra)
38	<i>Eucalyptus globulus Labill</i>	(Australian Fever)
39	<i>Euphorbia antiquorum Linn.</i>	(Indian spurge)
40	<i>Euphorbia hirata L.</i>	(Snakeweed)
41	<i>Euphrasia officinalis Linn.</i>	(Eyebright)
42	<i>Foeniculum vulgare Meller</i>	(Fennel)
43	<i>Ginkgo biloba L.</i>	(Balkuwari)
44	<i>Glycyrrhiza glabra Linn.</i>	(Liquorice)
45	<i>Inula helenium L.</i>	(Tu-mu-xing)
46	<i>Kaempferia galanga L.</i>	(Black thorn)
47	<i>Lindera benzoin L. Blume</i>	(Spicewood)
48	<i>Lobelia inflata Linn.</i>	(Indian Tobacco)
49	<i>Mucuna pruriens (1) dc</i>	Velvet bean
50	<i>Marsilea minuta l.</i>	Water clover
51	<i>Ocimum sanctum Linn.</i>	(Tulsi)
52	<i>Oldenlandia umbellata</i>	Chay root
53	<i>Papaver rhoes L.</i>	(Red poppy)
54	<i>Paederia foetida Pimpinella anisum L.</i>	(Anise)
55	<i>Pistacia chinensis Bunge</i>	(Kakar singhi)
56	<i>Plantago lanceolata L.</i>	(Snake Weed)
57	<i>Platycodon grandiflorum Jacq. A. DC</i>	(Chinese bellflower)
58	<i>Polemonium reptans L. R</i>	(Bluebells)
59	<i>Polygala amara L.</i>	(Bitter milkworth)
60	<i>Polygala senega L.</i>	.(Sneca Snake root)
61	<i>Polygonum cuspidatum Sieb</i>	(Japanese Knotweed)
62	<i>Prunus armenica Linn</i>	(Wild Apricot)
63	<i>Sanguinaria canadensis Linne</i>	.(Bloodroot)
64	<i>Scoparia dulcis George A.</i>	Goat weed
65	<i>Sida rhombifolia L.</i>	(Indian hemp)
66	<i>Stemona alkaloids from Stemona tuberosa</i>	Wild asparagus
67	<i>Thymus vulgaris L.</i>	(Garden thyme)
68	<i>Viola odorata L.</i>	(Banafsaj)
69	<i>Withania Somnifera Dunal.</i>	(Ashwagandha)
70	<i>Zingiber officinale Rosc.</i>	(Ginger)
71	<i>Ficus racemosa</i>	Fig
72	<i>Passiflora incarnata</i>	Wild apricot
73	<i>Ionidium suffruticosam Ging.</i>	(Violaceae)
74	<i>Trichodesma indicum</i>	Indian borage
75	<i>Lagerstroemia parviflora leaf</i>	Small flowered ceape myrtle
76	<i>Drymaria cordata Willd.J</i>	Tropical chickwood
77	<i>Leucas lavandulaefolia</i>	leucas
78	<i>Jussiaea suffruticosa linn</i>	Senegal
79	<i>Asparagus racemosus root</i>	Shatavari

Table-2: List of Herbal Marketed Formulations used to Treat Cough

S. No	Herbal Formulation Name	Key Ingredients	Dosage	Images Of Formulation
1	Cough tablets	Tulsi - 170 Mg Ardusi - 170 Mg Sunth - 40 Mg Mari - 40 Mg Piper - 40 Mg Jethimadh -170 Mg Haladar - 170 Mg Excipients - Q.S.	1 tab. before one hour of meal twice a day	
2	Adulsa	Sweet Tulsi, Krishna Tulsi, Rama Tulsi, Safed van Tulsi, Kali van Tulsi Vasaka (Adulsa), Jeshthamadh (Yestimadhu), Kantakari, Sunth, Pudina, Karpoor, Pimpali	Adult- (10ml) two teaspoonfuls, three times a day, after meals.; Children: (5ml) one teaspoonful, three times a day.	
3	Dabur Honitus	Tulsi 50.0 mg, Mulethi 50.0 mg, Banaphsa 50.0 mg, Kantkari 50.0 mg, Talispatra 50.0 mg, Sunthi 25.0 mg, Pippali 25.0 mg, Vasaka 25.0 mg, Shati 25.0 mg Pudina Satva 3.0 mg Shudha Madhu (Honey) 1.75 g Flavoure Syrup Base q.s.	Children: 1 teaspoon 3-4 times a day, Adults: 2 teaspoons 3-4 times a day.	
4	Zhandu tulsi, ginger, mint syrup	Tulasi, shunti, maricha, pippali, tvak, pudina, sukshmaila, yasti, jatiphala, peppermint	3-4 times a day	
5	Himalayan tulsi syrup	Tulsi	Adults can consume 10mL of Tulasi Syrup twice a day; this is about two teaspoons full Children should take half as much twice a day for maximum results	
6	Herbal brews	Mulethi (Glycyrrhiza Glabra), Tulsi (Ocimum Sanctum), Trifla (Combination of 3 Herbs), Haldi (Curcuma Longa), Lasun (Allium Sativum), Manjistha (Rubia Cordifolia), Shikakai (Acacia Concinna), Trikatu (Piper Longum, Zingiber Officinale, Piper Nigrum) & Madhu (Honey).		

S. No	Herbal Formulation Name	Key Ingredients	Dosage	Images Of Formulation
7	Jiva cough syrup	Tagar – Valeriana wallichii, Draksha – Vitis vinifera, Lodhra – Symplocos racemose, Kutaj – Hollarrhena antidysenterica, Kiratatikta – Swartia chirata, Kutki – Picrorrhoea kuroa, Amalaki – Emblica officinale, Vasa – Adathoda vasika, Guduchi – Sida cordifolia, Yashtimadhu – Glycyrrhiza glabra	Take 10-20 ml syrup twice a day or as directed by the physician.	
8	Tragutan tablets	Eucalyptol 100mg, Ginger essential oil 0.5mg, Qin essential oil 0.18mg, Menthol 0.5mg	Adults each time 2 tablets, 3 times a day. Children over 2 years old: 1 capsule per time, 2-3 times a day.	
9	Coldix syrup	1.1.1.1. Vasaka (<i>Adhatoda vasica</i>), Yastimadhu (<i>Glycyrriza glabra</i>), Kantakari (<i>Solanum surattense</i>), Hapusha (<i>Juniperus communis</i>), Shleshmantaka (<i>Cordiamyxa</i>) 1.1.1.2. Kasamarda (<i>Cassia occidentalis</i>), Haridra (<i>Curcuma longa</i>), Shunthi (<i>Zingiber officinale</i>), Banafsha (<i>Viola odorata</i>), Draksha (<i>Vitis vinifera</i>), Madhu/ Pure Honey etc.	Adults: 2 Teaspoonful (10 ml) 2-3 times a day Children: ½ - 1 teaspoonful (2.5 – 5 ml) 2-3 times a day	
10	D'cold natural syrup	Haridra (<i>Curcuma longa</i>)500.0 mg, Kulanjana (<i>Alpinia galanga</i>)500.0 mg, Shati (<i>Hedychium spicatum</i>) 400.0 mg, Vasa (<i>Adhatoda vasica</i>)300.0 mg, Yasti (<i>Glycyrrhiza glabra</i>) 200.0 mg, Tulsi (<i>Ocimum sanctum</i>)200.0 mg, Pippali (<i>Piper Longum</i>)50.0 mg, Sunithi (<i>Zingiber officinale</i>)30.0 mg, Navsadar (<i>Ammonium chloride</i>)30.0 mg, Pudina Ka Phool (<i>Mentha Viridis</i>)2.0 mg, Madhu (Honey)1.0 mg, Flavoured syrup base Q.S to 5 ml.		

S. No	Herbal Formulation Name	Key Ingredients	Dosage	Images Of Formulation
11	Ayukhas syrup	Honey, mulethi, tulsi		
12	Natural Kufma syrup	Kakrashringi, Tulsi, Honey, Vasaka, Pipali, Triphala, Nagarmotha, Sonth, Zufa, Apamarg, Gojiha		
13	Koflet	Ginger, Cloves, Cardamom And Cinnamon, Cane Sugar, Liquid Glucose.	One lozenge three-four times a day, or as directed by the physician.	

CONCLUSION

Traditional medicine and complementary and alternative medicine have become more popular in both developed and developing countries during the last two decades. Because of the current global interest in traditional medicine, many medicines used by diverse ethnic groups around the world are being rapidly developed and studied. The information is kept in the form of a common name for the botanical name, a family name, a part used, an active constituent, and a reference. New plants with antitussive and expectorant action are being studied by scientists from many sectors. Finally, the current study finishes by presenting a holistic view of herbal pharmaceuticals for the treatment of cough, arguing that both crude and polyherbal formulations are effective alternatives to modern cough medications, which have several negative effects. This study also suggests that clinical studies on these polyherbal formulations, as well as individual crude medicines, could be conducted in the future to provide clinical evidence for employing these substances in the treatment of cough.

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