

**REVIEW ON HERBAL USED FOR RESPIRATORY AILMENTS THAT MAY BE USEFUL IN COVID 19**

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**Article Received on 20/05/2020**

**Article Revised on 10/06/2020**

**Article Accepted on 30/06/2020**

## **ABSTRACT**

As Corona virus Covid 19 reason intense, mild upper respiratory contamination (common cold). Corona virus are round or pleomorphic wrapped particles containing single-abandoned (positive-sense) RNA related with a nucleoprotein inside a capsid involved network protein. The envelope bears club-formed glycoprotein projections. Corona virus (and toroviruses) are grouped together based on the crown or corona like appearance of the envelope glycoproteins, and on trademark highlights of science and replication. The vast majority of the home grown like tulsi, ginger, turmeric, cumin, adhatoda vasica and numerous different herbs can be used to decrease the side effects of corona virus. Transmission is generally through airborne beads to the nasal mucosa. Infection recreates locally in cells of the ciliated epithelium, causing cell harm and aggravation. Colds brought about by corona virus can't be recognized clinically from different colds in any one person. Research center finding might be made based on immune response titers in matched sera. The infection is hard to seclude. Nucleic corrosive hybridization tests (counting PCR) are presently being presented. Treatment of regular colds is indicative; no antibodies or explicit medications are accessible. Cleanliness measures and herbals use can diminish the pace of transmission.

**KEYWORDS:** Respiratory, corona virus, adhatoda vasica, turmeric.

## **INTRODUCTION**

Characteristic items have been a significant asset for keeping up life for a long time, as clear from Indian Ayurvedic literary works like Charak and Sushrut Samhita.

Current manufactured medications hold no guarantee in complete mending of these clutters. Rather than them, many objective explicit natural choices have been perceived because of properties like bronchodilatory, pole cell adjustment, calming, hostile to unfavorably susceptible, immunomodulatory just as inhibitory activity on go between of aggravation (leukotrienes, cyclooxygenase, cytokines and so forth.) In India, the customary Ayurvedic strategy for treating the respiratory issue incorporates house-hold herbs like turmeric (*Curcuma longa*), ginger (*Zingiber officinale*), cumin (*Cuminum cyminum*), vasaka (*Adhatoda vasica*), yashtimadhu (*Glycyrrhiza glabra*), and tulsi (*Ocimum sanctum*) as decoctions and tinctures or as home grown beverage. These herbs can be helpful in treatment of covid 19 (coronavirus) side effects.

Coronaviruses are found in avian and mammalian species. They take after one another in morphology and compound structure: for instance, the coronaviruses of

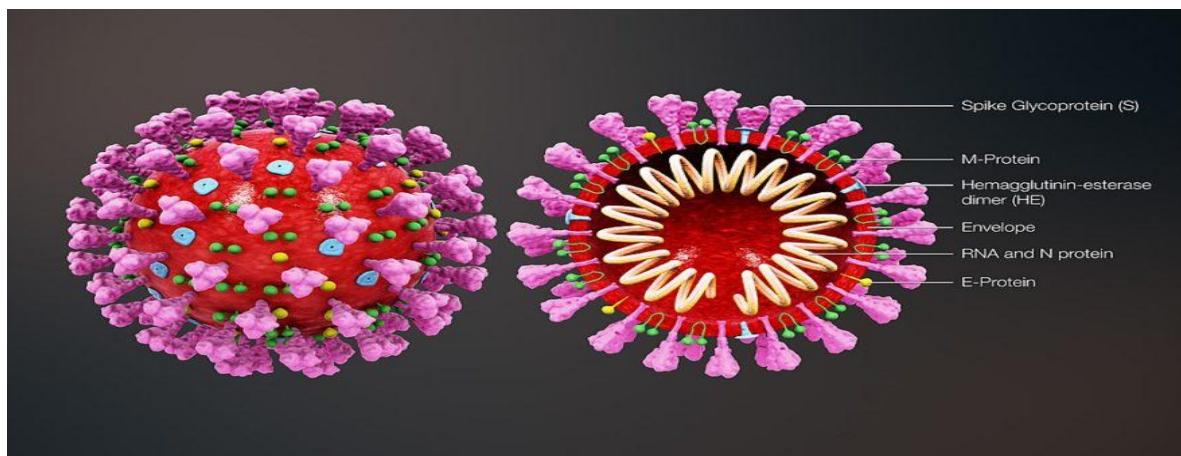
people and steers are antigenically related. There is no proof, in any case, that human coronaviruses can be transmitted by creatures. In creatures, different coronaviruses attack a wide range of tissues and cause an assortment of ailments, yet in people they are just demonstrated to cause mellow upper respiratory diseases, for example normal colds. On uncommon events, gastrointestinal coronavirus disease has been related with flare-ups of looseness of the bowels in youngsters, yet these enteric infections are not all around described. Clinical Appearances.

Coronaviruses attack the respiratory tract through the nose. After a hatching time of around 3 days, they cause the side effects of a typical cold, including nasal obstacle, sniffling, runny nose, and once in a while hack. The ailment settle in a couple of days, during which infection is shed in nasal discharges. There is some proof that the respiratory coronaviruses can cause ailment of the lower aviation routes yet it is far-fetched this is because of direct attack. Different signs of malady, for example, numerous sclerosis have been ascribed to these infections yet the proof isn't obvious.

## Structure

Coronavirus virions are circular to pleomorphic encompassed particles. The envelope is studded with anticipating glycoproteins, and encompasses a center comprising of framework protein encased inside which is a solitary strand of positive-sense RNA ( $\text{Mr } 6 \times 10^6$ )

related with nucleoprotein. The envelope glycoproteins are answerable for connection to the host cell and furthermore convey the primary antigenic epitopes, especially the epitopes perceived by killing antibodies. OC43 likewise has a haemagglutinin.



## Classification and its types

The coronaviruses were initially gathered into the family Coronaviridae based on the crown or radiance like appearance given by the glycoprotein-studded envelope on electron microscopy. This arrangement has since been affirmed by interesting highlights of the science and replication of these infections. Most human coronaviruses can be categorized as one of two gatherings: 229E-like and OC43-like. These vary in both antigenic determinants and refined prerequisites: 229E-like coronaviruses can normally be detached in human early stage fibroblast societies; OC43-like infections can be confined, or adjusted to development, in nursing mouse mind. There is minimal antigenic cross-response between these two kinds. They cause free plagues of unclear ailment. Coronaviruses are named for the crown-like spikes on their surface. There are four principle subgroupings of coronaviruses, known as alpha, beta, gamma, and delta. Human coronaviruses were first distinguished in the mid-1960s.

The seven coronaviruses that can contaminate individuals are:

Common human coronaviruses

1. 229E (alpha coronavirus)
2. NL63 (alpha coronavirus)
3. OC43 (beta coronavirus)
4. HKU1 (beta coronavirus)

Other human coronaviruses

5. MERS-CoV (the beta coronavirus that causes Center East Respiratory Disorder, or MERS)
6. SARS-CoV (the beta coronavirus that causes extreme intense respiratory condition, or SARS)
7. SARS-CoV-2 (the novel coronavirus that causes coronavirus ailment 2019, or COVID-19)

Individuals around the globe normally get contaminated with human coronaviruses 229E, NL63, OC43, and HKU1.

Once in a while coronaviruses that contaminate creatures can advance and make individuals wiped out and turn into another human coronavirus.

Three ongoing instances of this are 2019-nCoV, SARS-CoV, and MERS-CoV.

## Multiplication

It is felt that human coronaviruses enter cells, transcendently, by explicit receptors. Aminopeptidase-N and a sialic corrosive containing receptor have been recognized to act in such a job for 229E and OC43 separately. After the infection enters the host cell and uncoats, the genome is deciphered and afterward interpreted. A one of a kind element of replication is that all the mRNAs structure a "settled set" with normal 3' closes; just the extraordinary segments of the 5' closes are deciphered. There are 7 mRNAs created. The most brief mRNA codes for the nucleoprotein, and the others each direct the union of a further portion of the genome. The proteins are collected at the cell film and genomic RNA is fused as the develop molecule frames by growing from inward cell layers.

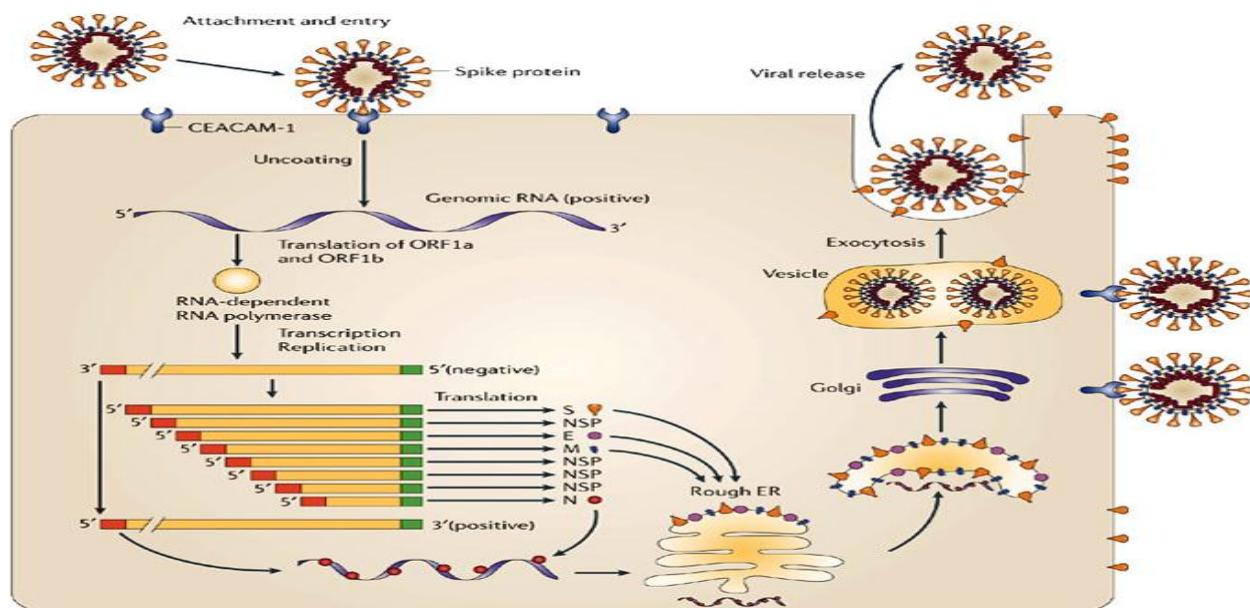


Fig. 2:

### Pathogenesis

Studies in both organ cultures and human volunteers show that coronaviruses are incredibly fussy and become distinctly in separated respiratory epithelial cells. Infected cells become vacuolated, show harmed cilia, and may frame syncytia. Cell harm triggers the creation of fiery middle people, which increment nasal discharge and cause nearby aggravation and expanding. These reactions thus invigorate wheezing, hinder the aviation route, and raise the temperature of the mucosa.

### Host defenses

Despite the fact that mucociliary movement is intended to free the aviation routes from particulate material, coronaviruses can effectively contaminate the shallow cells of the ciliated epithelium. Just around 33% to one portion of contaminated people create manifestations, nonetheless. Interferon can secure against contamination, however its significance isn't known. Since coronavirus contaminations are normal, numerous people have explicit antibodies in their nasal emissions, and these antibodies can secure against disease. The majority of these antibodies are coordinated against the surface projections and kill the infectivity of the infection. Cell-interceded insusceptibility and hypersensitivity have been minimal contemplated, however may assume a job.

### The study of disease transmission

The study of disease transmission of coronavirus colds has been minimal examined. Rushes of disease go through networks throughout the winter months, and regularly cause little flare-ups in families, schools, and so forth. Insusceptibility doesn't endure, and subjects might be re-tainted, once in a while inside a year. The example therefore varies from that of rhinovirus contaminations, which top in the fall and spring and for

the most part evoke enduring resistance. Around one of every five colds is expected to coronaviruses.

The pace of transmission of coronavirus diseases has not been concentrated in detail. The infection is generally transmitted through inward breath of sullied beads, however it might likewise be transmitted by the hands to the mucosa of the nose or eyes.

### Diagnosis

There is no dependable clinical technique to recognize coronavirus colds from colds brought about by rhinoviruses or less normal operators. For investigate purposes, infection can be refined from nasal swabs or washings by vaccinating organ societies of human fetal or nasal tracheal epithelium. The infection in these societies is identified by electron microscopy or different techniques. The most valuable technique for research facility conclusion is to gather matched sera (from the intense and gaining strength periods of the ailment) and to test by ELISA for an ascent in antibodies against OC43 and 229E. Supplement obsession tests are unfeeling; different tests are badly designed and can be utilized distinctly for one serotype. Direct hybridization and polymerase chain response tests for viral nucleic corrosive have been created and, especially with the last mentioned, are the most touchy examines right now accessible for identifying infection.

### Control

Albeit antiviral treatment has been endeavored, the treatment of coronavirus colds stays indicative. The probability of transmission can be diminished by rehearsing sterile measures. Antibodies are not right now accessible.

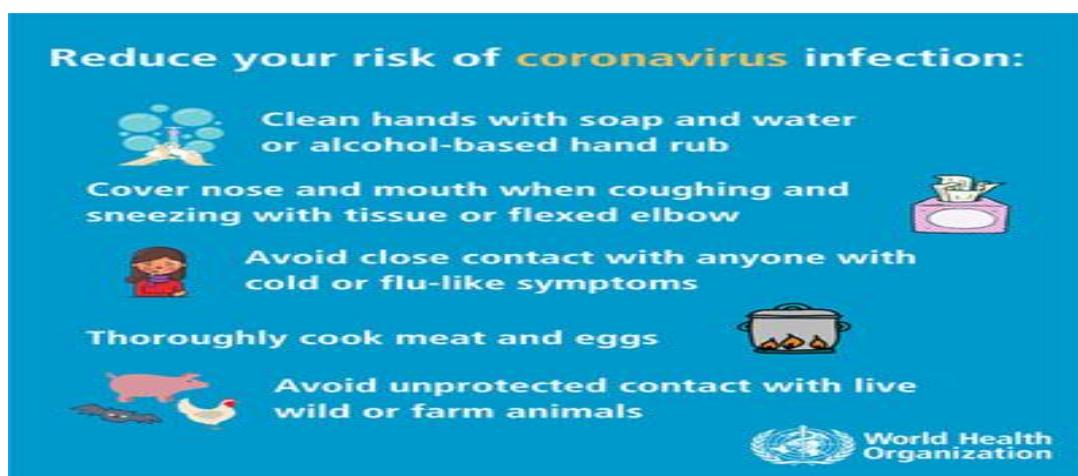


Fig. 3.

### Indian Herbs Can Utilized As Treatment For The Side Effects Of Coronavirus (Covid 19)

In this present audit, to toss light into the significance of home cures against respiratory diseases and, the different restorative properties controlled by herbs. The angles secured incorporate recorded foundation, customary uses and, innovative work subtleties.

#### Turmeric (*Curcuma Longa*)

Turmeric (normal name – haldi, manjal) is the meaty orange piece of *Curcuma longa*, a rhizomatous herbaceous lasting plant. Its development is high in China, India, Indonesia, Thailand and the tropical areas. The state Disintegrate, in Tamil Nadu is the world's biggest maker of turmeric. Indian turmeric holds high substance of significant bioactive mixes and holds incredible guarantee as a house-hold medication in the treatment of respiratory afflictions, yet in addition with germ-free, mitigating, and hostile to ulcer properties. The root yields an unpredictable oil containing turmerone and sesquiterpenes, and it additionally has shading specialists named as curcuminoids. Turmeric discovers application as a home grown medication for stomach related clutters, jaundice, liver and gallbladder issues, and respiratory diseases like hack, runny nose, asthma, bronchial hyperactivity and sensitivity. Powdered turmeric is blended in with bubbled milk and used to fix hack and cold. It has been accounted for to have cell reinforcement property when devoured by us through nourishment. A teaspoonful of turmeric powder blended in with a touch of dark pepper powder and nectar or milk is devoured around evening time for 3 – 5 days for treating cold and hack. It searches free radicals and forestalls lipid peroxidation in hydrogen peroxide-actuated oxidatively focused on renal cells. Hydro-ethanolic concentrate of Turmeric has indicated inhibitory activity against actuation of human dendritic cells in light of fiery cytokines. A few *in vivo* investigations have demonstrated the therapeutic significance of Turmeric against oral malignancy, stomach disease, detoxification of cancer-causing agents, and hindrance of tumor development. In diabetic rodents, it is additionally found to diminish oxidative worry by hindering increments in

thiobarbituric corrosive receptive substances and protein carbonyls, and brought back the cell reinforcement status to a decent state. The unstable oil got from Turmeric realizes sputum expulsion, alleviation from hack and forestalls asthma.

#### Ginger (*Zingiber Officinale*)

Ginger is a tropical plant developed in India, Malaysia, Southern China and Japan, and India is the world's biggest maker. It has a place with the family Zingiberaceae, referred to regularly as adrak, and has trademark fragrance and taste. It is a ground-breaking characteristic expectorant utilized in treating cold, hack and constant bronchitis. It contains 1-4% fundamental oil, sesquiterpene hydrocarbons, and gingerols (liable for the sharpness of ginger).

It has calming, hostile to viral, antinausea and antiemetic exercises. Ginger goes about as a carminative, gastrointestinal energizer and stimulant. Customary application includes admission of 20 ml of ginger juice blended in with betel leaves and nectar three times each day for three days to treat hack and cold. *In vivo* investigations have indicated ginger as hypolipidemic (ethanolic concentrate of ginger brought down cholesterol level in hares), chemoprotective (watery or ethanolic ginger concentrate demonstrated enemy of tumor properties in mice), and mitigating (oral organization of ginger oil to joint pain incited rodents demonstrated critical concealment of aggravation) operator.

It likewise demonstrated cell reinforcement potential in acetaminophen-prompted oxidatively focused on rodents.

#### Cumin (*Cuminum Cyminum*)

Cumin is local to northern Egypt and Turkey. It is a tropical plant developed as a rabi crop in territories where barometrical stickiness is low. Cumin is the seed acquired from a little, slim yearly herb whose central constituent of unstable oil is Cuminaldehyde (initiates spit). Its normal name is Jeera and is typically the fundamental flavor utilized in practically all Indian

dishes. It is an amazing bronchodilator and has antimicrobial, carminative, pain relieving, and antispasmodic properties. It decreases stomach gas and helps in processing and retention. It fixes regular cold (viral disease) by forestalling the hack arrangement in the respiratory framework. It contains nutrient C and iron in this way, supports the safe arrangement of the body.

### **Yashti-Madhu (*Glycyrrhiza Glabra*)**

Yashti-madhu is the dried roots and rhizomes of *Glycyrrhiza glabra* and is ordinarily known as Mulathee. It is an erect, lasting plant developed in sub-tropical and warm mild districts of Mediterranean nations and China. The significant concoction constituents of this plant incorporate triterpene saponins like Glycyrrhizin which happens as a blend of potassium and calcium salts and renders the plant its sweet taste. Customary application includes its utilization against sore throats and as an expectorant in treating hacks and bronchial catarrh. It is additionally a purgative and antiviral medication with therapeutic properties of kidney stones, coronary illness, loss of craving and snake chomp. It additionally has cancer prevention agent and antipyretic properties. The watery and ethanolic concentrates of this plant have demonstrated nitric oxide-, superoxide-and hydroxyl - radical searching exercises. The hydro-alcoholic concentrate of this plant likewise showed cell reinforcement property through adjustment of respiratory explosion of human actuated neutrophils.

### **Tulsi (*Ocimum Sanctum*)**

Tulsi is the basic name for "Consecrated Basil" and has a place with the family Lamiaceae. It is an erect, herbaceous, stretched, biennial or triennial plant, 30 – 75 cm high. In India, two kinds of this species can be seen – the green Sri Tulsi and the purple Krishna Tulsi. The plant is venerated by Hindus and is a typical plant developed in practically all Indian houses. Its utilization goes back to 5000 BC, wherein conventional advantages from this plant discover notice in Charak Samhita and Rigveda. The leaves of this plant contain a splendid yellow unstable oil made out of sesquiterpenes (the principle one is Eugenol) and monoterpenes. This oil has demonstrated antibacterial and insecticidal properties. Basic oil got from this sweet-smelling plant is utilized as aromas and, flavors in nourishment enterprises. It has antifertility, hepatoprotective, antidiabetic, anticancer, and cardioprotective properties. Family unit cure includes taking eleven Tulsi leaves with four dark pepper seeds to treat Jungle fever and Intermittent fever; juice of leaves blended in with nectar and ginger for treating bronchitis, asthma, flu, hack and cold, by assembling bodily fluid. It is additionally successful in restoring ringworm and other skin maladies. Pills arranged from squashed blend of new Tulsi leaves, *Leucas aspera* leaves, *Momordica charantia* leaves and dried products of Flautist longum are prompted two times every day for multi week for treating asthma. Since, Tulsi is immunomodulatory, antitussive and expectorant in real life, it finds wide applications in pharma organizations

for assembling more current medications and definitions containing this plant against hack, intense and constant bronchitis, asthma and other respiratory afflictions. Immunomodulatory activity is brought out by this plant through an expansion in Interferon- $\gamma$ , IL-4, T-partner cells, NK cells, along these lines decreasing bacterial burden through phagocytosis. In vivo examinations on histamine and acetylcholine-incited pre-convulsive dyspnea in guinea pigs have indicated the counter asthmatic movement of half aqueousethanolic concentrate of Tulsi. It has been accounted for to be a solid cancer prevention agent against oxidative pressure, genotoxicity and imbalanced xenobiotic metabolizing compounds incited by 7,12-dimethylbenz [a] anthracene in rodents.

### **Adhatoda Vasica**

The herb Adhatoda vasica is a deep rooted plant known for its promising remedial activity against respiratory clutters. Its normal name is Vasaka. It is a thick bush developing to a tallness of 1 to 3 meters. From a separation, the blossoms of this plant look like opened jaws of a lion. The juice of leaves is a solution for loose bowels, looseness of the bowels and glandular tumor. It has been generally utilized in the administration of unfavorably susceptible conditions and bronchial asthma. Research did in the course of the most recent three decades mirrors the way that this present plant's alkaloid-rich leaves have respiratory energizer movement. It helps in restoring basic cold, laryngitis, bronchitis, flu, spasm and dry hack, pertussis, feed fever, asthma and sinusitis . Some researcher have revealed that the leaves of this plant contain a basic oil and the quinazoline alkaloids Vasicine, Vasicinone and deoxyvasicine. The most significant alkaloid present in this plant is Vasicine (from leaves) which achieves the vast majority of its bronchodilatory impact. At low focuses, this compound incites bronchodilation and unwinding of tracheal muscle. In addition, Vasicine indicated bronchodilatory movement both in vitro and in vivo. A mix of Vasicine and Vasicinone (1 : 1) demonstrated a bronchodilatory impact too. Clinical preliminaries did with the business medicate Stormy (contains Vasicine and Vasicinone) didn't show any reactions while treating bronchial asthma. The properties of this alkaloid Vasicine have been used in building up its subordinate - the medication Bisolvon. Intravenous organization of this medication indicated freeing from the aviation routes by diminishing bodily fluid discharge and opening of air entries. In vivo examinations have demonstrated its inhibitory activity against antigen-actuated pole cell degranulation and histamine discharge just as bronchodilatory movement. In vitro investigations have demonstrated Adhatoda vasica as a cancer prevention agent through its compelling enlistment of Glutathione-S-Transferase and DTdiaphorase in the lungs and fore stomach, and Superoxide dismutase and Catalase compounds in kidneys. Other than being an intense bronchodilator, it is likewise a hypotensive and against genotoxic specialist. Pre-introduction of Swiss pale skinned person mice to

Adhatoda vasica followed by cadmium chloride treatment demonstrated diminished lipid peroxidation

and xanthine oxidase levels. It additionally indicated an expansion in Glutathione levels, subsequently.

### Some Other Herbs That Can Also Be Used For Treatment of Covid 19 Symptoms.

Plant Name	Part Used	Family	Use
<i>Cymbopogon citratus L. (Lemon grass)</i>	Leaves	Poaceae	Relieve cough and nasal congestion
<i>Cedrus deodara (deodar)</i>	wood	Pinaceae	Pulmonary Disorder
<i>Elettaria cardamomum (Ellaichi)</i>	Seeds	Zingiberaceae	To cure cough and throat problems
<i>Ferula assafoetida L(Hing)</i>	Rhizome	Umbelliferae	Powdered rhizome is taken orally against cough and asthma
<i>Geranium wallichianum L (Ratanjog)</i>	Rhizome	Geraniaceae	Rhizome decoction is used to cure cough
<i>Papaver somniferum L.</i>	Fruits	Papaveraceae	Tea made from dried fruit is also effective in asthma, cough and other diseases of the respiratory tract.
<i>Picrorhiza kurroa</i>	Rhizomes	Scrophulariaceae	Decoction of rhizomes is used in the treatment of respiratory conditions such as asthma and bronchitis
<i>Tussilago farfara L.</i>	Leaves	Asteraceae	A decoction made of leaves, is taken orally against asthma and cough.

### CONCLUSION AND FUTURE PROSPECTS

This present data on customary just as test investigation of the above herbs demonstrates them to be promising in treating respiratory diseases. Further investigations should be taken up so as to discover a detailing with an advanced blend of these plants and investigate their component of activity, in this way pointing towards decrease just as progressive destruction of respiratory illnesses from our nation.

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