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REVIEW ARTICLE

Role of Botanical Herbs Used in Covid-19 Treatment and Cure

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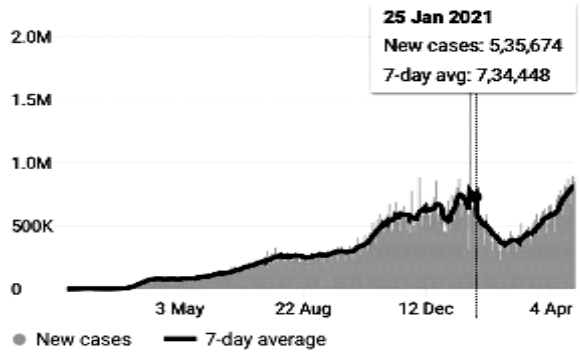
ABSTRACT

Corona 2019 (COVID-19) is a new infectious disease caused by acute respiratory syndrome corona virus 2 (SARS-CoV-2) which belongs to the family of corona viruses. The first case appeared in December 2019, and the disease has transformed into a pandemic. Physical disability control is one of the main parts that play a role in its disease and leads to adverse effects for COVID-19 patients. At present, people believe taking herbal treatment that can stop COVID-19. Medicinal plants can distribute as the therapeutic agents so it can help people to fight against the COVID-19 disease by boost their immunities. And such as, it can help to decrease the death rate that are linked with SARS-CoV-2 infections. So, in this analysis, we can make an effort to combine and talk about of different kind of traditional medicinal plants and their biological properties that can help to build-up our immune system and also play a biggest role in the fight against the viral infections including COVID-19. This document will help researchers and industry to recognize and assess in the making medicinal herb that can meet their needs in a variation of applications including herbal / ayurvedic antiviral products, anti-bacterial/antimicrobial design, immune-potentiator development, sanitization and sanitization programs.

Keywords: Medicinal plants; The immune system; Virus; COVID-19; Traditional medicine and herbal remedies.

INTRODUCTION

The ongoing pandemic of COVID-19 that is spreading across the countries starts in Wuhan, China. It is the single starting point of this most communicable disease is a novel corona virus, called severe acute respiratory syndrome corona virus 2 (SARS-CoV-2), which is the 7th known virus of the 'CORONAVIRIDAR' family.



A current detail by the World Health Organization stated that there are now more than 152 million confirmed cases and the death rates from more than three million people worldwide. The United States of America now has the highest rates of COVID-19 cases (more than 32 million cases and more than 500,000 death cases), followed by India (nearly 19 million cases and more than 1 thousand death cases -200) and Brazil (more than 14 million cases and 400 thousand death cases). The quick open out of the disease is mostly through the close contact with infected person with respiratory droplets from sneezing or coughing. There are two other methods of transfer the virus, including contact and aerosol transference. In the present circumstances of shortages of any proven CO / CID, antiviral and immune booster herbal medicines, extracts and compounds could be a good solution that could help reduce the global temporality rate connected with COVID-19.

India has already issued 'self-care' guidelines for health measures to cure and increase the immune system with particular reference to respiratory health using "Traditional and Natural Medicines". This will improve the use of dietary supplements and herbs as additional COVID-19. Currently, there is no specific drug for COVID -19. Since, a patient's immune system has played a main role in COVID-19 infection. Herbal treatment , which have a immune-booster effects .So ,That can be more effective and preventive factors and contain some active, anti-bacterial or anti-bacterial, anti-inflammatory and anti-inflammatory properties , such as Examples are: - Garlic (*Allium sativum*), Margosa neem (*Azadirachta indica*), Tulsi (Ocimum holy), Giloy (*Tinospora cordifolia*), Clove (*Syzgium aromaticum*), Ginseng (*Panax quinquefolius*), , black paper (*Piper nigrum*), Echinacea, Quinine, Curcumin, , Aloe, Liquorice, Nimbu, Sarso Oil, etc. Theses all herbs are known to be a rich in antioxidants, vitamins, minerals, carbohydrates, antivirals, antibacterials activities or properties, etc. These herbal / plant compounds(extract) are having the ability to regulate the bacterial response and result. Currently, there is no evidence, but various studies or detailed information have been done on herbal herbs or medicines that have the properties to boost the immune system and fight against the COVID-19 infection.

BIOLOGICAL PROCESS OF SARS-COV-2

All Corona cells are covered with the RNA cells with a good numbers thats replicate in the cytoplasm and to move their nucleocapsid to the center cell, so they attach their envelope to the center membrane.

Virus surface spike protein links SARS-CoV-2 infiltration into cells. The SARS-CoV-2 spike binds to its human receptor ACE2 (hACE2) through its receptor domain (RBD) and is proteolytically activated by human proteases.

SARS-CoV2 needs a specific receptor, the ACE2 receptor, to enter the cell. After the initial binding of the receptor, and covered cells need to enclose their envelope with the holding cell membrane to deliver their nucleocapsid to the target cell. The spike protein plays a double role in mediating receptor binding and membrane cohesion. The novel virus begins its process by interacting between the viral spike protein and the ACE2 receptor in the host cell and the process begins with the interaction between the RBD (receptor binding domain) within the S1 region of the protein virus and ACE2 receptor. After this interaction, the virus must be able to access the cytosol of the host cell, which is secreted by the acid-dependent proteolytic cleavage of the spike protein by cathepsin or another protease. The process then begins with the adhesion of the corona virus and the lining of the host cells. Spike protein cleavage occurs in two places within the S2 segment. The first cleavage is important to separate the RBD domains and the fusion of S protein. Alternatively exposing fusion peptide or adherence to S2. The interaction between the virus and the host cell usually occurs within the endosomes. Some viruses infect plasma membranes. Cleavage exposes the fusion peptide deposited in the membrane in S2. The formation of clusters leads to the mixing of bacterial membranes and tissues and results in the mixing and release of genetic material into the cytoplasm.

OVERVIEW ON CORONAVIRUS

SARS-CoV-2, short- term known as the 2019 novel coronavirus, a closed-loaded RNA virus belonging to the small family Ortho-coronavirinae, and the Coronaviridae family; The small family, Ortho-coronavirinae, includes the four sub-families, namely alpha-, beta-, delta- and gamma-coronavirus. It is Mainly, alpha and beta- CoVs infect mammals, and the main target of delta- and gamma-CoVs are bird species. And with the new breakout of SARS-CoV-2 infections are seven co-operative strains of the current virus can be identified. Most of these viruses frequently cause small infections; however, the SARS-CoV recognized in 2002, So the MERS-CoV point out in 2012 and the ongoing epidemic generated by SARS-CoV-2 have appear as lethal CoVs that can cause the serious respiratory infections. Genomic sequence analysis discloses, a close association with the emergence of SARS-CoV-2 and other beta-CoV. It is very similar to the Sarbecovirus subgenus containing SARS-CoV than that of MERS-CoVs of Merbecovirus subgenus origin. At the nucleotide level, SARS-CoV-2 shares the 79% homology with SARS-CoV, and only 50% have MERS-CoVs. In inclusion, SARS-CoV-2-like SARS-CoV uses the same ACE2 receptors to infect its host. Therefore, sites where ACE2 proteins are highly exposed in all those areas can be overlooked by SARS-CoV-2 respectively. These regions are subordinate to type II alveolar cells of the lungs and the small intestinal enterocytes. According to result, the epidemiological potential of SARS-CoV-2 are differing from the previous human outbreaks with local and global distribution

Although, SARS-CoV-2 has shown a positive effect on transmission, mortality rates (0.25% to 5%) are significantly lower compared to approx SARS-CoV. 10%. In addition, SARS-CoV-2 has a R0 (basic renewal number) of 4.7 to 6.6. This highly contagious state of SARS-CoV-2 is supported by the fact that its spike proteins (S) have 10 to 20 times greater affinity for ACE2 receptors than SARS-CoV. S-protein is a surface glycoprotein that assists the virus in attachment to host cells through its receptor binding domain (RBD). S-protein has several domains, one of which is called ectodomain and has two subunits, S1 and S2, forming a crown-like structure around the virus.

MEDICINAL HERBS AGAINST COVID-19

Echinacea purpurea **(L) Moench**

Common name : Purple cone flower
English name : Echinacea purpurea
Family : AstereceaE /Compositae.
Part used : Roots and Flower heads .

Chemical constituent: Glycosides, Achinacosides, Polysaccharides, Caffeic acid, Essential Oils, Flavonoids, Volatile oils, Vitamins and Minerals.

Uses : It is used as Antiseptic ; Stimulate immune system; Antibiotic activity; Anti-viral and Anti-fungal ; Mouth wash ; Anti-inflammatory; Improve white blood count .

Dosage : Daily dose of 6-9ml for up to maximum of 8 weeks.

Precaution : 1. Do not chew.
2. Do not exceed the stated dose.

Role of *Echinacea purpurea* (L) Moench :

It is a popular herb in Europe and North America because it shows promising results in combating bacterial infections. Many Native Americans use this type of vegetable to diagnose respiratory diseases.

It contains many bioactive chemicals such as chicoric acid and caffeic acid, alkylamides, and polysaccharides. It has an anti-inflammatory effect. So, the removal of echinacea was an exciting antivirus treatment against other infected viruses through direct activity.

It has an anti-inflammatory effect that inhibiting the production of pro-inflammatory cytokines caused by the virus, such as IL-6, IL-8, and TNF-α. It can be argued that, after the administration of echinacea in a group of infected cells, cytokine products are inhibited, such as adult cells with the RV1A virus. The cytokine level in "infected cells other than echinacea" was 625 ± 25 pg / mL of IL-6 and 2269 ± 38.5 pg / mL of IL-8, and "in infected cells with the echinacea group" was in 36.2 ± 1.2 pg / mL (IL-6) and 196.9 ± 3.8 pg / mL.

Allium sativum **Linn**

Common name : Lassan
English name : Garlic
Family : Liliaceae
Part used : Bulb
Chemical class : Flavonoids, Glycosides, Alkaloids

Chemical constituent: Allicin (Yellowish liquid); Aliin; Mucilage; Alpha-Glutamyl Peptides; Volatile oils; Amino Acid as –Methionine, Lucine, Cysteine, Vitamin C.

Uses : It is used as Anti-cancer ; Flavouring agent; Treat diabetes ; Expectorant ;Stimulant ;Hypertension ;fungal infection

Dosage : For B.P Extract 600-1200mg , 3.5-29mg Weekly for cancer prevention ,For fungal infections 0.4% .

Role of *Allium sativum* Linn.

Garlic and its preparations have been widely recognized as agents for prevention and treatment of cardiovascular diseases.

When garlic is chopped or crushed, allinase enzyme is activated and produce allicin from alliin (present in intact garlic). Other important compounds present in garlic homogenate are 1 -propenyl allyl thiosulfonate, allyl methyl thio-sulfonate, (E, Z)-4,5,9-trithiadodeca- 1,6,11-triene 9-oxide (ajoene), and y-L-glutamyl-S-alkyl- L-cysteine. .

Another widely studied garlic preparation is aged garlic extract. Sliced draw garlic stored in 15-20% ethanol for more than 1.5 year is refereed to aged garlic extract.

So, this whole activity is supposed to cause considerable loss of allicin and increased the activity of certain newer compounds, such as S-allylcysteine, sallylmercaptocysteine, allixin, N-0 -(Ideoxy- D-fructos- 1 -yl)-L-arginine, and selenium which are stable and significantly antioxidant. Steam-distilled garlic oil consists of the dually, allylmethyl, and dimethyl mono to hexa sulfides.

***Ocimum sanctum* L.**

Common name : Tulsi, Holy Basil
Family : Lamiaceae

Chemical constituent: Volatile oils mostly eugenol 21%; Methyl eugenol ; Caryophyllene ‘ , Carvacrol ; Cimiole ; Terpene ; Mucilage (mostly in seeds).

Use : It is used as Antipyretic ;Anti-diabetic ;Anti-bacterial ;Antiviral ;Antifungal ;Anti-inflammatory ;Anti-oxidant.

Mode of administration: Crushed tulsi leaves can be mixed with ginger juice and a little honey.

Role of *Ocimum sanctum* L.

Tulsi or holy basil (*Ocimum sanctum*) is one of the best medicinal herbs in the world. Tulsi leaves secrete T helper cells (a type of white cell) as well as natural killer cells, boosting the immune system. This sweet leaf can be your main way of protecting COVID-19.

It is a powerful germicide. Thanks to its phytochemicals and antioxidants, it can effectively detect germs, bacteria and viruses when they enter your body and destroy them.

It has been shown to improve the body's response to the threat of infection in stressful and depressed animals and in healthy individuals.

Tulsi is India’s favorite panacea for fever. It helps to treat fever and flu by promoting sweating and lowering the temperature.

It clears the mucus from the lungs and upper respiratory tract. It removes the moisture and toxins that can cause chest infections and fever. It can increase lung capacity and reduce active breathing.

It is often used for asthma, bronchitis, rhinitis and other respiratory conditions. Digestion is very important for our well-being as strong digestion will improve our body's ability to function properly. It is an excellent digestive stimulant. Provides liver excretion support: -Supporting the body's natural processes to remove toxins helps to avoid overloading of toxins and lead to illness.

***Tinospora cordifolia* L.**

Common name : Amrita , Tantrika
Family : Menispermaceae
Habitat : All over India

Parts : Bark , Leaves , Flower , Fruits , Seeds

Chemical constituent: Giloin ; Volartile oil ; Starch ;Berberine .

Uses: It is used as Anti-diabetic ; Immunomodulatory ,Anti-HIV ; Anti-Cancer ;Anti- toxic ;Anti-microbial ;Anti –oxidant .

Dosage: Powder - 2.5 to 5gm ; Decoction - 40ml ; Juice - 20ml ; Giloy satva - 500 to 1000mg.

Role of Giloy

Giloy means ‘Amrita’, which means the root of “immortality”. Its needy medicinal properties have time and again proved that giloy is one of the most effective natural medicines. Being rich in antioxidants, this herb can boost your immunity and prevent the onset of common infections and it helps in keeping you healthy.

It is an anti-pyretic in nature, It can prevent the onset of recurrent fever. Also, it can reduce the symptoms of some deadly diseases like dengue, malaria, swine flu etc. So, the next time you have fever, you can opt for a cup of giloy juice to get rid of it instead of popping up a paracetamol. Indigestion is one of the most common problems we go through. And, it can create a lot of discomfort. To take care of your digestive system and improve digestion, you can consume half a gram of giloy powder with amla daily in the morning. You can also try giloy juice with buttermilk. People who are suffering from piles can also consume giloy this way to get some relief.

***Azadirachata indica* L.**

Common name :Neem
Family : Meliaceae
Parts : Leaves ,Bark , Stem., Seed , Oil ,

Chemical constituent :

Leaf: Quercetin, Nimbosterol, Nimbin; **Flower**: Nimbosterol, Kaempferol; **Bark**: Nimbin, Nimbidin, Nimbosterol; **Seeds**: Azadirachtin, Azadiradione, Nimbin, Vepinin.

Uses: It is used as anti-inflammatory, analgesic, and antipyreytic activities; immuno-stimulant activities; hypoglycaemic activity; anti-ulcer effect; anti-malarial activities; anti-fungal; anti-bacterial activities; antiviral activities.

Role of Margosa

It is known as a powerful immuno-stimulant and is what makes it so good to have a current time when the whole world is under the constant threat of infection with the novel coronavirus.

All we say is that Neem can help you fight against the coronavirus successfully. It can boost your immune system and help you recover faster if you get infected with COVID-19 at any time. Eating Neem leaves can prevent you from becoming a serious patient due to a coronavirus infection and experience the debilitating symptoms associated with it.

The bark of the neem plant [Azardirachata indica Linn (Meliaceae] research has shown that the bark of neem contains a substance that has a strong anti-inflammatory activity. Various neem preparations found in their various components have been found to use antibacterial, antiviral, ant malaria, antioxidant, antifungal, anti-mutagenic, anti-carcinogenic.

It is very effective to protect the body from harmful germs, due to its anti-bacterial, anti-bacterial and anti-fungal properties. It can also keep your blood clean. It cleanses the blood by removing toxins and this can strengthen the immune system. It contains more than 130 natural compounds that work wonders in sterilizing bacterial and bacterial infections.

***Zingiber officinale* Linn.**

Comman name : Ginger Root ,Black ginger ,Ginger.
Urdu name : Adrak
Part used : Rhizomes

Chemical constituent: Gingerol; Shagol; Zingiberol; Phellandrene; Bisabilone; Starch; Trace amount of (Ca, Mn, Fe, Cu, K).

Uses : It is used as anti- bacterial ; decrease cholesterol level ; decrease joint pain from arthritis ; anti- inflammatory; anti-emetic effect ; in cold ,cough and bronchitis.

Dosage : Most clinical research has used between 250mg and 1g of the powdered root in capsular form ,Taken 1 to 4 Times daily.

Role of Ginger

It contains many anti-inflammatory compounds, including various antioxidants, which protect your body from damage by unstable molecules.

Ginger (*Z. officinale*) has to protect the gastric mucosa from several ulcerogenic and is very useful in cases of ulcerogenesis due to its antioxidant anti-cholinergic properties and anti-histaminic receptors.

It also helps to restores the genetic pathway, and works on gene suppression, good anti-platelet and proper cyclooxygenas –I-inhibitory, anti-inflammatory action in syntaglandin synthesis and helps reduce menstrual cramps antimicrobial effect, cholesterol regulation, and hypotensive properties etc.

Syzygium aromaticum

Common name : Clove , Chingkeh , Long

Chemical constituent: Clove consists volatile oil (15 - 20%); Eugenol (70-90%); Acetyl Eugenol; Tannins; Other substance mainly methyl furfural and di- methyl furfural.

Uses: It is used as Antiseptic; Carminative; Flavouring agent; Local anesthetic; Dental preparations and mouthwashes.

Dosage: - There are the limited studies to support the therapeutics dosing for clove and clove oil.

Role of Clove

Daily eating of cloves increases your immune system, which is needed for an hour. Like it can help you get rid of coughs, colds, viruses, bronchitis, sinus and asthma.

It contains essential nutrients such as Vitamin E, Vitamin C, Folate, Riboflavin, Vitamin A, Thiamine, Vitamin D, Omega 3 fatty acids and other anti-inflammatory and anti-bacterial properties.

It is scientifically known as *Syzygium aomaticum*, cloves are used for many years in their Ayurvedic treatment. It can help give you relief from stomach ailments and tooth and throat pain.

Use of cloves at night can help reduce stomach problems such as constipation, diarrhea, acidity, and development.

It is rich in antioxidants and has anti-bacterial properties. It contains a type of salicylate that can help protect acne.

***Curcuma longa* Linn.**

Family : Zingiberaceae
Common name : Turmeric, Haldi
Parts used : Dried rhizomes.

Chemical constituent : Curcumin ; Curcuminiods ; Cymene ; Tumeron ; Isdemethoxycurcumin ; Diaryl heptanoids ; Demethoxycurcumin .

Uses : It is used as an antioxidant ; to treat arthritis ; for cancer treatment ; improve the liver function ; cardiovascular protection ; for headache ; lung infection ; menstrual problem ; other uses (Include Alzheimer's disease , depression , worms and kidney problems) .

Dosage : 1. Many people take 400mg of turmeric 3 times per day in capsules or tablets. 2. Turmeric as a spice can also be incorporated into the diet as a way to promote health .

Role of Turmeric

It has been described as anti-inflammatory, anticancer, and antioxidant, as well as antiviral. It has been proposed as a potent molecule that cures pulmonary edema and other damaging processes leading to lung fibrosis following COVID-19.

It is a polyphenolic compound separated from the rhizome of the turmeric plant, Curcuma longa. It forms the largest curcuminoid in this plant, at 77% total, while small curcumin II comprises 17%, and curcumin III comprises 3%. Its tolerance and safety are well documented, with a maximum dose of 12 g / day.

It regulates the viral transcription and regulation, binds strongly to the main viral enzyme (Mpro) which is the key to duplication and prevents viral attachment and entry into the host cell.

Its range of anti-viral targets includes hepatitis C virus, HIV virus, Epstein-Barr virus and influenza A virus. It can also affect the viruses. It has been reported to inhibit 3C-like protease (3CLpro) more effectively than other natural products, including quercetin, or drugs such as chloroquine and hydroxychloroquine.

***Cinchona officinalis* Linn.**

Common names: Kunain ka pair (Hindi); Peruvian bark (English); Quinquina (French); Chinarinde (German).
Family : Rubiaceae.
Part used : Bark

Chemical constituent : It consists Quinine ;Qunidine ;Cinchonine ;Cinchonidine ; Cupreine ; Hydroquinine ; Quinic acid.

Dosage: 1. Cinchona Powder - 0.3 to 1gm. Taken orally with water or milk. 2. Quinine Sulphate -1gm daily for 2 days than 600mg daily for 5 days. 3. Quinidine Sulphate - 0.2 to 0.4gm every 2 to 4 hrs to a total dose of 3gm daily in Atrial Fibrillation.

Role of Cinchona

It is inspired by the anti-bacterial activity of quinine, and its chemical composition (and medicinal properties) are very different from the natural compounds found in cinchona bark. It was thought to cure many things: typhoid fever, yellow fever, measles, gout, toothache.

The bark of the Andean cinchona tree and its chemical compounds, known as quinoline alkaloids (quinine, quinidine, cinchonine and cinchonidine), have only provided treatment for malaria for over 300 years. In 1934, scientists developed the first synthetic antimalarial, later known as chloroquine.

Some people are use cinchona to get smallpox, swine flu, common cold, malaria and flu. Cinchona bark contains quinine, a drug used to treat malaria. It also contains quinidine, a drug used to treat arrhythmias.

***Panax ginseng* Linn.**

Comman name : Chinese ginseng ;Panax Asiatic ginseng ; Ginseng roots , Pannag Ninjin.
Family : Araliaceae
Parts used : Roots , Rhizomes .

Chemical constituent : These include tri-terpene saponins ;essential oil containing polyacetylenes ; Sesquitepenes ; Polysaccharides ; Peptidoglycans ; Nitrogen containing compounds ; Compounds such as fatty acid ;carbohydrates and phenolic compounds .

Uses : It is used as anti-stress ; anticancer ; immune system ; modulation ; cardiovascular ; CNS and hormonal effects ; for improvement of athletic performance .

Dosage : 1.Crude preparation of dried root powder 1 to 2g can be taken daily for up to 3 months. 2. In numerous clinical trials, the dosage of crude root has ranged from 0.5 to 3g/day and the dose of extracts has generally ranged from 100 to 400 mg .

Role of Ginseng

The main chemical compounds of ginseng are triterpenoids, protopanaxadiols, protopanaxatriols and steroidal saponins also known as ginsenoid, polysaccharides and proteins that are responsible for their antibacterial or other functions, especially for bacteria that cause respiratory infections in the human body.

It has antimicrobial antioxidant, antidiabetic, anti-inflammatory, anticardiovascular disease and anticancer properties. It helps to boost the immune system, fight against various heart diseases, mood disorders and diabetes.

In addition, the antibacterial properties of ginseng and its biological properties have also been reported against various bacteria (*Helicobacter pylori*, *Escherichia coli*, *Propionibacterium acnes*, *Pseudomonas aeruginosa*, and *Staphylococcus aureus*), fungi (*Fusarium oxysporum*) and yeast (Candida).

As per the report, the use of 150-300 ml of milk-enhanced ginseng water can provide 11.5-23 mg of ginsenosides that help to boost the immune system.

***Piper nigrum* Linn**.

Common name : Pepper, Black pepper (English); Gulmirch (Hindi) ; Maricham (Sanskrit) .
Family : Piperaceae
Parts used : Fruit

Chemical constituent: It is composed of carbohydrate of 37.4%, proteins of 25.5%, fibres of 23.6%, moisture of 4.7% and fat of 5.3%, as well as minerals, including 0.66% potassium (K) 0.20% , calcium (Ca) 0.16% , phosphorus and 0.16% magnesium (Mg) .

Uses: It is used as an Anti-oxidant; Heps in treating Respiratory Disease; Detoxifies your body; Helps in producing RBC.(Red blood cells); Digestive aid ; Increase appetite ; Relieves congestion ; Aids weight loss ; Wound Healer ; Rich in Vitamins B and produces calcium ; Prevents cancer ; Cleanses your intestines and stomach ; It consists potassium that helps in regulating heart rate and High blood pressure.

Role of Black Pepper

It is very effective in improving the immune system. Our body protects our bodies from external invaders, such as germs, viruses, and toxins. So, It can help to improve the immune system we need to include energy-boosting spices such as turmeric and black pepper in our diet. According to the Ministry of AYUSH, black pepper is a powerful combination. Black pepper can also provide relief from the cold.

Numerous scientific studies provide evidence that piperine improves digestive function, has antibiotic properties and anti-inflammatory effects, anti-oxidant properties, anti-cancer effects.

So, It also has antibacterial properties and it is widely used in coughs and cold remedies. However, eating too much can indicate that it is harmful to the body instead of benefits. Therefore, use it in moderation or consult a health professional first.

Many studies show that piperine stimulates pancreatic enzymes, and it improves the digestive capacity. It has also been found to be helpful in nausea. A powerful anti-oxidant activity has been found in dark circles.

CONCLUSION

After going through all the pharmacognosy profiles of the botanical herbs, it is concluded that above botanical herbs should be converted into appropriate dosage forms and the forms of the botanical herb can be used in the treatment of early symptoms of Covid-19 positive patients. Peoples were using more herbal herbs during COVID-19 claiming that they can prevent to cure COVID-19. Natural products and herbal medicine have a long track record in treating respiratory infections. Thought preclinical and clinal trails have not yet been conducted on these drugs but their usefulness has been proved.

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