

TRADITIONAL IMMUNITY BOOSTERS IN THE MANAGEMENT OF COVID-19

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According to World Health Organization (WHO), the current COVID-19 pandemic caused by a novel coronavirus (2019-nCoV) recently reclassified and named Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) which causes Coronavirus Disease 2019 (COVID-19). COVID-19 is characterized by the symptoms of viral pneumonia such as fever, fatigue, dry cough, and lymphopenia. COVID19 is usually caused by a virus to which most probably the people with low immunity response are being affected. The only option to be healthy is by adding immunity-boosting foods which are not only cheap and best but readily available in our daily diet.

In the current scenario boosting immunity is one of the best choices to get away from COVID-19 infection. Keeping ourselves healthy is one of the major goals of any individual in this pandemic. People eat different nutritive food, herbs depending upon the place, climate, and region where they live. Some people do yoga and other sports activities to keep themselves fit and healthy. Our immune system plays a vital role in defending covid-19. There are so many ways to boost our immune systems such as physical exercise, a healthy diet including immunity-booster, and good sleep. The inclusion of immunity-boosting herbs like cinnamon, black pepper, turmeric, tulsi, ginger, amla, and neem in the diet plays a vital role against SARS-CoV-2 (COVID-19) as well as other viral infections. These spices and herbs are using from ancient times due to their taste & they have antiviral, antimicrobial,

antioxidant, and immunity-boosting properties. In this article, we will discuss the Traditional Immunity Boosters (spices & herbs) along with the nutrient composition of some of the immunity boosters per 100g.

TRADITIONAL IMMUNITY BOOSTERS

Zingiber officinale (Ginger): Ginger is one of the important medicinal plants which naturally occurs in various countries. Ginger belongs to the family of Zingiberaceae and the other famous members of this plant family are turmeric, cardamom, and galangal. Ginger is a rich source of bioactive compounds such as phenolic groups, alkaloids, and steroids, which have medicinal effects. It aids in improving the defensive responses in the upper respiratory tract and digestive mucosa. It also fights against infections like bacterial and viral such as cold, flu, sore throats, and chest infection. It has anti-microbial potential which can treat infectious diseases.

Curcuma longa L. (Turmeric): Turmeric belongs to the family of ginger (Zingiberaceae) and it is natively growing in India and Southeast Asia. The compound found in turmeric is curcumin which shows antimicrobial and antiviral properties. Turmeric is known for its abundance of anti-inflammatory effects. Curcumin is a potent immunomodulatory agent and it has been known to be highly effective as a treatment. Curcumin has antiviral properties because it inhibits the replication of some types of viruses including hepatitis B, dengue virus, and zika virus and this compound (curcumin) has also been found to have several significant biological effects including anti-inflammatory, antitumor, and antibacterial activities. It can be used as a prophylactic and therapeutic agent for coronavirus.

Garlic (Allium sativum): Garlic is from the onion family- Allium. It is an essential element of most cuisines around the world. It is loaded with so many health benefits if it's consumed in the right way. Allium sativum is a functional food well-known for its immunomodulatory, antimicrobial, anti-inflammatory, antimutagenic, antitumor properties. Its antiviral efficiency was also demonstrated. It is a rich source of vitamins and minerals such as Vitamin B1, B2, B3, B6, folate, magnesium, phosphorus, sodium, zinc, iron,

manganese, and calcium among others. A magical immunity booster in garlic is the presence of Allicin, which helps in fighting several ailments. Garlic is an excellent natural source of bioactive sulfur-containing compounds and has promising applications in the development of functional foods or nutraceuticals for the prevention and management of certain diseases.

Tulsi (Ocimum sanctum):In the traditional system of medicine, different parts of Tulsi have been recommended for the treatment of different types of diseases. Tulsi is an herb that is loaded with plenty of vitamin C, antioxidants, antiseptic and antiviral properties. Due to its anti-microbial activities, it has been used as a natural hand sanitizer. Tulsi tea is one of the most common home remedies for the common cold or sore throat. It has been found to address physical, chemical, metabolic, and psychological stress through a unique combination of pharmacological actions. Tulsi can help to strengthen the respiratory system due to the effects it has on the chemical changes in the body. The crude extract and terpenoid isolated from the leaves of tulsi have shown promising antiviral properties against the H9N2 virus.

Amla (Phyllanthus Emblica):Alma tree is a medium-sized deciduous tree belonging to the family Euphorbiaceae, commonly known as Indian gooseberry, medicinal plants, having great elementary and therapeutic importance. It helps detoxify the entire organ system for better health and immunity. Amla fruits are rich in high amounts of vitamin C (Ascorbic acid). It is also loaded with polyphenols that are known to fight against the development of cancer cells. It is also helpful in managing diabetes and reducing cholesterol levels. Amla contains numerous phytoconstituents viz. a higher number of polyphenols like gallic acid, ellagic acid, different tannins, minerals, vitamins, amino acids, fixed oils, and flavonoids like rutin and quercetin.

Neem (Azadirachta indica):Neem helps in boosting the immune system while cooling down the body internally. It constitutes both anti-bacterial and anti-fungal properties which help in keeping skin clean, radiant, and healthy. It has blood-purifying properties; boosting both the lymphocytic and cell-mediated immune systems. Regular consumption of Neem capsules can also avert high fever, malaria, viral flu, dengue, and other infectious diseases. More than 70 different terpenoids, or terpenes, have been identified in different parts of the

Neem tree. One single Neem terpenoid, beta-caryophyllene, has been shown to have anti-inflammatory, antioxidant, and pain-reducing benefits.

Herbs	Protein(g)	Zinc(mg))	Vit.A(mcg)	Vit.C(mg)	Vit.E(mg)	Phosphorus(mg)
Amla	1.05	0.12	87.00	478	0.16	21
Basil	20	0.81	79.2	18.00	0.80	56.00
Ginger	6.08	0.34	-	9.20	0.26	34.00
Garlic	6.75	0.81	6.03	13.57	0.06	153.00
Turmeric	7.66	2.64	9.2	0.7	2.92	276

CONCLUSION: There are so many ways to boost our immune systems such as a balanced diet, physical exercise, and quality sleep. Practically, medicinal plants work as a supplement in boosting immunity. By doing some of the modifications in our dietary pattern like the inclusion of immunity boosters in the diet can have a great impact on our health.