



# INDIAN HERBAL DIETARY SUPPLEMENTS USED TO BOOSTS IMMUNITY-A REVIEW

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## ABSTRACT:

The study aimed to investigate Indian herbal food plants' usefulness in boosting immunity. Herbal medicinal material and product needs are increasing, and with this increase in need, it is very much an essential requirement to maintain the quality of them. An herb is a plant or plant component that is used for its flavour, aroma, or medicinal qualities. A particular kind of food supplement is an herbal medicine. Vitamins, minerals, plants, and many more goods are examples of dietary supplements. Herbal remedies are used by people to try to preserve or enhance their health. Many individuals think that "natural" products are always secure and healthy for them. As a result, we looked at certain Indian herbal plants that increase immunity and guard against infectious diseases. Here are these plants: *Ananascomosus*, *Glycyrrhizaglabra*, *Cinnamomum cassia*, *Momordicacharantia*, *Moringaoleifera Lam.*, *Brassica oleraceavar.italica*, *Morchellaesculenta*, *Foeniculumvulgare*, *Momordicacharantia*, *Syzygium cumin*, *CyclospERMUMleptophyllum*, *Eugenia caryophyllus*, *Prunusdulcis*, *Citrus aurantifolia*, *Allium cepa L.*, *Allium sativum*, *Emblica officinalis*, *Piper nigrum*, *Zingiber officinale*, *Carica papaya L.* Due to the presence of potent medicinal components, herbs have a significant impact on the immune system. They can also help in the battle against other lifestyle-related disorders.

**KEY WORDS:** Immunity, dietary supplements, Indian herbal plants, prevention of infection.

## INTRODUCTION:

The WHO estimates that around three-quarters of the world's population relies on traditional remedies to care for its citizens' health. In actuality, plants are mankind's wise companions. They not only gave people food and a place to live, but they also helped to heal various diseases. Numerous studies on diverse plant species and their therapeutic capabilities are now being conducted, and the results are being used to re-evaluate traditional medicine throughout the world. The immune system's capacity to recognise and fight off a vast range of infectious and harmful bacteria gives the body the ability to avoid or fight off infections and reduce the risk of organ and tissue damage. Immunomodulators are biological or synthetic compounds that have the ability to activate, inhibit, or modify any immune system function, including the adaptive and innate immune systems. <sup>[1]</sup> One of the most prevalent disorders is infection, and elderly people have a 2-10 fold higher mortality rate from a variety of infections than young adults. People with weakened immune systems are typically affected by infections. Many herbal plants have been used for strengthening immunity for a long time, including in traditional Ayurvedic, Unani, and Chinese medicine. Therefore, in this section, we will explore various Indian herbal plants that boost immunity. We can boost our immunity and prevent illnesses if we combine these herbal supplements with a regular diet.

**IMMUNITY BOOSTER:**

The immune system eliminates harmful cells that form inside the body as well as protects it from external pathogens like viruses and bacteria. Low nutrition causes greater infections, poor wound and infection healing, and increased susceptibility to the signs and effects of immune system dysfunction. According to research, immune function decreases with age, but proper eating may be able to prevent or even reverse this reduction. Additionally, studies have shown that immunological function usually diminishes with age. With the use of some herbs, the immune system can be boosted and colds and flu can be prevented.

Here is a list of the nutrients your immune system needs, along with foods that provide them. Your immune system keeps everything in check by protecting you against viruses and bacteria that might harm you and cause illness and disease. [2]

Several herbal plants are employed as potential medicinal agents against infections. Ayurvedic doctors from India recommend a few key plants for boosting immunity in people. [3]

**PLANTS USED FOR BOOSTING IMMUNITY:**

Sr No	Botanical (Family)	Common name	Part used	Chemical constituents	Other biological activities
1.	<i>Ananas comosus</i> (Bromeliads)	Pineapple	Fruit	Gallic acid, syringic acid, vanillin, ferulic acid, sinapic acid	Its proteolytic activity is rapidly inactivated as part of homeostasis in plasma. [4]
2.	<i>Glycyrrhiza glabra</i> (Fabaceae)	Licorice	Roots	Glycyrrhizin and glycyrrhetic acid.	Antiviral activity against SARS related coronavirus, HIV-1, respiratory syncytial virus, vaccinia virus, arboviruses and vesicular stomatitis virus. [5][12]
3.	<i>Cinnamomum cassia</i> (Lauraceae)	Cinnamon	Bark	Eugenol, cinnamaldehyde	Antiviral, antifungal, antioxidant, antihypertensive, antidiabetic, antitumor, gastroprotective, and immunomodulatory. [6]
4.	<i>Momordica charantia</i> (Cucurbits)	Karela	Fruits	Anethole, $\beta$ -bisabolol, germacrene D, dihydrocarveol,	Dengue virus, Herpes virus, hepatitis B virus and Human Immunodeficiency Virus. [4]
5.	<i>Moringa oleifera</i> Lam. (Moringaceae)	Drumstick tree	Flowers, Fruits	Niaziminin A, and niaziminin B, Quercetin, Linolenic acid	Human immunodeficiency virus type-1. [3][11]
6.	<i>Brassica oleraceavar. italica</i> (Brassicaceae)	Broccoli	Flower	Flavonoids, glucosinolates, indole-3-carbinol, isothiocyanates, vitamins	Immune booster through the enhancement of phagocytic activity. [3]
7.	<i>Morchella esculenta</i> (Agaricaceae)	Honey combed mushroom	Fruit	Chitin, glycogen, trehalose, mannitol	Antitumor, Antioxidant, Anti-inflammatory, Immune enhancement. [7]
8.	<i>Foeniculum vulgare</i> (Apiaceae)	Fennel	Fruit, Seed	Anethole, 2-pentanone, fenchone.	Aromatic, stimulant and carminative, and for burning sensation in body, chest diseases, colic, cough, dysentery, fever, flatulence, headache, kidney problems, menstruation and spleen complaint, thirst, toothache. [7]

9.	<i>Momordica charantia</i> (Cucumissativus)	Bitter cucumber	Seeds	Protein, lipids and carbohydrates	Decreased viral titer. [8] Astringents, hepatitis, bronchitis, asthma, dyspepsia, piles, diarrhea, cough hoarseness of voice, eye diseases. [15]
10.	<i>Syzygium cumin</i> (Myrtaceae)	Blackberry	Leaves and bark	Quercetin	Antiviral, astringent, sweet, sour, acrid, refrigerant, carminative, diuretic, digestive, anthelmintic, febrifuge, constipating, curing fever and dermatopathy. [8]
11.	<i>Cyclosporum leptophyllum</i> (Apiaceae)	Celery/ajwain	Seeds	Fatty oil with the fatty acids: petroselinic, oleic, linoleic, linolenic, and palmitic acids	Useful in bronchitis, cough, and asthma by various traditional practitioners of India. [7]
12.	<i>Eugenia caryophyllus</i> Myrtaceae	Clove	Flower bud	Eugenin, Eugenol	Inhibit viral replication and Reducing infection. [6] [12]
13.	<i>Prunus dulcis</i> (Rosaceae)	Almond, Badam	Seed	Diolen and triolen amino acids, vitamin E,	Improved the immune surveillance of the peripheral blood mononuclear cells towards viral infections and also significantly decreases in the Herpes simplex virus (HSV-2) replication. [3]
14.	<i>Citrus aurantifolia</i> (Rutaceae)	Lime/lemon	Seed	Eriodictyol, hesperidin, hesperetin, apigenin, quercetin	Anticancer, Anti-inflammatory, Antiviral, Antifungal, Antiparasitic, Anti-obesity. [9] [13]
15.	<i>Allium cepa</i> L. (Amaryllidaceae)	Onion	Bulb	Quercetin, thiosulfates, and anthocyanins	Hypocholesterolemic, hypolipidemic, anti-hypertensive, anti-diabetic, antithrombotic and anti-hyperhomocysteinemia effects. [10]
16.	<i>Allium sativum</i> (Alliaceae)	Garlic	Ripe bulb	Carbohydrates, protein, mucilage.	Antioxidant, anti-inflammatory, Immunomodulator, Antifungal, antibacterial. [10]
17.	<i>Emblic officinalis</i> (Phyllanthaceae)	Amla	Fruit	Emblicanin A emblicanin B punigluconin and pedunculagin	Boosts the production of white blood cells (WBC) in the body that help in fighting several infections and diseases. [5] [11]
18.	<i>Piper nigrum</i> (Piperaceae)	Black pepper	Fruit	Piperic acid, piperlonguminine, piperlonguminine, piperolein B, piperamide, piperettine	Antiviral. [3]
19.	<i>Zingiber officinale</i> (Zingiberaceae)	Ginger	Rhizome	Zingiberene, $\beta$ -bisabolene, $\alpha$ -farnesene, the terpene compounds $\beta$ -sesquiphellandrene, and,	Antiviral immune boosters which have been shown to improve humoral and cell-mediated immune response, immunomodulator, used in bronchial infections. [8] [14]

				$\alpha$ -curcumene,	
20.	<i>Carica papaya</i> L. (Caricaceae)	Papaya	Fruits and Leaves	Caricaxanthin, violaxanthin, zeaxanthin, carpaine, dehydrocarpaine I and II and cardenolide	Antioxidant, anti-hypertensive, woundhealing, hepatoprotective, anti-inflammatory, antimicrobial, antifungal, anti-fertility, histaminergic, diuretic, anti-amoebic, anti-tumor, anthelmintic, effect on smoothmuscles, antimalarial, hypoglycemic activity, immuno-modulatory activity, anti-ulcer activity, anti-sickling activity. <sup>[10]</sup>

Table No. 1 – Showing plants used for boosting immunity

## RESULT AND DISSCUTION:

As a result, there is a need to include the medicinal plants described in this study—which are abundant in vitamins A, C, Zn, and Mg as well as other antioxidants—into our daily lives with a modern twist in order to promote immunity. Other lifestyle conditions like depression, thyroid, obesity, diabetes, blood pressure, etc. may also benefit from their use. As a result, it's crucial to add all the essential herbs sparingly as a food supplement to recipes with a contemporary twist, such as Maggi, poha, chilli, sandwiches, momoes, etc., which are quite popular among the younger population. Because they are widely accessible, affordable, and have few adverse effects, traditional herbal remedies are used by many people all over the world to treat chronic illnesses. Herbal remedies can help the body build immunity during the early stages of an infection, and medicinal plants provide an option for immune support. Due to the presence of potent medicinal components, herbs have a significant impact on the immune system. This leads us to the conclusion that the Indian plants mentioned above have immunomodulatory properties. As a result, by including these plants in our daily diet, we can also fend off infectious diseases.

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