

Ayurveda - Solution of All Diseases

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ABSTRACT

Herbal plants are valued in Ayurvedic Rasayana for their medicinal potential. The concept of ayurveda is revived here. Ayurveda focuses on the use of plant-based medicines and treatments. We can induce the concept of ayurveda into it and strengthen our immune system. There are two folds of ayurvedic objectives- to cure the disease of a person and to maintain the health of a healthy person. Goals of the ayurvedic treatment includes elimination of impurities, reduction of symptoms, increased resistance to diseases and reduced worry in patient's life. Patients may combine several herbs to increase the resistance against diseases and increases the immune power. The aim of this review is to highlight the results of the plant based immunomodulators having potential immunomodulatory activity¹. Ayurveda is devoted to 'Rasayana' drugs to enhance body resistance²⁻⁵. Plant resources are the integral part of human society. After fulfilling the basic needs like food and shelter, humans search for a suitable remedy among plants for curing various diseases³.

Keywords- Immunomodulators, Ayurveda, Therapeutic gardens, Immunity boosters, Antimicrobial mask.

AYURVEDA - SOLUTION OF ALL DISEASES

INTRODUCTION

Ayurveda is the science which treats of what is advantageous and what is harmful for the body and also the happy and unhappy states of life. The basic principle of Ayurvedic medicine is to prevent and treat illness—rather than respond to indicators of disease—by maintaining balance in and harmony between our body, mind and environment. Our research paper focuses on three stages for overall well being of an individual. The first protective phase includes adaptive immune response in the host to eliminate the virus in a large proportion. We must remember the basic principle in medicine that “prevention is better than cure.” Immunity boosters, which include oral immunity boosters, immunity inhalers and immunity rollers, help boost the overall potential of the body to fight disease causing microorganisms. The potent plant extracts when consumed daily for a while in form of decoctions or supplements or applied on body parts will help the body to eventually gear up its immunity balance. Second stage protection involves Ayurvedic masks which would help prevent pathogens reach our body. It is natural and healthy. It is made by adding neem, tulsi and other ayurvedic herbs which refine one’s breathing. Like cloth masks, herbal masks are eco-friendly, washable and reusable and have no side effects like allergies. Third stage protection focuses on the use of Fitness Center and Therapeutic gardens for long time well-being of recovering patients. A Fitness centre includes guided series of Yoga practices, meditation sessions and counselling programmes for patients undergoing recovery at the comfort of their convenience. Therapeutic gardens involve use of various plants that are planted to enhance the environment and hasten the recovery phase and lifting the mood to positive levels.

METHODS

A. PRE-TREATMENT

1. IMMUNITY BOOSTERS

A healthy immune system protects us from various microorganisms that our body comes in contact throughout the day. Hence, it becomes crucial to maintain a good immune system for living a healthy life.^[6] The most common ways to have a robust immune system is to have proper diet that contains all significant vitamins and minerals, regular exercise, yoga, adequate sleep, appropriate hygiene etc.⁷. But due to hectic lifestyle, the balance between the above mentioned activities is disturbed and as a consequence our immune system goes haywire. So, maintaining one’s immunity throughout the changing seasons and environments year-round becomes even more difficult.⁸ But nature has solutions to our worries. Plant extracts of various traditional and modern medicinal plants have powerful impact on one’s health if taken dedicatedly with least amounts of side effects.⁶⁻¹⁰

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2. IMMUNITY INHALER

Immunity nasal inhaler contains a safe & effective natural blend of essential oils that strengthen your immunity⁷⁻¹⁰ Insert the inhaler stick into one nostril, closing the other nostril with finger and inhale.

Therapeutic Benefits-This blend contains oils that boost, strengthen your immunity to fight viruses, bacterias and pathogens in the environment you live in without any harmful side effects.⁸⁻¹⁰

Ingredients

Eucalyptus (*Eucalyptus globus*), Frankincense (*Boswellia sacra*), Lemon (*Citrus limon*), Tea Tree (*Melaleuca alternifolia*), Clove (*Syzygium aromaticum*)⁸

3. IMMUNITY ROLLERS

ROLL ON BLEND has Therapeutic Essential Oils. Synergistically, these particular essential oils partner with your system's own ability to help protect you from infections that may weaken your immune system.²⁻⁵ If having a weakened immune system (due to a cold, flu, or respiratory infection), this blend will help you feel better while you're recuperating.⁸⁻¹⁰

Therapeutic Benefits-This blend contains oils that boost, strengthen your immunity to fight viruses, bacterias and pathogens in the environment you live in without any harmful side effects. Used to protect from infections but can also be used when sick.⁸⁻¹⁰

How to Use Our Immunity Roller-Apply to bottoms of feet, wrists and back of neck or down on spine as needed.

Ingredients

Essential oils of Clove (*Syzygium aromaticum*), Lemon (*Citrus limon*), Cinnamon (*Cinnamomum verum*), Eucalyptus (*Eucalyptus globus*), Rosemary (*Rosmarinus officinalis*), Oregano(*Origanum vulgare*)⁸

IMMUNITY BOOSTERS

ORAL
IMMUNITY
BOOSTERS

Eucalyptus(*Eucalyptus globus*)
Frankincense(*Boswellia sacra*)
Lemon(*Citrus limon*)
Tea Tree(*Melaleuca alternifolia*)
Clove(*Syzygium aromaticum*)

IMMUNITY
ROLLERS

Clove (*Syzygium aromaticum*)
Lemon (*Citrus limon*)
Cinnamon (*Cinnamomum verum*)
Eucalyptus(*Eucalyptus globus*)
Rosemary(*Rosmarinus officinalis*)
Oregano(*Origanum vulgare*)

IMMUNITY INHALED

DRY

Hibiscus rosasinensis(**China rose**)
Withania somnifera(**Ashwagandha**)

DECOCTIONS

Hibiscus sabdriffa

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BENEFITS OF DIFFERENT ESSENTIAL OILS- LEMON ESSENTIAL OIL

Lemon essential oil has powerful antibacterial properties. It's also a powerful antioxidant that can be beneficial to the immune system. Additionally, it's an energizing oil, helping to boost the mood and make you feel refreshed and energized as well. Interestingly, two separate scientific studies conducted using lemon essential oil found evidence that it may be beneficial in protecting the health of the liver. This is significant considering the fact that the liver plays such a large role in the immune system.^{[8][9][10]}

EUCALYPTUS ESSENTIAL OIL

With its powerful antiviral and medicinal drug properties, eucalyptus is another volatile oil that's superior for immunity. Though usually used for the treatment of metabolism diseases, it's really helpful for rather more than that. It facilitates in fighting back a variety of diseases like respiratory disease, chickenpox, measles, and more. In addition, it's stimulating to the system and on the mind.^{[8][9][10]}

CLOVE ESSENTIAL OIL

Clove is a common ingredient in several oil immunity blends, and the reason being its medication, antiviral, and anti-fungal properties, and is additionally thought of to be a robust antiseptic. Not solely is it useful for biological process problems, however, it's oftentimes used for mouth health and general infections, moreover as for combating colds and therefore, the respiratory illness. Attributable to its sturdy antimicrobial properties, clove bud may be a nice choice to take into account for immunity enhancement.^{[8][9][10]}

FRANKINCENSE ESSENTIAL OIL

Also known as gum olibanum, Frankincense has a component known as boswellic acid which has been studied for its anti-inflammatory drug and anti-tumor properties. Gum olibanum oil works by serving to multiply white blood cells, thus clearly that's an enormous facilitate to our system. Additionally, can be put to use for alleviating stress and relieve pain.^{[8][9][10]}

OREGANO ESSENTIAL OIL

Oregano is another oil that's improbably helpful for reinforcing immunity. It's a medicinal drug with antiviral, and anti-fungal properties, creating it fantastic for killing germs and preventing unwellness. It's thought of particularly helpful in fighting infection and inflammation. In fact, it's normally noted as "hot" oil, which means, it will induce a warming sensation and may simply be irritating. For this reason, it ought to be used with extreme caution.^{[8][9][10]}

ROSEMARY ESSENTIAL OIL

AYURVEDA - SOLUTION OF ALL DISEASES

As another versatile oil, rosemary essential oil is useful for immunity. Having powerful antimicrobial properties, it's typically used as fighting off unhealthiness, particularly of the respiratory type. As a result of its high proportion of 1, 8-cineole, rosemary is taken into account as a stimulant for the glands within the respiratory system. To add to it, it's also an immunostimulant, thus it can defend the body by fighting off germs, and help boost the system for immunity.^{[8][9][10]}

TEA TREE ESSENTIAL OIL

Tea tree should be a must-have essential oil for any home. It contains powerful therapeutic properties including, antibacterial, antiviral, and anti-fungal. This makes it implausibly helpful in fighting germs, and a lot of other illnesses. And, to prime it off, it's one amongst the gentler essential oils, creating it useful for almost any home. Tea tree is additionally associated as an immunostimulant and has long been valued for its superior antimicrobial properties.^{[8][9][10]}

CINNAMON ESSENTIAL OIL

Cinnamon volatile oil has therapeutic properties thus it is employed in aromatherapy to stop the infections of airways and airborne bacteria. The study has shown that cinnamon essential oil boosts and improves the immune system of our body, thereby creating our body additional robust and capable of fighting infections and diseases.^{[8][9][10]}

B. ANTIMICROBIAL MASK

Antiviral green nanocoating's of Tinospora, tulsi and lemon to be upscaled for making masks to prevent odour and increases the antimicrobial efficiency. Antimicrobial fluid resistant fabric mask with nano silver

- copper filter proved to be effective against viruses in laboratory studies. The copper facemask infused with metal oxide nanoparticles can destroy the bacteria and was launched by Sonovia Ltd. at the march beginning. Mask is made up of four layers. First layer is of fabric which is antimicrobial (AATCC100), Fluid resistant and UV protected. Second layer is needle punch (OEKO-TEX100) and having antimicrobial coatings of Tinospora, Tulsi and Lemon which is breathable comfortable and have 3d- formation. Third layer is Nano Silver-copper filter. It is antimicrobial (AATCC100), dust prevention and fluid resistant properties. Forth layer is a fabric which is also anti-microbial (AATCC100), Fluid resistant and UV protected. These masks are effective against up to hundred washings. The ultrasound-based technology uses a process called cavitation to court the individual textile fibers with the engineered solution. These masks are reusable and washable.

AYURVEDA - SOLUTION OF ALL DISEASES

C. POST TREATMENT 1.ONLINE FITNESS CENTRE

Formation of a platform for online fitness centre as Talking to coronavirus patients in isolation is a huge help. In fact, it will help them recover faster. There is a need to talk to the patients and interact with them to remove their fear. Many research reports had proved that it helps the patients in their recovery, boosting the morale. It increases the capacity of body to fight with the

virus. Long term lung damage even after recovery needs the major breathing exercise – SUDARSHANKRIYA which is all based on the concept of ayurveda.It heals the body, brain and the soul. Yoga includes sudarshankriya - Yoga works on the principle of maintaining a healthy balance between the mind and the body. It is a holistic approach to health with an emphasis on maximizing his or her efficiency. For patients living with chronic diseases such as heart disease, diabetes, chronic obstructive pulmonary disorder (COPD), cancer, arthritis, and autoimmune diseases, adjuvant use of yoga serves to reduce the severity of symptoms while allowing patients to reduce the dosage of drugs. A study published in the American Med Care Journal found that yoga training resulted in improvement of the quality of life of patients with heart disease, stroke, and COPD. Practices such as SudarshanKriya, and diaphragmatic breathing helps reduce oxidative stress on the body and mind, thereby improving a series of health parameters. Similarly, yoga tends to have a positive impact on people with depression, anxiety. It also includes some meditation techniques, decoctions, a complete balanced diet and consultant doctors also.

2.HERBAL GARDEN INDOOR AIR PURIFIERS

1.ALOE VERA–Aloe vera is popular for its gel healing properties to cure many infections¹³. Can be easily grown indoor and outdoor only we need to be precautious for conventional watering and light facilities. have prominent role in Ayurveda for its health,beauty, medicine and skin care properties.

HOW TO GROW–Aloe vera is a succulent plant with thick waxy coating on leaf, so need less water for growth and development so best grown in dry and poor soils (in nutrition quality). Can be easily grown in different types of soil ranging from sandy to moderate fertile loamy.An average minimum temperature above 30 to 35Fis required for best growth of aloe vera, but it can tolerate a wide range of temperature from 50 to 60 F. During summer season.Can be easily grown by seeds in spring season.

CONSTITUENTS–Aloe vera is one of the rich sources of vitamins, contains vitamin-A, B, E along with vitamin B12. also contains main other compound like minerals, enzymes, sugars, lignin, saponins, salicylic acid and amino acids.

BENEFITS -it has many benefits like, it has air purifying¹⁷, anti-inflammatory¹⁵, antibacterial¹⁵, antioxidant¹⁵, skin healing, antiseptic¹⁴,anti-aging, antitumor¹³, antiviral¹⁵, constipation reducing, decreasing sugar level¹⁶, teeth and gums cavity healing¹³ properties.

AYURVEDA - SOLUTION OF ALL DISEASES

2. Peace lily-

Peach lily belongs to family Liliaceae is one of the best indoor home air purifiers. They are evergreen plants with underground rhizome, perennial with green leaves and sheathed leaf stalk. Flower heads arises from the center of the leaf clusters.

HOW TO GROW- For the growth of peach lily there are some conditions like, Temperature Required for the growth is about 18-26 C⁰. Also, they mostly found in rainy climate with maximum Rainfall of about 10000mm. They need almost fertile acidic to loamy soil so that they acquire good moisture in it.

GROWTH- Peace lily can be grown by the division of clusters of its leaves.

BENEFITS-it does have many benefits like it purify air¹⁷ (absorb organic toxic), it does have low maintenance¹⁹, promote peaceful sleep, absorb spores¹⁹ form air and provide clean and peaceful environment¹⁹.

CONSTITUENTS-Peach lily consists of sterols, saponins, terpenoids, glycosides, alkaloids, flavonoids as its constituents. Some amount of chloroform and ethanol are also reported in its photochemical studies.

3. Snake plant

Snake plant is also known as mother's in law tongue because of long tongue. It is herbaceous, evergreen, slight toxic in nature. It grows well in pots. It mostly propagates with help of underground rhizomes. Snake plant is an ideal plant as air purifier and can be easily grown indoors. Toxins like formaldehyde, xylene and toluene can be easily removed through this plant. It releases oxygen and lessens air borne allergens²⁰. 6-10 snake plants can be necessary for each person if there is no air flow.

ENVIRONMENTAL CONDITIONS : It can easily grow in bright light conditions with some sunlight and shade Water it every 2-6 weeks for optimum conditions.²²Snake plants require sufficient sunlight, with some light shade. These plants are needed to be protected from the hottest, southern sun in summer. They can survive poor light conditions; they will not grow without moderate sunlight and will not flower without sun exposure. Ideal temperature for their growth is 65-80 F. A liquid fertilizer during growing period is recommended. ²³These plants do not tolerate soggy soil. It required loamy and sandy soil for proper growth.

BENEFITS- remove toxic pollutants from air (including cancer -causing pollutant at small level), remove organic toxic like benzene, formaldehyde, xylene, toluene, etc. Even Effective against many airs borne allergies.

OUTDOOR PLANTS

Chemical degraders:

1. Alfa-Alfa –Alfa-Alfa has been considered “queen of the forages” due to its beneficial role. It has great importance in Ayurveda. It has many benefits which make it suitable for use as soil degradation processes:²³It has very high nutritional value, can easily adapt to all soil types and conditions for its growth, can also grow well with grasses, Strong vigor, High yields.

How to prepare the seed beds: The land which is degraded can be rehabilitated using Alfa-Alfa seeds. It can be prepared by levelling of the soil and softening of the topsoil. Seeds used for cultivation of Alfa-Alfa requires 0.2 hectares of land. High availability of the water and irrigation of plots during rainy season is considered important. It must remain untouched for 3 years and animals are also not used to enter the area. Environmental conditions needed to grow Alfa-Alfa: Annual precipitation with 580 mm. Best grown in semi-arid areas. Topography (rolling-11% and hilling 16-30%), soil texture (loamy), groundwater 5-50 mm²⁴

Extraordinary benefits of Alfa-Alfa: It prevents soil erosion; root system is well developed and has ability to fix nitrogen in the fields with help of chemical constituents. These chemicals create optimism conditions for growth of micro-organisms in the rhizosphere area.²⁵It also helps in vigorous canopy, reduce run off, weed suspension, improve soil tilth.

2-Sunflower

The scientific name of sunflower is *Helianthus annuus*. It belongs to family Asteraceae. It is mostly cultivated in Punjab and Haryana. Seed variety present now is PAC 360 and Syngenta. It helps in removal of harmful chemicals. Acts as anti-inflammatory, antipyretic, stimulant, excellent source of vitamin E.

Environmental conditions: Require hot and humid weather with relative humidity 50-85%. It can also be grown in dry conditions also. Sunflower can be grown in loamy soil, black soil. ploughing up for 12-18 which is, followed by 2-3 harrowing and planking, collecting the stalks of former crop and get the seedbed ready.

Method: 2 or 3 season per crop rotation with traditional crops is beneficial for improving soil fertility. Legume and groundnut are best for crop rotation. Dibbing Method with furrow sowing. Seeds should be treated with captan @3g/kg seed under dry land conditions. Higher concentration of aluminum is toxic for sunflower. Plant should be planted in soil with ph. less than 4-6. The sunflower plant has a deep tap root system which has high water holding capacity. It performs best in deep soils with high water profile

TO CHECK THE PLANT EFFICACY OF PLANTS TO KNOW POTENTIAL OF EACH PLANT AND COCKTAIL OF PLANTS

1.Eucalyptus

Eucalyptus is commonly known as a gum tree, Nilgiri tree, or Safeda. It belongs to the family of Myrtaceae and is one of the fastest-growing trees in the world, attaining a height of 480 feet. It not only gives us the fuel, wool, timber, biomass, and essential oil but also have a significant medicinal value. Eucalyptus is a native of Australia and Tasmania, they are also found in the states of India like Andra Pradesh, Goa, Bihar, Gujarat, Punjab, Haryana, and many more. The eucalyptus tree is one of the best herbs for lung health. 1,8-cineole is an important compound that is found in the leaves of this tree and majorly contribute to recovering the diseases like asthma, coughs, bronchitis, breaking up congestion, helps with inflammation, stimulating the immune system. Eucalyptus essential oil can be diffused and inhaled or even used in homemade preparations such as balms, and personalized aroma blends. The flavonoids like spiraeoside, hyperoside, isoquercitrin, quercetin, kaempferol, etc. have antioxidants activity thereby reducing the cell damage caused by ROS and RNS and on the other side tannins like 1,2,6-tri-O-galloyl- β -D-glucose, tellimagrandin 1, etc. helps in reducing inflammation.

Growing conditions:- Eucalyptus grows in a wide variety of climatic conditions ranging from drought to rainfall, warm to hot, sub-humid to humid, and from food to degraded soil. However, a soil with good drainage capacity, rich organic content loamy soil and low alkaline conditions are preferred. The growth will stagnate on poor heavy, sandy soils, high alkaline and saline soils. But eucalyptus hybrid species are successfully grown in alkaline and saline soils. This tree comes up very well in the soil with a pH range of 6.0 to 7.5. The suitable temperature for growing is in the range between 0 to 40 °C whereas sowing temp is in the range between 25-35°C and harvesting at 20-40 °C. Approximately 500-3000 mm rainfall is suitable for growing conditions.

Medicinal properties-Leaves of eucalyptus trees contribute to most of the medicinal values. Few of them are highlighted below: 1.Antimicrobial properties: Oil extracts from the leaves contribute to the antimicrobial property of this tree and are effective against Gram-negative and Gram-positive bacteria. 2.Cold and respiratory problems: Herbal remedies recommend using fresh leaves in a gargle to relieve a sore throat, sinusitis, and bronchitis. Also, eucalyptus oil can be inhaled through the nose which provides some cold relief. 3.Dental care: There is a high content of ethanol and macrocarpal C in the leaves of this tree, which contributes in decreasing the plaque build-up, gum bleeding and gum inflammation 4.Promote relaxation: Eucalyptol is the anti-anxiety component found in the oil, a 30-minute massage with the oil stimulates the parasympathetic nervous system which promotes relaxation and decreases the sympathetic nervous system activity. It is also associated with reducing blood pressure. 5.Pain Relief: Compounds such as cineole and limonene are the anti-inflammatory compounds which act as pain relievers. 6.Immune system

AYURVEDA - SOLUTION OF ALL DISEASES

Methods of using eucalyptus 1. Used as tea bags 2. Aromatherapy: In steamer add few drops of eucalyptus oils and take the steam. 3. Whole Leaves for mouth wash: Leaves can be chewed and boiled in water for further use in treating cold and keeping good dental care

Precautions: Eucalyptus trees products like essential oils from leaves, tea bags give an immense advantage to use as a safe product, on the other hand, there are some health risks associated with consumption as it can lead to toxicity. Studies are still going on to determine whether the oil is safe for pregnant women or not, therefore it should be avoided in these populations. Additionally, it has been seen that eucalyptus oils may interact with certain medications like diabetes, high cholesterol, acid reflux, etc. It is recommended to consult a healthcare provider.

2. Thyme

Thyme is a medicinal herb belonging to the mint family and is cultivated in the western temperate Himalayas and Nilgiris but is the native to southern Europe from Spain to Italy, it is also grown in Australia, North Asia, North Africa, Canada, and the USA. Thyme is grown in well-drained soil with an optimal pH between 6.0 and 8.0 with plenty of sunlight and it is drought resistance hence it can be grown in water limiting conditions. Thyme can easily be grown in the backyard and have a lot of medicinal and therapeutic properties like it support the lung health as it cures coughs, colds, respiratory issues, bronchitis, promoting breathing etc. The tiny aromatic leaves are used to flavor foods and the aerial part is used to make essential oils. Use Thyme leaves 1. The simplest way is to add it to the food liberally. 2. Leaves can be used as a tea. Extract, decoction or the essential oils can be extracted out 3. Dried Thyme leaves along with honey and lime juice can be used to treat cold. There are many ways to use thyme to benefit lung health. One of the simplest ways is to add it liberally to your food. However, it can also be made into a tea, extract, decoction, or the essential oil can be used as well. Personally, I like to make a simple thyme syrup to help with respiratory illnesses during cold and flu season. Simply decoct some of the dried herb and add some honey and fresh squeezed lemon juice to it. Thyme helps fight respiratory infections and is a natural expectorant that serves as an antiseptic and helps expel mucus. It's also good for soothing coughs and fighting nasal congestion. Prepare it as a tea. Put a teaspoon of thyme in boiling water, let it stand for 10 minutes and then strain. Add a drop of lemon juice to enhance its disinfectant qualities. You can drink up to three cups a day. To soothe sore throats and tonsillitis, gargle with a thyme tea, or swallow a spoonful up to 3 times a day.

3. *Hibiscus sabdariffa*

Introduction– *Hibiscus sabdariffa* is commonly called as “roselle“ , belongs to malvaceae family. It is well known plant for its medicinal properties. *Hibiscus sabdariffa* is mainly native to West and east Africa and South- east Asia. It belongs to annual or perennial herbs. It contains various medically important compounds known as Phytochemicals which acts as an immunity

booster. *Hibiscus sabdariffa* L. Helps in treatment of various disorders like hypertension, hyperlipidemia.

Phytochemical properties of HS extract-HS flowers contains mainly compounds like malic acids, citric acids, flavonoids, glycosides [34] [35] [36] . The calyxes contains same organic acid and anthocyanin but contains minimal amount of Flavonoids and glycosides [34]. Anthocyanins are one of the main active constituents which promotes antihypertensive, antioxidant effects of HS extract [37][38] . HS extract have low degree of toxicity.

Medicinal uses and preparation of HS extract

In United States, HS is consumed as beverage [37] . Mainly flowers or more specifically the calyxes, are prepared using an infusion or aqueous decoction [39][40][41]. North Badiaregion of Jordan use flowers as well as leaves, and they consumes infusions hot to treat high blood pressure and cold to treat low blood pressure [42]. In Trinidad, and Tobago they use leaves only to treat high blood pressure and while treating high cholesterol they use flowers and seeds[43]. Many studies have shown the role of HS extract in treatment of hypertension and hyperlipidemia in different countries.

4. *Withania somnifera* (Ashwagandha)

It is one of the most important herbs in Ayurveda and has some amazing benefits. It is a great stress booster and also plays a key role in enhancing concentration. It helps beat heart disease as it lowers cholesterol levels in body. It also has some anti- cancer and anti- viral properties. It can be grown in sub- tropical areas in sandy loamy, well- drained soil. It requires pH of 7.5- 8 and temp about 20 -38 degree Celsius.

PART OF THE PLANT THAT CAN BE USED: leaves, roots (mainly)

EXTRACTION OF COMPONENTS: for the extraction of roots they have to be first dried. To remove the dust or impurities they have to be sieved and further a powder can be made. The pulverized powder is further extracted with polar solvent (first cold and then hot extraction). An extract is formed which is distilled. A few chemicals such as Paraben IP are added to form a pasty mass which can be further sent to evaporation to obtain powder in granular form. As per traditional methods the roots can be naturally dried and used as powder.

AYURVEDA - SOLUTION OF ALL DISEASES

USE OF EXTRACTED MATERIAL: the extracts in the form of capsules would be beneficial in unadulterated form. 300 mg of extract if used two times a day can cure Insomnia. The paste applied over joints (externally) can help cure Arthritis. For normal intake the powder can be added to milk. Cancer patients undergoing chemotherapy can use 2000 mg of extract to overcome the feeling of tiredness. It can also reduce anxiety and bipolar disorder in people. The white blood cells or leucocytes can be increased by having powder of ashwagandha with whole cow milk. The immune system can be made more stronger by the anti-oxidant property present in the plant.

1. Bacopa monnieri (brahmi)

It is a prostate herb and grows well in loamy soil with pH 5 to 7.5 and temp around 15 to 40 degree Celsius. It is widely used in Ayurveda as it helps improve memory performance and cognitive function.

PART OF THE PLANT THAT CAN BE USED: seed and leaf

EXTRACTION OF COMPONENTS: the dried plant material when macerated in 180 ml of 95% ethanol for 3 days results in the formation of extract which can be filtered through what- man filter paper. Filtrates are then evaporated to dryness under reduced pressure and coarse powder is obtained.

USE OF EXTRACTED MATERIAL: Due to anti-oxidant properties it helps in protecting the body from free radicals mediated damage and thus reduces oxidative stress. Regular consumption of 1 to 2 tablets or brahmi infusion helps in strengthening immune system. It also helps to cure arthritis, helps in proper brain functioning.



AYURVEDA - SOLUTION OF ALL DISEASES

FIGURE-2 REFERENCE-

(https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.plantsguru.com%2Fneer-brahmi&psig=AOvVaw2JgFjQMIFpuKHqao5XfzeN&ust=1594122932495000&source=images&cd=vfe&ved=0CAIQjRxqFwoTCNin8d_IuOoCFQAAAAAdAAAAABAJ)

MAIN FINDINGS

<u>S.N</u> <u>O</u>	<u>NAME OF</u> <u>THE</u> <u>PLANT</u>	<u>SCIENTIFI</u> <u>C NAME</u>	<u>ACTIVE</u> <u>COMPOUN</u> <u>DS</u>	<u>PART</u> <u>USED</u>	<u>MEDICINAL</u> <u>Role</u>	<u>REFRENCE</u> <u>S</u>
1	GARLIC	<i>Alliumsativum</i>	Alicin	GARLI C BULB	<ul style="list-style-type: none"> • Incredible nutritious contain Mn, Se, Vit B, Vit C and fibres. • Active compound can reduce cold and helps in breathing properly. • Contain antioxidants that may prevent many diseases. • Polysaccharides in fresh garlic exhibit a more potent activity in immunomodulatory. 	A-Chinedu I, Jivini SZ. Medicinal properties of ginger and garlic: A review. Current Trends in Biomedical Engineering & Biosciences. 2019;18(2):48-51.

AYURVEDA - SOLUTION OF ALL DISEASES

2	GINGER	<i>Zingiberofficin al</i>	Gingerols	RHIZO ME, GINGE R ROOT OR GINGE R	<ul style="list-style-type: none"> • It acts as anti-ulcer and anticholinergic. • It exhibits best antimicrobial and antiviral properties. 	<p>BARreola R, Quintero-Fabián S, López-Roa RI, Flores-Gutiérrez EO, Reyes-Grajeda JP, Carrera-Quintanar L, Ortuño-Sahagún D. Immunomodulation and anti-inflammatory effects of garlic compounds. Journal of immunology research. 2015 Apr 19;2015.</p>
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3	LICORICE	<i>Glycyrrhizagla bra</i>	Glycyrrhizin	ROOT EXTRA CT	<ul style="list-style-type: none"> • Antioxidant in nature. • Anti-inflammatory • Restoring physical strength and energizes the body from within. 	<p>C Cinatl J, Morgenstern B, Bauer G, Chandra P, Rabenau H, Doerr HW. Glycyrrhizin, an active component of liquorice roots, and replication of SARS-associated coronavirus. The Lancet. 2003 Jun 14;361(9374):2045-6.</p>
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4	ASHWAGAN DHA	<i>Withaniasomni fera</i>	Withaferin A, Withalongolide A, Withaferin triacetate.	ROOTS AND LEAVE S	<ul style="list-style-type: none"> • Increase stamina and endurance. • Active compounds help in building immunity. • Anticancer properties. • Greatly increase the white blood cells 	<p>D Kumar V, Dhanjal JK, Kaul SC, Wadhwa R, Sundar D. Withanone and caffeic acid phenethyl ester are predicted to interact with main protease (Mpro) of SARS-CoV-2</p>
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AYURVEDA - SOLUTION OF ALL DISEASES

5	GILOY	<i>Tinosporacordifolia</i>	Tinospora	STEM AND ROOT	<ul style="list-style-type: none"> • In Ayurveda, it acts a brain tonic. • It increases mind power. • Antioxidant activity. 	E-Alsuhairani S, Khan MA. Immune-stimulatory and therapeutic activity of Tinospora cordifolia: Double-edged sword against salmonellosis. Journal of immunology research. 2017 Jan 1;2017.
6	NEEM	<i>Azadirachta indica</i>	Nimbin, Nimbanene, 6-desacetylnimbinene, Nimbandiol, Nimbolide, Ascorbic acid, n-hexacosanol Nimbiol.	BARK, LEAVES, AND SEEDS.	<ul style="list-style-type: none"> • Antioxidant activity. • anticancer property. • Anti-inflammatory benefits. • Have role in wound healing. • Antibacterial and antifungal properties. 	F-Alzohairy MA. Therapeutics role of Azadirachta indica (Neem) and their active constituents in diseases prevention and treatment. Evidence-Based Complementary and Alternative Medicine. 2016 Oct;2016.

AYURVEDA - SOLUTION OF ALL DISEASES

7	TULSI	<i>Ocimumsanctum</i>	Essential oils- Eugenol, Carvacrol, Ursolic acid derivative, Apigenin.	LEAVES	<ul style="list-style-type: none"> • HEALING PROPERTY. • HELP IN STONE REMOVAL FROM KIDNEY. • ANTI-STRESS AGENT. • GOOD APPETIZER. • HELP IN CURING DIABETES. 	<i>G-Pattanayak P, Behera P, Das D, Panda SK. Ocimum sanctum Linn. A reservoir plant for therapeutic applications: An overview. Pharmacognosy reviews. 2010 Jan;4(7):95.</i>
8	TURMERIC	<i>Curcuma longa</i>	Curcumin	RHIZOME	<ul style="list-style-type: none"> • Antioxidant • Anti-inflammatory • Anticancer • Used to cure many diseases, related to autoimmune, neurological, Cardiovascular, diabetes. 	<i>H-Amalraj A, Pius A, Gopi S, Gopi S. Biological activities of curcuminoids, other biomolecules from turmeric and their derivatives—A review. Journal of traditional and complementary medicine. 2017 Apr 1;7(2):205-33</i>
9	CLOVE	<i>Syzygium aromaticum</i>	Phenolic compounds- Eugenol, Eugenol acetate, Gallic acid.	LEAVES, STEM, DRIED FLOWER BUD, OILS.	<ul style="list-style-type: none"> • Have antimicrobial and antioxidant properties. • Used as larvicidal agent for dengue. • Also used as analgesic for toothache, joint pain, antispasmodic. 	<i>I-Cortés-Rojas DF, de Souza CR, Oliveira WP. Clove (Syzygium aromaticum): a precious spice. Asian Pacific journal of tropical biomedicine. 2014 Feb 1;4(2):90-6.</i>

AYURVEDA - SOLUTION OF ALL DISEASES

10	CUMIN	<i>Cuminum cyminum</i>	Cuminaldehyde	SEEDS	<ul style="list-style-type: none"> • Antiallergic • Antioxidant • Antiplatelet aggregation • Hyperglycaemic 	<i>J-Johri RK. Cuminum CYMINUM and Carum carvi: An update. Pharmacognosy reviews. 2011 Jan;5(9):63.</i>
11.	FENNEL	<i>Foeniculum vulgare</i>	Phenolic compound- Rosmarinic acid, Chlorogenic acid. Flavonoids compound- Quercetin, Apigenin	DRIED RIPE SEEDS, OILS.	<ul style="list-style-type: none"> • Used as medicine for digestive, endocrine, reproductive, Respiratory disorders. • Used as galactagogue agent in lactating mothers. • COLORING AND ANTIAGING AGENT. • 	<i>K-Shahmokhtar MK, Armand S. Phytochemical and biological studies of fennel (Foeniculum vulgare Mill.) from the south west region of Iran (Yasouj). Nat. Prod. Chem. Res. 2017;5(4):1-4.</i>
12.	GURMAR	<i>Gymnema sylvestre</i>	GYMNEMIC ACID	WHOLE PLANT	<ul style="list-style-type: none"> • Cure diabetes • Cure jaundice • Antioxidant • Anti-inflammatory • Antimicrobial 	<i>Arunachalam KD, Arun LB, Annamalai SK, Arunachalam AM. Potential anticancer properties of bioactive compounds of Gymnema sylvestre and its biofunctionalized silver nanoparticles. International Journal of Nanomedicine. 2015; 10:31.</i>

AYURVEDA - SOLUTION OF ALL DISEASES

13	INSULINE PLANT	<i>Costus igneus</i>	Flavonoids Tannins Saponins Alkaloids Glycosides	FRESH LEAVES	<ul style="list-style-type: none"> • Reduce blood sugar level • Antioxidant • Cancer prevention properties. • Antimicrobial 	Hegde PK, Rao HA, Rao PN. A review on Insulin plant (<i>Costus igneus</i> Nak). Pharmacognosy reviews. 2014 Jan;8(15): 67.
14	VASAKA	<i>Adhatoda vasica</i>	Vasicine (quinazoline)	LEAVES AND FLOWERS	<ul style="list-style-type: none"> • Anti-inflammatory • Analgesic • Astringent • Cure for bronchitis • Asthma • Jaundice • Fever 	Soni S, Anandjiwala S, Patel G, Rajani M. Validation of different methods of preparation of <i>Adhatoda vasica</i> leaf juice by quantification of total alkaloids and vasicine. Indian journal of pharmaceutical sciences. 2008 Jan;70(1): 36.
15	PATHERCHUR	<i>Kalanchoe pinnata</i>	Leaves- Bufadienolides	LEAVES	Urinary disorders Hypertension Cardiac disease.	Gilhotra UK, Christiana AJ. Antilithiatic activity of <i>Kalanchoe pinnata</i> pers. on 1% ethylene glycol induced

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						lithiasis in rats. Int J Pharm Sci Rev Res. 2011;10(1):187 -92.
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CONCLUSION

This review emphasis on prevention done against covid-19 using common herbal medicinal plants. Herbal formulation is regarded as positive immunomodulator. There is need to screen the herbal plants in the forest since India is one of the 12 leading biodiversity and placed on a gold mine of well practiced and recorded knowledge of traditional herbal plants. Ayurveda have solutions to all problems related to our body. It has a cure for everything. Conservation of forest by the local bodies, tribal people is crucial to avoid the further loss and to increase our traditional knowledge.

ACKNOWLEDGEMENT

We would like to express our gratitude to Bikram kalsi sir for his continuous support and suggestion in completing our project.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

AYURVEDA - SOLUTION OF ALL DISEASES

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AYURVEDA - SOLUTION OF ALL DISEASES

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