

Medicinal Plants and their Traditional Uses

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ABSTRACT

Humans have relied on nature throughout their ages to fulfill their basic needs including medicines to cure a wide spectrum of diseases. Medicinal plants and their components possess a range of beneficial preventive properties. They show many promising effects for various health problems such as colds, coughs, throat irritations, skin problems, stomachache, indigestion, gastrointestinal diseases and also have positive protecting activities such as sedative, antiviral, anti-inflammatory, antiseptic, hepatoprotective, antihyperglycemic and immunostimulating. Medicinal plants like aloe, turmeric, tulsi, giloy, pepper, elachi, neem, ginger etc are commonly used in a number of Ayurvedic home remedies and are considered to be the best aid among fighting ailments related to throat and skin. As a rich source of nutrients, anti-bacterial and antioxidant properties, ayurvedic herbs are non-toxic in nature and so the products or remedies made using them are often recommended for their high therapeutic value. This paper focuses on the traditional uses of some common Indian medicinal plants.



KEYWORDS: Medicinal plants, Ayurvedic system, bioactive compounds, phytochemicals

1. INTRODUCTION

Medicinal plants have been the basis of treatment of various diseases in Indian traditional medicine as well as other forms of treatment from diverse cultures of the world. About 80% of the world's population still depends solely on traditional or herbal medicine for treatment of diseases, mostly in India and other developing nations. Medicinal plants are the natural health care to the people. Their primary cure of diseases is based upon deep observation of nature and their understanding of traditional knowledge of

medical practices. Local people heavily use these traditionally easily available medicinal plants for health which are less expensive without side effects. Most of the potent medicinal plants have relatively non-toxic or adverse effects when used by humans, while some are very toxic to both humans and animals with the potential of damaging certain organs in the body. This calls for caution in the use of medicinal plants of which the use is presently on the increase due to easy availability, affordability,

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accessibility and promising efficacy comparable to the often high cost and adverse effects of standard synthetic drug agents. A single medicinal plant can have multiple uses and sometimes different parts of the same plant may be used for the treatment of more than one disease condition. Other times, the same plant could be used as an ingredient in herbal preparations for a synergistic effect. This is made possible due to the range of phytochemicals that are present in medicinal plants along with their diversities of bioactivities.

Ayurvedic Herbs and spices such as black pepper, cinnamon, aloe, sandalwood, ginseng, red clover, burdock, bayberry and safflower are used to heal wounds, sores and boils. To reduce fever and the production of heat caused by the condition, certain antipyretic herbs such as chirayta, black pepper and sandalwood are recommended. Sandalwood and cinnamon are great astringents apart from being aromatic. Sandalwood is especially used in arresting the discharge of blood, mucus etc. Ajwain, Amla, Aswagandha etc. serve as antacids and are recommended for healthy gastric acid flow and proper digestion. Herbs like Cardamom and Coriander are renowned for their appetizing qualities. Other aromatic herbs such as peppermint, cloves and turmeric add a pleasant aroma to the food, thereby increasing the taste of the meal. Herbs like Aloe, Sandalwood, Turmeric, Sheetraj and Khaskhas are commonly used as antiseptic and have very high medicinal values. Camomile, Basil/Tulsi, Cardamom, Ginger, Peppermint and Coriander are known to promote blood circulation in the body and keep the heart healthy.

Apart from medicinal use, these herbs can also be used for purposes like pest control, natural dyes and formulation of food items, tea and perfumes among others. If we look at various researches from across the world, a sudden spurt in cases of people turning to natural herbs for treatments and usage in everyday life has gone up significantly. Going back to the basics, people have realized the threat chemically treated products pose to their life and are rightly so adopting healthier ways of life by including Ayurveda and its principals as the mainstay of their life.



Fig 1: Some common medicinal plants

2. Some Common Medicinal Plants and Their Traditional Uses

Ayurvedic herbs are time tested for their health and other benefits. The nutritive values that they pack are highly recommended for their healing powers. Known to induce no side effects, they have a unique aroma and flavor and when consumed regularly, they act as a perfect mechanism to bring about a balanced harmony between mind and body. They rejuvenate the whole system instead of focusing on one specific organ or body part. Some common medicinal plants and their traditional uses are given here:

2.1. *Ocimum sanctum* or Holy Basil or Tulsi

Ocimum sanctum, commonly known as holy basil or tulsi is an aromatic perennial plant in the family Lamiaceae. It is native to the Indian subcontinent and widespread as a cultivated plant throughout the Southeast Asian tropics. Tulsi is cultivated for religious and traditional medicine purposes and also for its essential oil. It is widely used as herbal tea, commonly used in Ayurveda. Indian mythology attaches a great significance to Tulsi by recognizing it as a holy herb. Perhaps, such significance comes from the actual health applications of the herb. Its use is recommended as a first aid in the treatment of respiratory, digestive and skin diseases. Apart from these common ailments, Ayurveda also recognizes its use for the diseases ranging up to tumorous growths. Experimental studies identify it to be a highly promising immunomodulator, cytoprotective and anticancer agent. Following are the benefits & uses of Tulsi plant or Holy Basil:

- 1. Promotes Healthy Heart:** Holy basil contains vitamin C and antioxidants such as eugenol, which protects the heart from the harmful effects of free radicals. Eugenol also proves useful in reducing cholesterol levels in the blood.

2. **Anti-aging:** Vitamin C and A, phytonutrients, in Holy Basil are great antioxidants and protect the skin from almost all the damages caused by free radicals.
3. **Treats Kidney Stones:** Tulsi acts as a mild diuretic & detoxifying agent which helps in lowering the uric acid levels in the body. Acetic acid present in holy basil helps in the breakdown of the stones.
4. **Relieves Headaches:** Tulsi is a natural headache reliever which can also relieve migraine pain.
5. **Fights Acne:** Holy basil helps to kill bacteria and infections. The primary active compound of holy basil oil is eugenol which helps to fight skin related disorders. It helps in treatment of skin infections both internally and externally.
6. **Relives Fever:** Tulsi is an age-old ingredient for treating fever. It is one of the prime ingredients in the formulation of various ayurvedic medicines & home remedies.
7. **Eye Health:** Tulsi's anti-inflammatory properties help to promote eye health by preventing viral, bacterial and fungal infections. It also soothes eye inflammation and reduces stress.
8. **Oral Health:** Tulsi is a natural mouth freshener and an oral disinfectant. *Ocimum sanctum* can also cure mouth ulcers. Holy basil destroys the bacteria that are responsible for dental cavities, plaque, tartar and bad breath, while also protecting the teeth.
9. **Cures Respiratory Disorders:** Due to the presence of compounds like camphene, eugenol and cineole, tulsi cures viral, bacterial and fungal infections of the respiratory system. It can cure various respiratory disorders like bronchitis & tuberculosis.
10. **Rich Source of Vitamin K:** Vitamin K is an essential fat-soluble vitamin that plays an important role in bone health and heart health.



Fig 2: *Ocimum sanctum* or Holy Basil or Tulsi

2.2. *Azadirachta indica* or Neem

Azadirachta indica, commonly known as neem, nimtree or Indian lilac, is a tree in the mahogany family Meliaceae. It is one of two species in the genus *Azadirachta*, and is native to the Indian subcontinent and most of the countries in Africa. It is typically grown in tropical and semi-tropical regions. Its fruits and seeds are the source of neem oil. Neem is considered a boon for mankind by nature. Use of Neem has been recommended by Ayurveda for a wide range of diseases. Such uses are attributed to its purification effect on blood. Scientific research on Neem demonstrates it to be a Panacea. It is suggested to be an antibacterial, anthelmintic, antiviral, anticancer and more importantly Immunomodulatory agent. There are numerous benefits and uses of neem leaves as follows:

1. **Treats Acne:** Neem has an anti-inflammatory property which helps to reduce acne. It also helps to reduce skin blemishes.
2. **Nourishes Skin:** Neem is a rich source of Vitamin E which helps to repair damaged skin cells.
3. **Treats Fungal Infections:** Neem has scientifically proven antifungal which helps in treatment of fungal infections.
4. **Useful in Detoxification:** Neem can prove useful in detoxification both internally and externally. Consumption of neem leaves or powder stimulates kidneys and liver increasing the metabolism and eliminating the toxins out of the body. Externally, neem scrubs or paste can be used to remove germs, bacteria, dirt etc from your skin preventing rashes and skin diseases.
5. **Increases Immunity:** Neem is known for its antimicrobial and antibacterial effects. These properties play a huge role in boosting immunity.
6. **Insect & Mosquito Repellent:** Neem is also effective against **different types of mosquitoes**. From all the **home remedies for malaria**, neem is the best for treating the early symptoms of malaria.
7. **Prevents Gastrointestinal Diseases:** Neem's anti-inflammatory properties help to reduce inflammation of the gastrointestinal tract which help to reduce a series of diseases like constipation, stomach ulcer, flatulence etc.
8. **Treats Wounds:** Neem leaves have antiseptic property therefore, these are used to heal wounds.

9. **Reduces Dandruff:** Neem is extensively used in shampoos and conditioners. It has antifungal and antibacterial properties which help to eliminate dandruff and strengthen hair.
10. **Reduces Joint Pain:** Application of neem oil or extract on the affected area can help to reduce pain and discomfort. Hence it is widely used for treating arthritis.
11. **Exfoliates skin:** Neem is an excellent exfoliant. It helps to remove dead cells from the surface of the skin which will help prevent the growth of blemishes.



Fig 3: *Azadirachta indica* or Neem

2.3. *Curcuma longa* or Turmeric or Haldi

Turmeric is a product of *Curcuma longa*, a rhizomatous herbaceous perennial plant belonging to the ginger family Zingiberaceae (rhizomes are used in cooking), which is native to tropical South Asia. Turmeric has a very long history of medicinal use, dating back nearly 4000 years. In Southeast Asia, turmeric is used not only as a principal spice but also as a component in religious ceremonies. Because of its brilliant yellow color, turmeric is also known as “**Indian saffron.**” In folk medicine, turmeric has been used in therapeutic preparations over the centuries in different parts of the world. In Ayurvedic practices, turmeric is thought to have many medicinal properties including strengthening the overall energy of the body, relieving gas, dispelling worms, improving digestion, regulating menstruation, dissolving gallstones and relieving arthritis. Many South Asian countries use it as an antiseptic for cuts, burns and bruises, and as an antibacterial agent. In Ayurvedic medicine, turmeric is a well-documented treatment for various respiratory conditions (e.g. asthma, bronchial hyperactivity and allergy), as well as for liver disorders, anorexia, rheumatism, diabetic wounds, runny nose, cough and sinusitis. In traditional Chinese medicine, it is used to treat diseases associated with abdominal pain). From ancient times, as prescribed by Ayurveda, turmeric

has been used to treat sprains and swelling). In both Ayurvedic and traditional Chinese medicine, turmeric is considered a bitter digestive and a carminative. Unani practitioners also use turmeric to expel phlegm or kapha, as well as to open blood vessels in order to improve blood circulation. It can be incorporated into foods, including rice and bean dishes, to improve digestion and reduce gas and bloating. It is a cholagogue, stimulating bile production in the liver and encouraging excretion of bile via the gall bladder, which improves the body’s ability to digest fats. Sometimes, turmeric mixed with milk or water is taken to treat intestinal disorders as well as colds and sore throats. Indians use turmeric, in addition to its Ayurvedic applications, to purify blood and remedy skin conditions. Turmeric paste is used by women in some parts of India to remove superfluous hair. Turmeric paste is applied to the skin of the bride and groom before marriage in some parts of India, Bangladesh, and Pakistan, where it is believed to make the skin glow and keep harmful bacteria away from the body. Turmeric is currently used in the formulation of several sunscreens. Several multinational companies are involved in making face creams based on turmeric. Some uses of turmeric are given below:

1. **Anti-Inflammatory:** The best-known health benefit of turmeric is its anti-inflammatory and antioxidant properties, giving it the power to alleviate swelling and pain in conditions such as arthritis. Inflammation is a very common cause of pain and discomfort. It can also contribute to the development of certain diseases. Turmeric usage reduces the risk of the side effects of taking prescription anti-inflammatory drugs.
2. **Boosts Immunity:** The immune system is responsible for protecting the body against pathogens that can cause disease and infection. Turmeric has been shown to be one of the best foods to maintain, protect and boost immunity, reducing the risk of falling ill. Turmeric has antiviral, antibacterial and antimicrobial properties.
3. **Pain Relief:** Turmeric can ease pain and is used as a pain reliever for arthritis pain. This has been studied in several trials, particularly for patients with arthritis.
4. **Potent Antioxidant:** Turmeric has antioxidant properties that help fight free radical damage and oxidative stress. Oxidative damage is believed to be one of the mechanisms behind the development of numerous diseases and aging. Curcumin is a potent antioxidant that can help neutralize free radicals. Aside from that, curcumin

can boost the activity of antioxidant enzymes in the body.

5. **Improve Brain Function:** Curcumin can improve and boost levels of the brain hormone brain-derived neurotrophic factor (BDNF), which promotes the growth of new neurons and wards off many degenerative processes in the brain. Hence, turmeric has been used to attempt to prevent diseases such as Alzheimer's disease.
6. **Lower Heart Disease Risk:** Curcumin plays a major role in the prevention of heart disease. Its antioxidant and anti-inflammatory properties can improve the function of the endothelium. Moreover, it lowers the level of low-density lipoproteins (LDL) or the "bad" cholesterol. This can help reduce the risk of developing heart disease and even stroke.
7. **Aids in Digestion:** Turmeric also supports enzymatic reactions, muscle movement, acid production and optimal absorption of nutrients in the gut.



Fig 4: *Curcuma longa* or Turmeric or Haldi

2.4. *Tinospora cordifolia* or Giloy

Giloy (*Tinospora cordifolia*) is a climbing shrub that grows on other trees, from the botanical family *Menispermaceae*. The plant is native to India but also found in China and tropical areas of Australia and Africa. It is considered an essential herbal plant in Ayurvedic and folk medicine, where people use it as a treatment for a wide range of health conditions. All parts of this plant are thought to have health benefits. However, the stem is thought to have the most beneficial compounds. The Ayurvedic Pharmacopoeia of India has approved the plant's stem for use in medicine. People have long used it to treat a wide range of issues, including fever, infections, diarrhea and diabetes. All parts of the plant are used in Ayurvedic medicine. Giloy is also called giloe, guduchi and amrita, among other names. The word "giloe" is a Hindu mythological term. It refers to a mythical heavenly elixir that keeps celestial beings eternally young. In Sanskrit, "guduchi" means something that protects the whole body, and "amrita"

which literally translates to 'the root of immortality', because of its abundant medicinal properties. Traditionally, giloy is used to treat fever, urinary problems, asthma, dysentery, diarrhea, skin infections, Hansen's disease (formerly called leprosy), diabetes, gout, jaundice, anorexia, eye conditions etc. Giloy can be consumed in the form of juice, powder or capsules. Many people include giloy in traditional kadhas as well. Some of the health benefits of giloy are given here:

1. **Boosts Immunity:** Giloy is a universal herb that helps to boost immunity. It is a powerhouse of antioxidants which fight free-radicals, keep cells healthy and get rid of diseases. Giloy helps to remove toxins, purifies blood, fights bacteria that causes diseases and also combats liver diseases and urinary tract infections. Giloy is used by experts in treating heart related conditions and is also found useful in treating infertility.
2. **Treats Chronic Fever:** Giloy helps get rid of recurrent fevers. Since Giloy is anti-pyretic in nature, it can reduce signs and symptoms of several life threatening conditions like Dengue, Swine Flu and Malaria as well.
3. **Improves Digestion:** Giloy is very beneficial in improving digestion and treating bowel related issues.
4. **Treats Diabetes:** Giloy acts as a hypoglycaemic agent and helps to treat diabetes (particularly Type 2 diabetes). Giloy juice helps to reduce high levels of blood sugar and works wonders.
5. **Reduces Stress and Anxiety:** Giloy can be used as an adaptogenic herb as well. It helps to reduce mental stress as well as anxiety. It helps get rid of toxins, boosts the memory, calms the body and makes for an excellent health tonic if combined with other herbs.
6. **Fights Respiratory Problems:** Giloy is popularly known for its anti-inflammatory benefits and helps to reduce respiratory problems like frequent cough, cold, tonsils.
7. **Treats Arthritis:** Giloy contains anti-inflammatory and anti-arthritic properties that help to treat arthritis and its several symptoms. For joint pain, the powder from giloy stem can be boiled with milk and consumed. It can be used along with ginger to treat rheumatoid arthritis.
8. **Reduces Asthmatic Symptoms:** Asthma causes chest tightness, shortness of breath,

coughing, wheezing, etc. which makes it very difficult to treat such a condition. Chewing of giloy root or drinking giloy juice helps asthma patients and is often recommended by experts

9. **Improves Vision:** In several parts of India, Giloy plant is applied to the eyes as it helps boost vision clarity.
10. **Reduces Signs Of Aging:** Giloy plant contains anti-aging properties that help to reduce dark spots, pimples, fine lines and wrinkles. It gives flawless, glowing skin.



Fig 5: *Tinospora cordifolia* or Giloy

2.5. *Aloe vera* or Ghrith Kumari

Aloe vera, a member of the Liliaceae family, is a spiky, succulent, evergreen perennial plant species of the genus *Aloe*. It is indigenous to eastern and southern Africa, but has been spread throughout many of the warmer regions of the world, and is also popularly grown indoors. There are about 300 identified species, but *Aloe vera* ("true aloe") is the most popular for medical applications. It has also been known as *Aloe vulgaris* ("common aloe") and *Aloe barbadensis*. It is cultivated for commercial products, mainly as a topical treatment used over centuries. The species is attractive for decorative purposes and succeeds indoors as a potted plant. *Aloe vera* has been in use for thousands of years and is mentioned in records as long ago as 1750 bc. Use of the plant is thought to have originated in Egypt or the Middle East. It was reputedly used in Egyptian embalming procedures, as drawings of *Aloe vera* have been found on cave walls in the region. Legend has it that *Aloe vera* was one of Cleopatra's secrets for keeping her skin soft. Pliny and Dioscorides of ancient Greece wrote of the healing effects of this plant. Additionally, Alexander the Great is said to have acquired Madagascar so that he could utilize the *Aloe vera* growing there to treat soldiers' wounds. It is also a remedy which has long been used in the Indian practice of Ayurvedic medicine. Its use is recommended in Ayurveda as a skin conditioner and in the treatment of non-healing ulcers, burn injuries

and in treating the liver diseases like jaundice. Experimental studies on *Aloe* suggest its positive cosmetic value and wound healing properties. Also it was observed that internal use of *Aloes* evokes positive immune response in experimental animals. The use of *Aloe vera* is bestowed with multifaceted benefits for skin. By virtue of these properties, it is used frequently in the skin care preparations across the globe. Some benefits of *Aloe vera* are given here:

1. **Antioxidant and antibacterial properties:**

Antioxidants are important for health. *Aloe vera* gel contains powerful antioxidants belonging to a large family of substances known as polyphenols. These polyphenols, along with several other compounds in *Aloe vera*, help to inhibit the growth of certain bacteria that can cause infections in humans. *Aloe vera* is known for its antibacterial, antiviral and antiseptic properties. Therefore, it may help to heal wounds and treat skin problems.

2. **Wound healing:**

People most often use *aloe vera* as a topical medication, rubbing it onto the skin rather than consuming it. In fact, it has a long history of use in treating sores, and particularly burns, including sunburn. The United States Pharmacopeia describes *Aloe vera* preparations as a skin protectant. Studies suggest that it is an effective topical treatment for first and second degree burns. It also helped prevent redness, itching, and infections. The evidence for *Aloe vera* helping heal other types of wound is inconclusive, but the research is promising.

3. **Reduces dental plaque:**

Tooth decay and diseases of the gum are very common health problems. One of the best ways to prevent these conditions is to reduce the buildup of plaque or bacterial biofilms, on the teeth. *Aloe vera* is effective in killing the plaque-producing bacterium *Streptococcus mutans* in the mouth, as well as the yeast *Candida albicans*.

4. **Treatment of canker sores:**

Many people experience mouth ulcers, or canker sores, at some point in their lives. These usually form underneath the lip, inside the mouth, and last for about a week. *Aloe vera* treatment can accelerate the healing of mouth ulcers, it also reduces the pain associated with them.

5. **Reduces constipation:**

Aloe vera may also help in treatment of constipation. This time it is the latex, not the gel that provides the benefits. The latex is a sticky yellow residue present just under the skin of the leaf. The key compound responsible for this effect is called aloin, or

barbaloin, which has well-established laxative effects.

6. **Improves skin and prevent wrinkles:** There is some preliminary evidence to suggest that topical *Aloe vera* gel can slow aging of the skin. Reviews also suggest that *Aloe vera* could help the skin retain moisture and improve skin integrity, which could benefit dry skin conditions. *Aloe Vera* helps to soothe skin injuries affected by burning, skin irritations, cuts and insect bites, and its bactericidal properties relieve itching and skin swellings. It is known to help slow down the appearance of wrinkles and actively repair the damaged skin cells that cause the visible signs of aging.
7. **Lowers blood sugar levels:** People sometimes use aloe vera as a remedy for diabetes. This is because it may enhance insulin sensitivity and help improve blood sugar management.



Fig 6: Aloe vera or Ghrith Kumari

2.6. *Phyllanthus emblica* or Indian gooseberry or Amla

Phyllanthus emblica, also known as Indian gooseberry or amla, from the Sanskrit amalaki, is a deciduous tree of the family Phyllanthaceae. Indian Gooseberry has been given a prominent place in Ayurveda. In ancient India it was believed that Ambrosia (heavenly nectar) contained all rasas thereby, it could impart immortality. In that sense Amlaki and Hareetaki stand next by exhibiting five rasas. Therefore, Gooseberry is considered a "Rasayana" bestowed with anti-aging effects. Enthusiastic investigations on Amla substantiate almost all of its acclaimed properties. It has been identified to be a potent antioxidant, immunomodulatory, antistress etc. Apart from its medicinal use, it also finds an important place in traditional hair and skin care formulations. Its cytoprotective role has been investigated in detail. For Ayurveda Amla is considered to be a nature's boon.

There are numerous Amla benefits and uses as follows:

1. **Improves Immunity:** Amla benefits include antibacterial & astringent properties which help improve the body's immunity system. Indian Gooseberry also increases white blood cells which help flush out the toxins from the body.
2. **Hair Care:** Amla is used in a lot of shampoos and conditioners owing to its rich antioxidant & iron content. Indian Gooseberry contains high levels of Vitamin C which helps reduce hair fall. It also strengthens the roots & maintains hair color. Antibacterial properties of Amla helps to remove dandruff.
3. **Reduces Stress:** Amla is a great stress reliever which helps to induce sleep and relieve headaches.
4. **Eye Care:** Amla is rich in carotene content which is well known for its powerful effect on vision-related conditions. Formulation made of Indian Gooseberry and Honey helps to improve eyesight, near-sightedness and cataracts.
5. **Respiratory Health:** Amla proves beneficial against respiratory disorders. It helps to reduce cough, tuberculosis, throat infections and flu.
6. **Treats Anemia:** Amla is a rich source of iron, deficiency of which causes anemia.
7. **Blood Purifier:** Amla acts as an active blood purifier when consumed with honey.
8. **Diuretic:** Amla is also diuretic in nature. It means that Indian Gooseberry helps to increase the volume and frequency of urination which improves the elimination of toxins from the body.
9. **Improve Digestion:** Amla is rich in dietary fiber which helps to improve the overall digestion process.
10. **Absorbs Calcium:** Amla benefits also include absorbing calcium which is an essential element for teeth, bones & hair.
11. **Anti-aging:** Amla reduces the number of free radicals in the body through its antioxidant properties. It helps to reduce wrinkles, dark circles and other signs of aging. It also protects the body from radiation.
12. **Improves Mental Functions:** Daily consumption of Amla helps to improve nerve health facilitating proper blood flow. It helps to prevent diseases like dementia and Alzheimer's disease. Indian Gooseberry also helps to improve concentration power and memory skills.

13. **Weight Management:** Amla is known to boost metabolism which helps to reduce body fat. It is recommended to add Amla in one's daily diet.
14. **Skin Care:** Amla helps flush out the harmful toxins from the body reducing skin blemishes. The astringent properties of Indian Gooseberry help to tighten the pores, giving clear and healthy skin.



Fig 7: *Phyllanthus emblica* or Indian gooseberry or Amla

2.7. *Asparagus racemosus* or Shatawari

Asparagus racemosus (satavar, shatawari, shatamull or shatawari) is a species of *Asparagus* common throughout India and the Himalayas, is a well-recognized herb for its action as a nutritive tonic. Its use is specifically recommended to enhance lactation in nursing mothers. The marked increase in lactation by Shatawari has been scientifically proven today. Technically termed as galactagogue, this effect is attributed to its action on the prolactin hormone level. Besides, it is recommended by Indian Ayurveda to improve physical stamina and immunity. Role of Shatawari in enhancing immunity functions has also been proven scientifically. There are numerous *Asparagus* or Shatawari benefits and uses as follows:

1. **Reduces Cholesterol:** Shatawari root powder has various compounds like saponins, flavonoids and ascorbic acid which increases the excretion of cholesterol. *Asparagus* helps to reduce bad cholesterol and promotes the generation of good cholesterol which helps to reduce the risk of cardiovascular diseases.
2. **Diuretic:** Shatawari is Diuretic in nature which means that regular consumption of *Asparagus* can help to improve the volume and frequency of urination.
3. **Treats Diarrhea:** Shatawari is an age-old remedy to treat diarrhea.
4. **Aids Digestion:** One of the Shatawari benefits include enhancing digestion. *Asparagus* improves

digestion by increasing the activity of digestive enzymes lipase and amylase. Lipase aids fat digestion whereas amylase helps with the digestion of carbohydrates.

5. **Treats Kidney Stones:** Owing to Shatawari's diuretic properties, it can prove useful in relieving kidney stones. Also, *Asparagus racemosus* is anti-urolithiasis which hastens the process of dissolving stones and stops the process of new stones formation.
6. **Boosts Immunity:** Shatawari roots contains Sapogenin which is a potent agent for stimulating immune cells. *Asparagus racemosus* helps in improving body's resistance against disease-causing agents. Sapogenins also stimulate the cells that fight infection by overpowering the infection causing cells.
7. **Female Reproductive System:** Shatawari's main components are saponins that help to regulate estrogen. This modulation helps to control menstrual cycles, manage PMS symptoms, ease menstrual cramps and control the amount of blood loss.



Fig 8: *Asparagus racemosus* or Shatawari

2.8. *Glycyrrhiza glabra* or Liquorice or Mulethi

Liquorice or *Glycyrrhiza glabra*, is a herbaceous perennial flowering plant of the bean family Fabaceae, native to Western Asia, North Africa and southern Europe. Liquorice extracts have been used in herbalism and traditional medicine. The root tastes sweet and is used in Ayurveda to treat various diseases. Some benefits of mulethi are given here:

1. **Respiratory & Digestive Disorders:** It has been conventionally used by Ayurveda in the treatment of respiratory and digestive disorders. Mulethi uses specifically include treatment of chronic acidity, ulcers and chronic bronchial conditions. Investigations observed that licorice activates ulcer healing.
2. **Reduces Stress & Depression:** Mulethi benefits include relieving people suffering from the

problem of depression. Including licorice root in daily diet, helps in controlling stress hormones, reducing depression, anxiety and stress.

3. **Controls Cholesterol:** Licorice root is considered to be an extremely effective remedy for lowering the level of bad cholesterol in the body and increasing the level of healthy cholesterol in the body. Thus helps in keeping body healthy and free from harmful diseases. Controlling cholesterol is one of the effective mulethi benefits.
4. **Boosts Immunity:** Mulethi benefits include boosting immunity system, which helps in giving strength to fight many diseases and illnesses. This helps body from being affected by harmful diseases.
5. **Keeps your Liver Healthy:** Licorice root is considered to be an effective option for keeping liver, healthy and free from diseases. This helps in protecting body from being damaged by free radicals and also helps in treating jaundice thus keeping liver healthy.
6. **Treats Skin Disorders:** Licorice root is extremely beneficial for skin, as it helps in protecting skin from various skin disorders such as rashes, eczema, psoriasis and dry skin.
7. **Weight Management:** Licorice root is considered to be an extremely effective remedy or weight loss, including licorice root in diet, along with rigors exercise routine will help in burning excess fat from body.
8. **Treats Sore Throat & Cough:** Licorice root is an excellent remedy for curing problems such as sore throat and cough. They also help in treating respiratory tract infections such as bronchitis and asthma.

Glycyrrhiza glabra
liquorice • licorice



Fig 9: Glycyrrhiza glabra or Licorice or Mulethi

2.9. *Withania somnifera* or Winter Cherry or Ashwagandha

Ashwaandha is a small perennial shrub with white flowers and orange red berry found in warmer regions of India. Today the herb is completely domesticated and is cultivated extensively in central and western India. The roots are used in the preparation of various formulations of Ayurvedic origin. Roots of Winter cherry are highly acclaimed tonic for brain and nervous system in Ayurveda. Its usage is recommended in preventive health care. It is considered as "Medhya" which implies to its beneficial effects to the brain. Detail investigations, both clinical and experimental, observed that Ashwagandha acts as an antistress and adaptogenic herb. Regular use of Ashwagandha improves stress tolerance, thereby enhancing the mental capabilities. It is also known to improve the quality of immune functions. By virtue of these uses it is often referred to as "Indian Ginseng". Some benefits of Ashwagandha are given here:

1. **Helps Fight Depression:** Ashwagandha might prove useful in reducing depression levels.
2. **Treats Erectile Dysfunction:** Ashwagandha is good for boosting the libido in men and can be used in the formulation of medicine for erectile dysfunction (ED).
3. **Increases Muscle Mass:** Ashwagandha has been found to be useful in improving the muscle mass, body composition & overall strength.
4. **Increase Fertility in Men:** Ashwagandha uses also include increasing sperm count & motility. It helps to increase testosterone levels and significantly boosts sperm quality and fertility in men.
5. **Controls Diabetes:** One of the Ashwagandha benefits is to control diabetes. Ashwagandha stimulates the pancreas to secrete insulin which helps to lower blood sugar levels and hence control diabetes.
6. **Enhances Memory:** Ashwagandha supplements may improve brain function, memory & reaction times.
7. **Reduce Stress & Anxiety:** Ashwagandha has been scientifically proven to reduce stress and anxiety. It helps to reduce Cortisol also known as stress hormone which is released by the adrenal glands in response to stress.
8. **Boosts Immunity:** Studies have shown that consumption of Ashwagandha helps to boost immunity. It also helps to improve white blood cells & red blood cells.

9. **Antibacterial Properties:** Ashwagandha has proven antibacterial properties. It helps to prevent bacterial infections.
10. **Lowers Cholesterol:** Ashwagandha health benefits also include improving heart health by lowering cholesterol.
11. **Boosts Thyroid Function:** Ashwagandha may be able to benefit people with low thyroid function since animal studies show that it has a thyroid hormone balancing effect. *Withania somnifera* root extract if given on a daily basis, can increase the secretion of thyroid hormones.



Fig 10: *Withania somnifera* or Winter Cherry or Ashwagandha

3. Concluding remarks and future perspectives

Medicinal plants are an essential natural resource for the treatment of more persistent diseases. Various medicinal plants can be used to treat similar diseases, depending on the country in which the disease occurs. In some localities, medicinal plants are perceived according to their traditional uses and represent a low-cost alternative to treat various diseases. However, more ethnobotanical studies are still needed to quantitatively document the use of medicinal plants and their beneficial effects when they are used as the only option to treat a disease, as well as their toxicological effects. The medicinal plants may not be as useful as claimed or they may have more therapeutic properties than are known traditionally by indigenous people. Therefore, there is a need for proper scientific investigation to explore the exact medicinal potentials of these local plants.

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