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B12I2_Medicinal Plants

A) *Adhatoda zeylanica* /Adulsa/A. Vasica:



Family :-Acanthaceae

Common name:-

Hindi:-Adusa

Marathi:-Adulsa

Sanskrit:-Vasaka

Description:-A tall much-branched, dense, evergreen shrub, with large, lance-shaped leaves. Flowers in dense, short spikes; stalks of the spike shorter than leaves. Leaves-like structure called bracts, present on the spikes; these are conspicuously veined. Corolla (the whorls of petals) of the flower is white few purplish markings. Fruits capsular, 4-seeded.

Parts Used: Fresh mature leaves & flowers:

Medicines/Active constituents: Alkaloids, vasicine & essential oil.

Medicinal Uses: The "drug use" from the fresh or dried leaves of the plant. Leaves contain an alkaloid vasicine, and an essential oil. The chief use of vasaka is as an expectorant; it is given in the form of juice, syrup or decoction, It softens the thick sputum, facilitates its coming out and thus bring about quick relief in bronchitis. The expectorant activity is due to stimulation of bronchial glands. Larger doses can, however, cause irritation and vomiting. Recent experiments have confirmed the usefulness of vasaka.

- The leaves of this plant are also utilized as green manure and for yielding a yellow dye.
- Due to the presence of certain alkaloids, the leaves are not easily attacked by fungi and insects, and are, therefore, used in packing or storing fruits.
- The leaves emit an unpleasant smell and are spared from browsing; the plan is, therefore, suitable for planting in soil reclamation programmes, seeds are also useful..

2) *Aloe vera* (Korphad):



Kingdom: Plantae
Order: Asparagales
Family: Asphodelaceae
Genus: Aloe
Species: A. vera

Description: A small herb, with smooth pale green fleshy leaves, convex below with horny prickles at the margins, water requirements is less, No pest/ diseases. The natural range of *A. vera* is unclear, as the species has been widely cultivated throughout the world. It has been suggested that naturalised stands of the species occur through North Africa in Algeria, Morocco, and Tunisia, along with the Canary and Madeira Islands. The species was introduced to China, India, Pakistan and various parts of southern Europe in the 17th century. The species is widely naturalised elsewhere, occurring in temperate and tropical regions of Australia, Barbados, Belize, Nigeria, Paraguay and the USA. It has been suggested that, like many Aloes, the species is originally from Southern Africa and that populations that occur elsewhere are the result of human cultivation.

Parts Used: Mature leaves & leaves pulp

Medicinal constituents: Glycoside, Aloin, Barbaloin

Medicinal Uses: *Aloe vera* has a long association with herbal medicine, although it is not known when its medical applications were first discovered. *Aloe vera* is alleged to be effective in treatment of wounds.^[5] Evidence on the effects of *A. vera* sap on wound healing, however, is limited and contradictory. Some studies, for example, show that *A. vera* promotes the rates of healing, while in contrast, other studies show that wounds to which *Aloe vera* gel was applied were significantly slower to heal. A more recent review (2007) concludes that the cumulative evidence supports the use of *Aloe vera* for the healing of first to second degree burns. In addition to topical use in wound or burn healing, internal intake of *A. vera* has been linked with improved blood glucose levels in diabetics, and with lower blood lipids in hyperlipidaemic patients. In other diseases, preliminary studies have suggested oral *A. vera* gel may reduce symptoms and inflammation in patients with ulcerative colitis. Compounds extracted from *A. vera* have been used as an immunostimulant that aids in fighting cancers in cats and dogs, however, this treatment has not been scientifically tested in humans. The injection of *A. vera* extracts to treat cancer has resulted in the deaths of several patients. Topical application of *Aloe vera* may be effective for genital herpes and psoriasis. However, it is not effective for the prevention of radiation-induced injuries, nor does it offer protection from sunburn or suntan. In a double-blind clinical trial the group using an *Aloe vera* containing dentifrice and the group using a fluoridated dentifrice both demonstrated a statistically significant reduction of gingivitis and plaque. *A. vera* extracts have antibacterial and antifungal activities. *A. vera* extracts have been shown to inhibit the growth of fungi that cause tinea, however, evidence for control beneath human skin remains to be established. For bacteria, inner-leaf gel from *A. vera* was shown to inhibit growth of Streptococcus and Shigella species *in vitro*. In contrast, *A. vera* extracts failed to show antibiotic properties against Xanthomonas species.

3) *Ocimum sanctum* (Holy basil, Tulsi):



Kingdom: Plantae
(unranked): Angiosperms
(unranked): Eudicots
(unranked): Asterids
Order: Lamiales
Family: Lamiaceae
Genus: Ocimum
Species: *O. tenuiflorum*

Description: *Ocimum tenuiflorum* is an aromatic plant in the family Lamiaceae. It is an erect, much branched subshrub 30-60 cm tall with hairy stems and simple opposite green leaves that are strongly scented. Leaves have petioles, and are ovate, up to 5 cm long, usually slightly toothed. Flowers are purplish in elongate racemes in close whorls. There are two main morphotypes cultivated in India—green-leaved (Sri or Lakshmi tulsi) and purple-leaved (Krishna tulsi). Tulsi is native throughout the Old World tropics and widespread as a cultivated plant and an escaped weed. It is cultivated for religious and medicinal purposes, and for its essential oil. It is widely known across South Asia as a medicinal plant and

an herbal tea, commonly used in Ayurveda, and has an important role within the Vaishnavite tradition of Hinduism, in which devotees perform worship involving Tulsi plants or leaves.

Parts Used: Mostly mature leaves:

Medicinal Constituents: Volatile oil rich in Eugenol & Cryophyllene, methyl chavicol, cinnamate.

Medicinal Uses: Tulsi has been used for thousands of years in Ayurveda for its diverse healing properties. It is mentioned by Charaka in the Charaka Samhita, an ancient Ayurvedic text. Tulsi is considered to be an adaptogen, balancing different processes in the body, and helpful for adapting to stress. Marked by its strong aroma and astringent taste, it is regarded in Ayurveda as a kind of "elixir of life" and believed to promote longevity. Tulsi's extracts are used in ayurvedic remedies for common colds, headaches, stomach disorders, inflammation, heart disease, various forms of poisoning, and malaria. Traditionally, tulsi is taken in many forms: as herbal tea, dried powder, fresh leaf, or mixed with ghee. Essential oil extracted from Karpoora Tulsi is mostly used for medicinal purposes and in herbal cosmetics, and is widely used in skin preparations due to its anti-bacterial activity. For centuries, the dried leaves of Tulsi have been mixed with stored grains to repel insects. Recent studies suggest that Tulsi may be a COX-2 inhibitor, like many modern painkillers, due to its high concentration of eugenol (1-hydroxy-2-methoxy-4-allylbenzene). One study showed Tulsi to be an effective treatment for diabetes by reducing blood glucose levels. The same study showed significant reduction in total cholesterol levels with Tulsi. Another study showed that Tulsi's beneficial effect on blood glucose levels is due to its antioxidant properties. Tulsi also shows some promise for protection from radiation poisoning and cataracts.



4) Asparagus racemosus (Shatavari):

Kingdom: Plantae

(unranked): Angiosperms

(unranked): Monocots

Order: Asparagales

Family: Asparagaceae

Genus: Asparagus

Species: A. racemosus

Distribution:

Asparagus racemosus (Satavar, Shatavari, or Shatamull) is a creeper, 1 to 2 meters tall, that is common throughout India and the Himalayas. It prefers to take root in gravelly, rocky soils, high up in piedmont plains (1,300 - 1,400 meters elev.). Satavar has odd little pine-needle-like leaves that are uniform, and shiny green. In July it has minute, white flowers on short, spiky stems, and in September it fruits blackish-purple, globular berries.^[3] It has an adventitious root system with tuberous roots that measure about 1 meter in length, tapering at both ends, and may, for each plant number roughly a hundred.^[3]

Parts Used: Underground tuberous roots & cladodes.

Medicine Constituents: Steroidal saponins & Shatavarins I, II, III & IV roots Diosgenin in leaves, Quercetin, rutin & Hyperoside in flowers & fruits.

Medicinal Uses:

The roots are used in Ayurvedic medicine, following a regimen of processing and drying, with the name of Shatavari. It is used as an anodyne, aphrodisiac and galactagogue.

Shatavari is considered to be the main Ayurvedic rejuvenating female tonic for overall health and vitality. The reputed adaptogenic effects of Shatavari may be attributed to its concentrations of saponins, known as Shatavarins. It is used as regular tonic to enhance the lifespan for 100 years hence called shatavari. Root powder used to treat diarrhea, dysentery & is diuretic in function. Decoction of powder is used to cure chicken pox, small pox, measles etc. It is used for promoting appetite & also to control epilepsy, night blindness, tuberculosis & leprosy. The boiled cladodes are applied externally for suppression of boils & tumours.

5) *Azadirachta indica* (Neem):



Kingdom:	<u>Plantae</u>
Division:	<u>Magnoliophyta</u>
Order:	<u>Sapindales</u>
Family:	<u>Meliaceae</u>
Genus:	<u><i>Azadirachta</i></u>
Species:	<i>A. indica</i>

Description: A large overgreen tree with pinnately compound leaves having 9 – 12 leaflets flowers white, fragrant, fruit ovoid.

Parts Used: Leaves, Bark of trees & small stem pieces, seed oil.

Medicinal Constituents: Essential oil & bitter constituents – nimbin, nimbnin & nimbidin

Medicinal Uses:

In India, the tree is variously known as "Divine Tree," "Heal All," "Nature's Drugstore," "Village Pharmacy" and "Panacea for all diseases." Products made from neem have proven medicinal properties, being anthelmintic, antifungal, antidiabetic, antibacterial, antiviral, anti-fertility, and sedative. It is considered a major component in Ayurvedic medicine and is particularly prescribed for skin disease.

- All parts of the tree (seeds, leaves, flowers and bark) are used for preparing many different medical preparations.
- Neem oil is used for preparing cosmetics (soap, shampoo, balms and creams), and is useful for skin care such as acne treatment, and keeping skin elasticity. Neem oil has been found to be an effective mosquito repellent.
- Neem derivatives neutralise nearly 500 pests worldwide, including insects, mites, ticks, and nematodes, by affecting their behaviour and physiology. Neem does not normally kill pests right away, rather it repels them and affects their growth. As neem products are cheap and non-toxic to higher animals and most beneficial insects, it is well-suited for pest control in rural areas.
- Besides its use in traditional Indian medicine the neem tree is of great importance for its anti-desertification properties and possibly as a good carbon dioxide sink.
- Practitioners of traditional Indian medicine recommend that patients suffering from chicken pox sleep on neem leaves.
- Neem gum is used as a bulking agent and for the preparation of special purpose food (those for diabetics).
- Aqueous extracts of neem leaves have demonstrated significant antidiabetic potential.
- Traditionally, teeth cleaning was conducted by the chewing of slender neem branches. Neem twigs are still collected and sold in markets for this use, and one often sees youngsters in the streets chewing on neem twigs.
- A decoction prepared from neem roots is ingested to relieve fever in traditional Indian medicine.
- Neem leaf paste is applied to the skin to treat acne.
- Neem blossoms are used in Andhra Pradesh to prepare "Ugadi pacchadi."
- Extract of neem leaves is thought to be helpful as malaria prophylaxis despite the fact that no comprehensive clinical studies are yet available.
- Neem is a source of environment-friendly biopesticides. Uses in pest and disease control.