

The Role of Traditional Medicinal Plants in Modern Healthcare

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Abstract: *Since the Vedic period, medicinal herbs have been used. They have been used to treat and prevent a wide range of illnesses and epidemics for thousands of years. Some medical plants are also used as tasty condiments, food preservers, flavoring agents, and dyes. Nearly every part of the plant has therapeutic qualities of its own. Medicinal plants include a variety of secondary metabolites that are utilized to make medications and have a significant impact on a number of illnesses. Tribal people across the globe utilize many of the plants, which are also said to have several additional uses, such as anti-oxidant, anti-inflammatory, anti-insecticidal, anti-parasitic, antibiotic, and anti-hemolytic qualities. This review article reports on the traditional therapeutic usage of 21 plant species from various families.*

Keywords: Ethnobotany, Phytotherapy, Herbalism, Ayurveda, Phytochemicals, Antimicrobial, Antioxidants

I. INTRODUCTION

Evidence of the use of plant products for the treatment of illnesses and the rejuvenation of bodily systems dates back more than 5,000 years, to the Indian, Egyptian, Chinese, Greek, and Roman civilizations [1]. All facets of Indian society make extensive use of plants with therapeutic potential, both as processed pharmaceutical products and as traditional remedies in various indigenous medical systems such as Siddha, Ayurveda, and Unani [2]. Of the approximately 4.5 million plant species found in India, only between 250,000 and 500,000 have been studied phytochemically for their pharmacological or biological effects [3]. In the pharmaceutical industry, bioactive components or plant extracts may be utilized to treat a variety of illnesses and as a new formulation for the development of new medications [4]. Herbal remedies like ashwagandha and brahmi help rebuild body cells, increase nutrition, improve immunity, and raise energy levels [5]. In rural areas, medicinal and aromatic plants may significantly improve rural residents' subsistence livelihoods, particularly for women, in an ecologically responsible way while preserving the biodiversity of these natural products [6]. The World Health Organization (WHO) reports that up to 80% of the world's People's fundamental healthcare requirements are met by traditional medicine. The creation of homegrown medications and the use of medicinal plants to treat a range of illnesses have significant financial advantages. The majority of people, particularly those living in rural areas, are still compelled to use traditional remedies for common everyday illnesses because of a lack of modern health facilities, poverty, ignorance, and limited communication options [7]. Medicinal plants are very beneficial to both individual and community health. Certain chemical active ingredients that cause distinct physiological activity on the human body are what give plants their therapeutic worth [8]. In addition to being a potential alternative supply of mosquito control agents, plants are thought to be a rich source of bioactive compounds [9].

Plant secondary metabolites, often known as phytochemicals, exhibit notable pharmacological properties, including anti-oxidant, anti-allergic, antibacterial, hypoglycemic, and anti-carcinogenic properties. These secondary metabolites shield the cells from the harm that free radicals, which are unstable chemicals, may do [10]. The use of natural antibacterial agents, particularly those derived from plants, for food preservation is gaining popularity. Therefore, it is necessary to look for herbs that have therapeutic value [11].

However, older men and women between the ages of 41 and 70 possess the knowledge and understanding of herbal medicines. The fading away may now occur gradually as a result of the younger generation's decreased usage of medicinal herbs [12].

Medicinal values

Abrus precatorius Linn.- Under favorable conditions, *Abrus precatorius* plants have developed. Their aggressive growth, hard-shelled seeds, and suckering ability make it very difficult to eradicate an infestation and very difficult to prevent re-infestation. Additionally, their deep roots are very difficult to remove. Herbicides like glyphosate work well, but they must be used carefully to avoid doing more damage than good. [13]

Aegle marmelos (Linn.) Correa.- Furocoumarins such as xanthotoxol and the methyl ester of alloimperatorin, flavonoids like rutin and marmesin, many essential oils, and alkaloids including α -fargarine (alocryptopine), O-isopentenylhalfordinol, and O-methylhalfordinol are all found in the bael tree [14]. With its many therapeutic benefits, bael fruit is one of the environment's gifts to humanity. Every aspect of this tree, including the stem, bark, roots, leaves, and fruit at every stage of development, has therapeutic potential and has long been used as medicine. The blessed tree known as the Tree of the Bael has several medicinal qualities, some of which are currently being investigated for practical uses. There aren't many more significant activities outside the ones mentioned above. *Aegle marmelos* leaves may be used to treat defenses, conjunctivitis, jaundice, and leucorrhoea. Fruits provide nourishment and energy. In addition to being an effective treatment for snake bites, it has astringent and carminative properties [15].

Allium sativum Linn.- Alliin, ajoene, diallyl polysulfides, vinylthiols, and S-allylcysteine are sulfur-containing chemicals that may be obtained from fresh or crushed garlic. Other components that are not sulfur-containing include enzymes, saponins, flavonoids, and products of the Maillard process.

Aloe barbadensis Mill.- Aloe vera is applied to the tissues of the face, where it is advertised as a moisturizer and anti-irritant to lessen nasal chafing. Cosmetic manufacturers often include aloe vera sap or other derivatives into their cosmetics, tissues, moisturizers, soaps, sunscreens, incense, shaving cream, and shampoos. [16]

Butea monosperma Linn.- Timber, resin, fodder, medicine, and dye are all products of *Butea monosperma*. The soft, dingy white wood is utilized for water scoops and well curbs because it is waterproof. In several Hindu ceremonies, spoons or ladles fashioned of this tree are used to pour ghee into the fire. It is a good source of charcoal.

Calotropis procera R. Br.- "Cardiac aglycones" are steroidal heart poisons that are among the complex mixture of compounds found in milky sap. These compounds are related to those in foxgloves (*Digitalis purpurea*) and are members of the same chemical family. The steroidal component consists of an α,β -unsaturated- γ -lactone in the C17 position, a C/D-cis ring junction, a second group bonded to the C14 carbon, and a hydroxyl group in the C3 β position.

Carica papaya Linn.- Ripe papaya fruit, peel and seeds removed, is often eaten raw. You may consume the unripe green fruit cooked, generally in salads, stews, and curries. Both raw and cooked green papaya are utilized in Southeast Asian cuisine [17]. A variety of phytochemicals, including as polyphenols, carotenoids, benzyl isothiocyanates, and benzyl glucosinates, are found in papaya peel, pulp, and seeds; the amounts of these compounds rise with ripening. [19] Prasinin, a cyanogenic chemical, is also found in papaya seeds.

Cuscuta reflexa Roxb.- There are many known alpha-glucosidase inhibiting chemicals in *Cuscuta reflexa*. The stems of the *Cuscuta reflexa* plant have been stripped of a coumarin, tetrahydrofuran derivatives, and a novel flavanone-reflexin. According to reports, methanol extracts of the stem showed antibacterial and anti-steroidogenic properties. The herb *Cuscuta reflexa* is used in Ayurvedic medicine to treat heart and eye conditions [20]. The decocted stems help with bilious affliction, liver problems, constipation, and gas.

Hibiscus rosa-sinensis Linn.- An extract from *Hibiscus rosa-sinensis* flowers has been shown to work as an anti-solar agent by absorbing UV light, suggesting that it may have some use in cosmetic skin care. [21]

Mentha spicata Linn.- The fragrant oil of *Mentha spicata*, sometimes known as oil of spearmint, is employed. R(-)-carvone, the primary component in spearmint oil, is what gives spearmint its unique scent. Significant levels of limonene, dihydrocarvone, and 1,8-cineol are also present in spearmint oil. [22] In contrast to peppermint oil, spearmint oil has very little menthol and menthone. It is sometimes added to shampoos and soaps and used as a flavoring for tooth paste and candies. Spearmint essential oil works well as an insecticide against adult moths when used as a fumigant. [23]

Nerium oleander Linn.- Nerium oleander has long been considered a dangerous plant since certain of its components may be hazardous when ingested in high quantities, particularly by animals. These substances include cardiac glycosides, such as oleandrin and oleandrogenin, which have a limited therapeutic index and may be harmful if consumed.

Acacia mormelos Linn.- A 100 g serving of lemons contains 64% of the Daily Value of vitamin C, making them an excellent source of the vitamin. However, the content of other vital nutrients is negligible. Among the many phytochemicals found in lemons are tannins, terpenes, and polyphenols. [24] They contain high citric acid contents (about 47 g/l in juice), much as other citrus fruits. [25]

Mimosa pudica Linn.- Mimosine, a poisonous alkaloid found in Mimosa pudica, has been shown to have apoptotic and antiproliferative properties. The mucilage produced by Mimosa pudica seeds is composed of D-glucuronic acid and D-xylose. [26]

Syzygium cumini (Linn.) Skeels.- Chinese and Unani medicine for digestive disorders. The fruit is also used to make wine and vinegar. Both vitamin C and vitamin A are abundant in it [27].

Evolvulus alsinoides Linn.- Because of its alleged nootropic and psychoactive qualities, this plant is employed in East Asian traditional medicine. [28] Nevertheless, there is no medical evidence to support such statements. Chemicals such as scopoletin, umbelliferone, scopolin, and 2-methyl-1,2,3, 4-butanetretol have been identified from E. alsinoides. [29]

Dalbergia sissoo Roxb. Ex. DC.- The freshwater snail Biomphalaria pfeifferi eggs were susceptible to molluscicide effects from an ethanolic preparation of Dalbergia sissoo fruits. [30]

Curcuma longa Linn.- Turmeric has been used locally to clean wounds or heal skin sores, as well as internally to treat a range of conditions including dyspepsia, throat infections, common colds, or liver problems in Ayurvedic and Siddha therapies. [31]

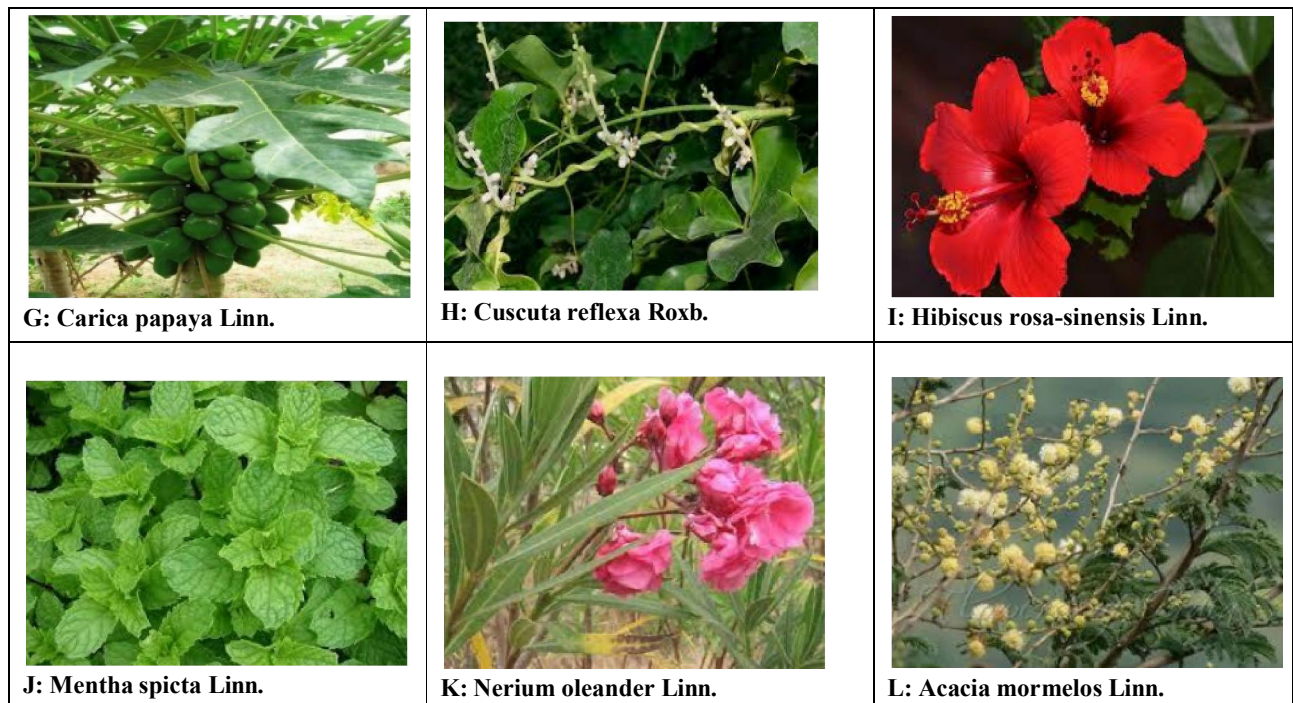
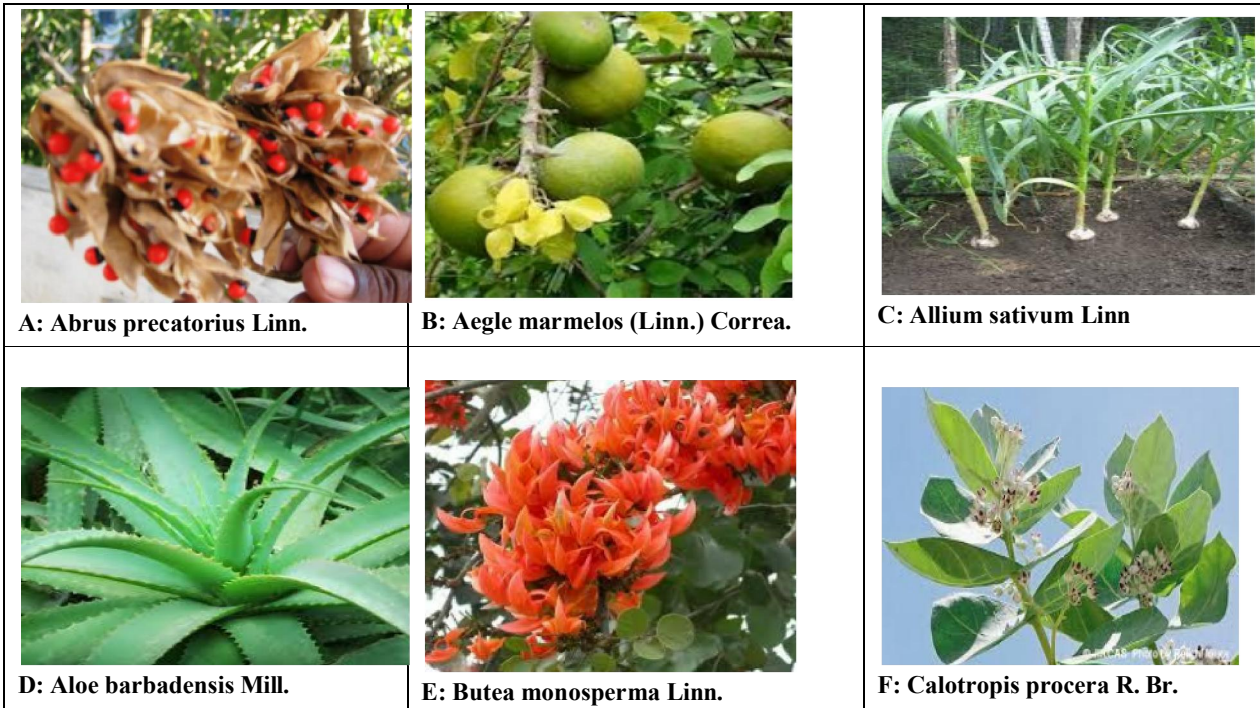
Tagetes erecta Linn.- When there is a shortage of well-pigmented yellow maize in the feed, the dried flower petals are crushed into a powder and added to chicken feed to guarantee that the egg yolks and skin of the broilers are colored properly. [32]

Although it is still used today, it is now often in the form of an extract, which may provide benefits including improved stability, greater usage, and fewer transportation and storage costs. Additionally, it is utilized to improve crustacean colors [33].

Withania somnifera Linn. Dunal- In traditional Indian medicine, the plant's long, brown, tuberous roots have been used for millennia. [34–35] The dried leaves are pounded into a powder and used as a treatment for burns and wounds in Yemen, where it is referred to as ubab [36]. [37] The leaves of the Withania somnifera plant are used to reduce edema and treat joint discomfort [38].

Bacopa monnieri (L.)- In traditional Ayurvedic medicine, bacopa has been used to treat epilepsy and asthma. [39] Ayurveda also uses it to treat inflammations, leprosy, anemia, ulcers, tumors, ascites, enlarged spleen, and gastroenteritis. [40] Numerous health issues may be effectively treated with the herb. The herb may be used to alleviate dyspepsia, increase memory, neutralize allergic responses, and lessen tension and anxiety [41].

Ficus racemosa Wau. Cat.- One of the plants included in the ancient Ayurvedic texts is Ficus racemosa Linn. (FR) (Family Moraceae). In traditional medicine, several components of F. racemosa—fruits, bark, and roots—are used to cure a variety of illnesses, including diabetes mellitus. The hepatoprotective, hypoglycemic, and anti-inflammatory properties of F. racemosa have been shown in experimental experiments [42].



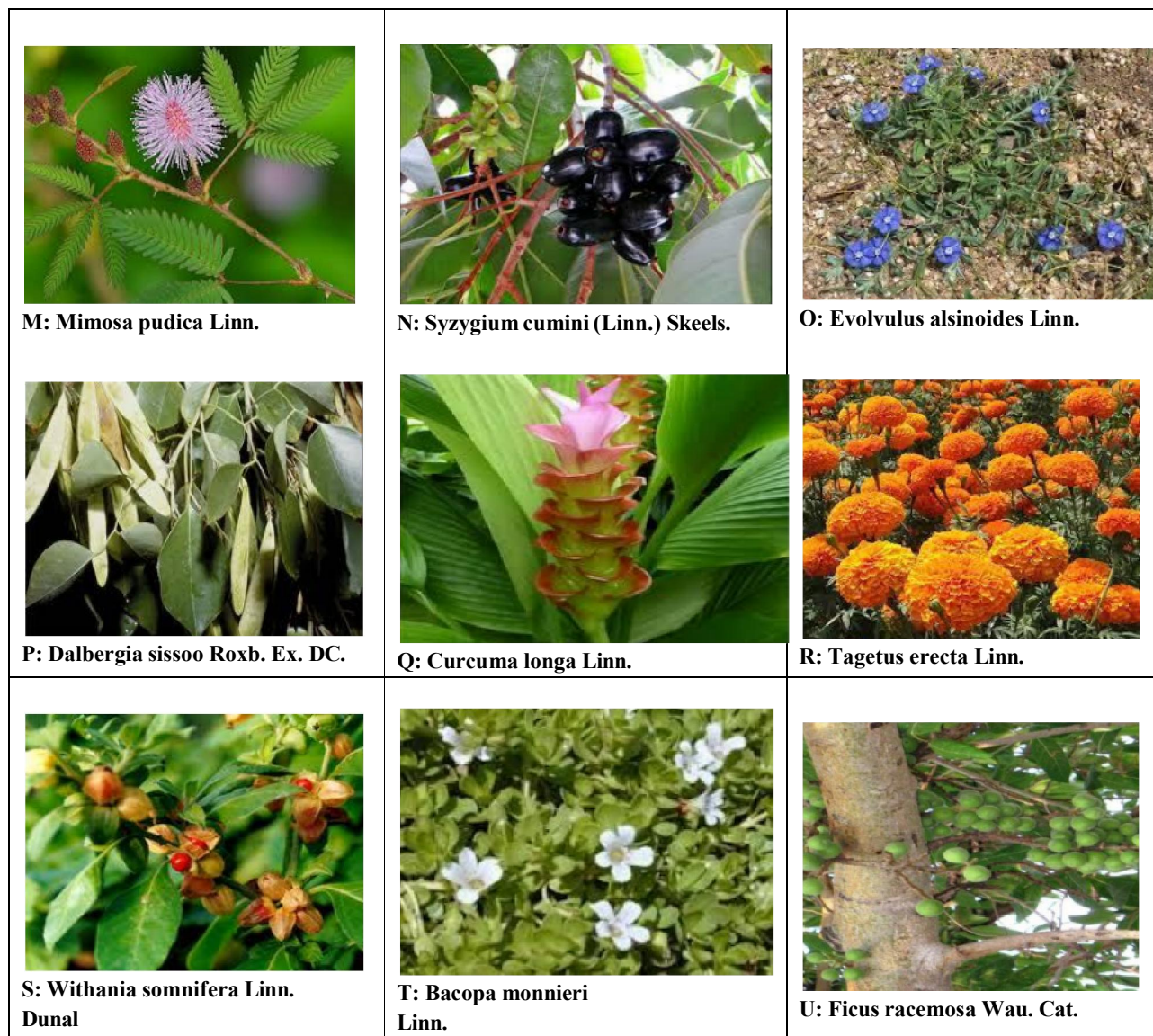


Fig. 1: Photographs of the traditionally used some Medicinal plants

Table 1: Traditional medicinal plants used in the treatment of human and animals ailments

S. No.	Botanical Name	Common Name	Family	Used Part	Habit	Plant Properties
1.	<i>Abrus precatorius</i> Linn.	Ghunchu	Fabaceae	Leaves	Shrub	Leaf juice is mixed with coconut oil and applied over the painful swellings of the body
2.	<i>Aegle marmelos</i> (Linn.) Correa.	Bel	Rutaceae	Fruit	Tree	Half of a ripe fruit is eaten twice a day for 3-4 days to cure constipation

3.	Allium sativum Linn.	Lahshun	Amaryllidaceae	Bulb	Herb	3-4 cloves are taken raw twice a day for a week to get relief from stomach pain and gastric
4.	Aloe barbadensis Mill.	Gwarpatha	Liliaceae	Leaf pulp	Herb	About 2 teaspoons of juice is taken thrice a day for 3-4 days to cure fever
5.	Butea monosperma Linn.	Palas	Fabaceae	Root	Tree	Root are used in tuberculosis
6.	Calotropis procera R. Br.	Madar	Asclepiadaceae	Latex of whole plant	Shrub	The latex is useful in the treatment of the ringworm and skin disease
7.	Carica papaya Linn.	Papita	Cariaceae	Latex of fruit	Tree	Latex fruit is used in ringworm and eczema
8.	Cuscuta reflexa Roxb.	Amarbel	Convolvulaceae	Whole plant	Parasitic Herb	Juice of the plant mixed with juice of Saccharum officinarum is given in doses of about 3-4 teaspoons twice a day is given for 10-12 days to treat jaundice
9.	Hibiscus rosa- sinensis Linn.	Gudhal	Malvaceae	Root	Shrub	Juice of the root about 3 teaspoons is given 3 times a day for 3-4 days in case of cough and cold
10.	Mentha spicata Linn.	Pudina	Lamiaceae	Leaf	Herb	2-3 teaspoons of leaf juice is given thrice a day for 3-4 days to treat bloody dysentery
11.	Nerium oleander Linn.	Kaner	Apocynaceae	Latex of plant	Tree	Latex applied on muscles pain of limbs
12.	Acacia mormelos Linn.	Babool	mimosaceae	Flower	Tree	Flower powder mixed with water is given orally to animal twice a day to cure jaundice
13.	Mimosa pudica Linn.	Lajwanti	Mimosaceae	Roots and leaves	Hurb	Roots and leaves are crushed and filtered; one teaspoon of filtrate is taken with water twice a day to cure loose motion

14.	<i>Syzygium cumini</i> (Linn.) Skeels.	Jamun	Myrtaceae	Bark	Tree	Crush its bark with the bark of bamura (<i>Acacia catechu</i>) in equal amount and filter it. Take 5 ml. of filtrate with 5 ml. water twice a day in gripping and indigestion
15.	<i>Evolvulus alsinoides</i> Linn.	Shankhahuli	Convolvulaceae	Leaves	Herb	20-25 leaves are crushed and mixed in 200 ml. whey and taken orally twice a day for 2 days in gripping
16.	<i>Dalbergia sissoo</i> Roxb. Ex. DC.	Shisham	Fabaceae	Leaves	Tree	Leaf paste mixed with water is given to animal twice a day to cure blisters and leg sore
17.	<i>Curcuma longa</i> Linn	Haldi	Zingiberaceae	Rhizome	Herb	Rhizome powder with rock salt and pure ghee is to cure the swelling of nipple for animals
18.	<i>Tagetes erecta</i> Linn.	Genda	Asteraceae	Flower	Herb	Powder mixed with water is given to animals to cure hydrophobia
19.	<i>Withania somnifera</i> Linn. Dunal	Ashwagandha	Solanaceae	Root	Herb	Given to animals to cure retard placenta
20.	<i>Bacopa monnieri</i> Linn.	Brahmi	Plantaginaceae	Leaves	Herb	Boosting memory
21.	<i>Ficus racemosa</i> Wau. Cat.	Gular	Moraceae	Root	Tree	The sap of root is given in diabetes

II. CONCLUSION

We may infer from the aforementioned studies that plants have very varied lives. All living things across the universe benefit from every aspect of the plant. These 21 medicinal plants were investigated for the treatment of several human and animal illnesses in the current small review study. These illnesses include constipation, stomach ache, piles, diarrhea, jaundice, diabetes, fever, asthma, menstruation problems, snake bites, skin conditions, and more. Both cultivated and wild plant species are included in this group. Herbs made up the majority of the medicinal plants, followed by shrubs, trees, and climbers. Additionally, parts of the plants like as leaves, roots, flowers, bark, fruits, rhizomes, etc. were employed for medicinal purposes.

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