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## SIGNIFYING USES OF PLANTS IN MEDICINES: A SPECIAL FOCUS ON HAIR TREATMENT

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### ABSTRACT

*This research paper delves into the significant role of plants in traditional and modern medicine, with a special emphasis on their applications in hair treatment. Natural remedies have been employed by various cultures worldwide for centuries to address hair-related concerns. The objective of this study is to explore the diverse plant-based remedies and their therapeutic properties in promoting healthy hair growth, preventing hair loss, and addressing common scalp disorders. The literature review offers an extensive examination of historical practices and indigenous knowledge surrounding the use of plants in hair care. Traditional remedies, such as Ayurveda, Traditional Chinese Medicine (TCM), and Native American herbal medicine, have been invaluable sources of knowledge in this area.*

**Keywords:** - Plant, Medicine, Hair, Treatment, Herbal.

### I. INTRODUCTION

#### MEDICINAL PLANTS

Different sorts of plants employed in herbalism fall under the umbrella term "medicinal plant" ("herbology" or "herbal medicine"). It's the practice and study of using plants as medicine.

The Latin word "herb" and the ancient French word "herbs" are the roots of the English term "herb." Herbs are now defined as any portion of the plant that is not woody, such as a seed or a fruit or a stem. Until recently, the word "herb" was solely used to describe non-woody plants, such as bushes and trees. Certain of these therapeutic plants are also utilized as food, flavonoid and medicine and in some spiritual activities. "

It has been known since the ancient era that plants might be utilized for medical reasons. Writings from ancient Unani, Egyptian, and Chinese scrolls mention the usage of plants. Over 4000 years ago, plants were used as medicine by the Unani Hakims, Indian Vaid, and European and Mediterranean civilizations. Traditional medicinal systems such as Unani, Ayurveda, and Chinese Medicine, all of which included herbal remedies, were established by indigenous societies such as Rome, Egypt, Iran, Africa, and the Americas.

Traditional medicine is still practiced for a variety of reasons. As the world's population grows, drug supply shortages, high treatment costs, the side effects of many synthetic drugs, and the emergence of resistance to currently used antibiotics for infectious diseases, there is an increased focus on the use of plant materials as a source of medicines for a wide range of human ailments.

India has long been regarded as a treasure trove of medicinal herbs by ancient civilizations. There are a huge variety of medicinal and aromatic plants in India's forests, which are mostly harvested for use in the production of medications and perfumes. AYUSH systems in INDIA codify almost 8,000 herbal medicines. Indigenous medical systems include Ayurveda, Unani, Siddha, and Folk (tribe) medicine. In India, Ayurveda and Unani Medicine are the most established and commonly practised systems of these systems. –

An estimate by WHO (World Health Organization) suggests that 80 percent of the world's population relies on herbal medicines in some capacity to meet their basic health care requirements. Around 21,000 plant species, according to the WHO, have the potential to be therapeutic plants.

Most people in the globe rely mostly on plants for their health care, according to the most recent statistics available. More than a third of all plant species have been utilised for medical reasons at some point in their history. Plant medications are expected to account for up to 25% of total drugs in established nations like the United States, while they account for up to 80% in rapidly emerging countries like India and China. As a result, nations like India place a considerably higher value on medicinal plants economically than the rest of the globe. Two-thirds of the plants used in modern medicine come from these nations, and the rural population's health care system is mostly reliant on traditional medicinal systems.

## **II. HISTORY**

### **Prehistoric times**

Plants, many of which are currently employed in culinary preparations, have been utilized medicinally for a long time, but with mixed results. Spices have long been used to combat germs that cause food to expire, particularly in hot regions and with meat dishes that are more prone to spoiling. Most plant medications originate from angiosperms (flowering plants). Weeds like nettle, dandelion, and chickweed are often found near human populations. Herbs have long been

used to treat illnesses in animals other than humans, including non-human primates, monarch butterflies, and sheep. Evidence of Paleolithic people's use of herbal medicine includes plant samples from ancient burial sites. Pollen from eight plant species, seven of which are today utilized as herbal treatments, was found at the 60,000-year-old Neanderthal burial site "Shanidar IV" in northern Iraq. A fungus was also discovered among the belongings of tzi the Iceman, whose corpse had been frozen in the Alps of the tztal for for 5,000 years. Whipworm was presumably treated with the mushroom.

## **Ancient times**

More than a thousand plant remedies are described in the ancient Egyptian Ebers Papyrus (c. 1550 BC). Myrrh, opium, and hundreds of other medicinal herbs were documented on Sumerian clay tablets dating back to roughly 3000 BC. There are nearly 800 botanical remedies in the Egyptian Ebers Papyrus, including aloe, castor bean and juniper.

Turmeric, which includes the active ingredient curcumin, has been utilised in Ayurvedic treatment from ancient times, as mentioned in the Atharva Veda, the Rig Veda, and the SushrutaSamhita. The Shennong Ben Cao Jing, a Chinese pharmacopoeia, lists botanical treatments such chaulmoogra for leprosy, ephedra, and hemp. In the YaoxingLun of the Tang Dynasty, this was further developed. First comprehensive botany treatise was written in the 4th century BC by Aristotle's student Theophrastus in *Historiaplantarum*. Dioscorides' *De material medic*, published approximately 60 AD, contains more than 1000 recipes for medications derived from more than 600 medicinal plants. Herbalists looked to this book for almost a millennium until the sixteenth century, when it was still considered the definitive work on the subject.

## **Middle Ages**

In a 1632 edition of Avicenna's 1025 *The Canon of Medicine*, a physician sits in a garden with a female patient as servants are busy preparing the drugs. Benedictine monks in Europe conserved medical knowledge in the early Middle Ages by translating and transcribing ancient books and cultivating herb gardens. She published a medical treatise titled *Causal and Curative* ("Causae and Curative"), which focuses on medicine. Scholars of the Islamic Golden Age added their own commentary to ancient Greek literature like Dioscorides. Baghdad and Al-Andalus were hotbeds of herbal medicine in Islamic times. For example, Ibn al-Baitar (1197–1248) chronicled hundreds of medical herbs, including *Aconitum* and *nux vomica*, in his *Corpus of Simples* while Abulcasis (936–1013) published *The Book of Simples*. Several plants were mentioned in Avicenna's *The Canon of Medicine*, which was published in 1025. Additional pharmacopoeias were compiled by Abu-RayhanBiruni, IbnZuhr, Peter of Spain, and John of St. Amand.

## Early Modern

An early illustrated book of medicinal plants, *The Grete Herball*, 1526. The 1526 *Grete Herball* was the first illustrated herbal to be published in Europe during the Early Modern era. Both John Gerard and Nicholas Culpeper based their works on Rembert Dodoens' *The Herball or General History of Plants*, published in 1597. Early Modern exploration and the Columbian Exchange resulted in the introduction of several novel plant remedies to Europe in the 15th and 16th centuries. Ginger, turmeric, and garlic were among the medicinal plants that arrived in the Americas, while tobacco and coca were brought back from Europe. The *Badianus Manuscript*, written in Mexico in the sixteenth century, documented therape

### III. LIST OF PLANTS WHICH ARE USED AS MEDICINES

#### 1. *Aloe barbadensis* (*Aloe vera*):

*Aloe vera*, commonly known as medical aloe, is a member of the liliaceae family and is found in abundance along the Gujarati, Maharashtrian, and southern Indian beaches. Pregnancy-related conditions, such as constipation, pelvic congestion, intestinal illness, and appendicitis, are all treated with this herbal remedy. It is also used for wound healing, sunburn, and as an emmenagogue and purgative. Ayurvedic medicine in India recommends the use of dried leaves for the treatment of dysmenorrhoea and liver illness. While aloin (Anthraquinone glycoside) may be used as a stimulant for digestion in modest dosages, it also functions as a laxative and enhances colonic secretions in large levels. It is used to control menstruation with the pulp.

#### 2. *Allium sativum* (*Garlic*):

*Allium sativum*, often known as garlic, is a member of the liliaceae family. It is native to Central India, although it is grown across the country as well. One of the most popular uses of this substance is as a drug for treating bacterial and fungal infections as well as for reducing blood pressure and cholesterol levels. It possesses antibacterial effects, according to the British Herbal Pharmacopoeia. For epilepsy and mental illnesses, the Ayurvedic Pharmacopoeia of India recommends the use of the bulb of garlic. Garlic contains alliin, a sulphur-containing amino acid. Both the antibacterial and hypoglycemic properties of allicin are owing to their presence in this supplement.

#### 3. *Azadirachta indica* (*Neem*):

*Melia azadirachta* (*Neem*) is a member of the Meliaceae family. It is native to Burma, but may also be found in India. Gingivitis and periodontitis may be treated with leaf and bark extracts because they are antibacterial, antifungal, insecticidal, antiviral, antipyretic and hypoglycemia. They are also used as an alternative to cortisone for the treatment of gum disease, ulcers, gingivitis and periodontitis. To treat a variety of diseases, including as malaria, fever after

childbirth and measles/smallpox/head scald, the spleen is recommended. An anti-mosquito and contraceptive oil is produced from the plant. Plasmodium falciparum may be killed by the bark's methanol extract. Anti-inflammatory and antiulcer properties were found in the leaf aqueous extract. Glucose- and adrenaline-induced hyperglycemic mice show a reduction in blood glucose levels in the water-soluble extract of leaves. Azadirachtaindica'snimbidin has anti-ulcer effects.

#### **4. Ocimum sanctum (Tulsi):**

Tulsi, also known as *Ocimum sanctum*, is a member of the Lamiaceae family and has been used medicinally since antiquity. Its antihelminthic, expectorant, diuretic, and stimulant properties are all present in the leaves' constituents. Decoctions made from roots are used to treat urination problems and malaria. Anti-stress, anti-convulsant, analgesic, anti-oxidant, anticancer, immunomodulatory, and anti-inflammatory properties have also been discovered.

#### **5. Cinchona ledgeriana (Quina):**

Tropical South America is home to the *Cinchona* tree, often known as the crown bark tree. Grown in the countries of Costa Rica; Bolivia; Peru; Indonesia; Columbia; Sri Lanka; Tanzania Quinine, an antimalarial medication generated from the bark of the plant, is its most well-known attribute. Quinidine, quinine, cinchonidine, and cinch nine are the plant's most valuable alkaloids. Salts of the aforementioned alkaloids, such as quinces acid, quixotic acid, and cinch tannic acid, may be found in plants. Quinine, which accounts for 70% of the alkaloid content in the plant's cultivated bark, is found in the bark. 60% of the root bark is made up of quinine alkaloids.

#### **6. Papaversomniferum (Opium poppy):**

In the western Mediterranean, the poppy is a native species. Punjab, Rajasthan, Uttar Pradesh, and Madhya Pradesh are among the states where it was first cultivated when it was brought to India in the early sixteenth century. Poppies contain 25 different alkaloids, the most significant of which being morphine, theanine, codeine, narcotine and papaverine. Opium is a sedative, narcotic, hypnotic, sudorific, anodyne, analgesic, and antispasmodic. Morphine functions as a painkiller while codeine acts as an anticough agent. As an emollient, spasmolytic, nutritional demulcent, and anti-inflammatory, poppy seeds are widely used and have no addictive characteristics.

#### **7. Acacia catechu (Black Kutch):**

Prickly, caduceus, and able to reach 13 meters in height, the plant is medium-sized, moderately big. Katha, or cutch, is the wood's gummy myrrh. Ecatechin, catechin, epicatechingallate, epigallocatechin, phloroglucin, protocatechuic acid, quarcetin, lupenone, poriferasterolglucosides, procyanidin, and kaemferol are among the plant's phytoconstituents.

#### IV. MEDICINAL PLANTS FOR THE TREATMENT OF HAIR LOSS AND THE SUGGESTED MECHANISMS

As one of the most frequent trichinosis, alopecia has a profound effect on the human spirit and mental well-being. Alopecia has become more common in recent years. There is a link between environmental pollution, stress, hair colouring and perming, drinking, smoking, and other unhealthy lifestyle choices and the development of alopecia.

There is a tendency for hair loss sufferers to be younger in age. Alopecia areata affects 40% of individuals, who all need some kind of therapy. There are still a lot of research being done on the subject because of the increased public desire for hairdressing and beauty. Hair growth enhancement has received increasing interest from both contemporary medicine and traditional medicine. Alopecia may be treated with a variety of methods, including hair transplants, medicine, and cosmetics. Improved hair growth results from medical treatment. Many medications work to prevent hair loss by blocking the hormone that men produce.

By inhibiting male hormones, Finasteride, a synthetic 5--reductase inhibitor, and minoxidil, a vasodilator, are used to treat alopecia. Due to their significant adverse effects, the usage of these two medications is restricted. Finasteride has been linked to male infertility, whereas minoxidil has been linked to rashes, inflammation, and itching. Developing a long-term solution for hair loss necessitates the reduction of unwanted effects. This leads to the discovery of novel chemicals from therapeutic plants, all of which have less negative side effects.

#### V. CONCLUSION

As per the plan, main plants selected for present work were Bacopamonnieri, Emblicaofficinalis&Cyperusrotundus. Emblicaofficinalis or Indian goose berry is one of most important drug in Indian traditional system, especially in Ayurveda. It belongs to family Euphorbiaceae. Dried fruits, fresh fruits, seed, leaves, root bark and flowers of Emblicaofficinalis (Amla) are widely used in medicines. The fruit is rich in quercetin, phyllaemblic compounds, gallic acid, tannins, flavonoids, pectin, and vitamin C and also contains various polyphenolic compounds.

Bacopamonnieri (Brahmi), belonging to family Scrophulariaceae, has been used by Ayurvedic medical practitioners in India for almost 3000 years. It is a succulent creeping marshy herb with numerous branches, small oblong leaves & rooting at nodes with pale blue or pinkish white flower. The chief chemical constituents present in the plant are aspartic acid, glycosides, saponins, stigmasterol,  $\alpha$ -alanine,  $\beta$ -sitosterol etc.

Cyperusrotundus (Nagaramotha), belonging to family Cyperaceae, is an important herb in the Ayurveda. It is a perennial herb with dark green thin stem, the leaves are long and sharp, flower stem has a triangular cross-section, the flower is 2 to 8 inch in length. The chief chemical

constituents present in the plant are isohamnetin, khellin, p-coumaric acid etc, Volatile oil obtained from rhizome contains various terpenoids such as caryophyllene, camphene, copaene, cyperene, cyperenone, cyperol, cyperotundone, cyperolone, D-copadiene, D-epoxyguaiene, isocyperol, isokobusone, kobusone, limonene, linoleic acid, linolenic acid, mustakone etc.

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