



# Medicinal Utility of Plants in Various Ailments

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**Abstract:** Medicinal plants have been used for centuries traditionally in India to treat a wide range of ailments. They have been used for curing a number of diseases in Indian subcontinent as well as throughout the world for ages as part of tradition. Plants such as Tulsi are known for boosting immunity and relieving respiratory disorders, while Neem has powerful antibacterial and antifungal properties useful for skin diseases. Aloe vera is widely used to soothe burns and improve digestion, and Ginger helps in reducing nausea and inflammation. Similarly, Turmeric contains curcumin, which has strong anti-inflammatory and antioxidant effects. These natural remedies are often considered safer and more holistic, though proper knowledge and guidance are important to ensure their effective and safe use. Although modern medical science exist side-by-side with such traditional practice, herbal medicines have maintained popularity for a number of reasons. Herbal medicines or natural products are more widely available commercially, especially in developed countries. Several plants having medicinal properties are used for treating an array of ailments. Such medicinal plants are categorized for prioritization in research based on earlier reports. A few years back COVID-19 pandemic has forced a huge part of population in India seeking alternative treatments along with preventive measures and treatment options such as medicinal plants to fight against various health problems across the world. The present study is aimed to provide recognition to the utility of medicinal plants as a reply to a number of healthcare issues. Most of the studies done worldwide have reported that a number of medicinal plants prove to be helpful in combating various health problems as well as in improving immunity to human body

**Keywords:** Medicinal plants, healthcare, Indian plants, Immunity etc

## I. INTRODUCTION

Humans have continuously searched for medicinal plants since ancient times to cure various ailments and improve overall health. Early civilizations closely observed nature, learning through trial and error which plants could heal wounds, reduce pain, or treat diseases. Human societies have been in close contact with their environments since the beginning of their formation and used the ingredients of the environment to obtain food and medicine. Awareness and application of plants to prepare food and medicine have been realized through trial and error, and gradually human became able to meet his needs from his surroundings. Information about medicinal plants has long been transmitted gradually and from generation to generation, a human knowledge has gradually become complete with the formation of civilizations and the provision of more facilities. Medicinal plants are used as a medical resource in almost all cultures. Ensuring the safety, quality and effectiveness of medicinal plants and herbal drugs very recently became a key issue in industrialized and developing countries. By standardizing and evaluating the health of active plant-derived compounds, herbal drugs can help the emergence of a new era of the healthcare system to treat human diseases in the future. Agnihotri *et al.* (2016).

Systems like Ayurveda and Traditional Chinese Medicine developed extensive knowledge about herbs and their healing properties, passing this wisdom through generations. Explorers and healers traveled across forests and regions in search of new plants, documenting their uses and benefits. In order to maintain the traditional knowledge of medicinal plants, comprehensive approach and collaboration are needed to maintain historical records on medicinal plants and use them before they are destroyed. This study aims to investigate and describe the use of medicinal plants.

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In the beginning, the use of medicinal plants was instinctive. Previously, there was not sufficient information either concerning the reasons for the illnesses or concerning which plant and how it could be utilized as a cure, everything was based on experience. During ages the usage of specific medicinal plants for treatment of certain diseases were discovered. The decreasing efficacy of synthetic drugs along with the increasing contra-indications of their usage has made the usage of natural drugs vital once again. Dervendzi V. (1992).

Even today, scientists continue this search by studying traditional remedies and discovering new medicinal compounds in plants, many of which form the basis of modern medicines. Hence, it can be said that healing with medicinal plants is as old as human civilization. The connection between man and his search for drugs in nature dates from the far past. Awareness of medicinal plants usage is a result of the many years of struggles against illnesses due to which man learned to pursue drugs in barks, seeds, fruit bodies, and other parts of the plants. Contemporary science has acknowledged their active action, and it has included in modern pharmacotherapy a range of drugs of plant origin, known by ancient civilizations and used throughout the millennia. The knowledge of the development of ideas related to the usage of medicinal plants as well as the evolution of awareness has increased the ability of pharmacists and physicians to respond to the challenges that have emerged with the spreading of professional services in facilitation of man's life. Farnsworth, N.R. (1990).

Humanity has deep connection with nature and its enduring quest to find safe and effective cures for various health problems. The oldest written evidence of medicinal plants' usage for preparation of drugs has been found on an approximately 5000 years old clay slab found in Nagpur. It comprised 12 recipes for drug preparation referring to over 250 various plants, some of them alkaloid such as poppy, henbane, and mandrake. Namsa, N.D., Tag, H., Mandal, M., Kalita, P. and Das, A.K. (2009).

Ancient Indian scripts such as Vedas mention treatment with plants, which are abundant. Numerous spices and plants are used even today across India as household medicines. Agnihotri and Bhatnagar (2011).

Modern lifestyles have increasingly become unhealthy due to rapid urbanization, technological dependence, and changing daily habits. Irregular eating patterns, frequent consumption of processed and fast foods, and high stress levels further contribute to health problems such as diabetes, hypertension, and heart disease. By introducing small changes in our daily life can go a long way in keeping us healthy and energetic. Therefore, the importance of Ayurveda holds true in today's life as it is based on the principal of bringing us close to nature and relying on its natural powers to cure us and keep us healthy without any side effects. Kelly K. (2009)

Using natural ingredients and medicinal herbs, Ayurvedic medicines and products today have become a symbol of safety in contrast to synthetic drugs that are considered unsafe and hazardous for overall health. Traditional medicine has remained as the most affordable and easily accessible source of treatment in the primary health care system of resource poor communities. The local people have a long history of traditional plant usage for medicinal purposes. Newman, D.J., Crag, G.M. and Snader, K.M. (2000).

In India, earliest references of use of medicinal plants appear in Rigveda which is said to be written between 1600 - 3500 B.C. Later the properties and therapeutic uses of medicinal plants were studied in detail and recorded empirically by the ancient physicians which are a basic foundation of ancient medical science in India. A medicinal plant is an important element of indigenous medical systems in all over the world. The ethno-botany provides a rich resource for natural drug research and development. "Traditional" use of herbal medicines implies substantial historical use, and this is certainly true for many products that are available as "traditional herbal medicines". In many developing countries, a large proportion of the population relies on traditional practitioners and their armamentarium of medicinal plants in order to meet health care needs. Prakash, P. and Gupta, N. (2005).

The integration of modern medicines with ancient medicinal knowledge offers a powerful approach to healthcare by combining scientific precision with holistic healing. Modern medicine may exist side-by-side with such traditional practice and herbal medicines have maintained their popularity for historical and cultural reasons. Natural products have played an important role throughout the world in treating and preventing human diseases. Natural product medicines have come from various source materials including terrestrial plants, terrestrial microorganisms, marine



organisms, and terrestrial vertebrates and invertebrates and its importance in modern medicine has been discussed in different reviews and reports. Taylor, L. (2000).

The value of natural products in this regard can be accessed from the following factors:

- 1) the rate of introduction of new chemical entities of wide structural diversity, including serving as templates for semi synthetic and total synthetic modification
- 2) the number of diseases treated or prevented by these substances, and
- 3) their frequency of use in the treatment of disease.

In recent years, there has been a noticeable rise in interest in ancient medicinal knowledge as people seek more natural and holistic ways to maintain health. Use of traditional medicine information on plant based research has again received considerable interest. In recent times, there have been increased waves of interest in the field of research in natural products chemistry. This level of interest can be attributed to several factors, including unmet therapeutic needs, the remarkable diversity of both chemical structure and biological activities of naturally occurring secondary metabolites, the utility of novel bioactive natural compounds as biochemical probes, the development of novel and sensitive techniques to detect biologically active natural products, improved techniques to isolate, purify, and structurally characterize these active constituents, and advances in solving the demand for supply of complex natural products.

Indian Ayurveda needs ample amount of time so that one can understand its benefits appropriately while observing the plants and herbs. Each plant or herb has a specific quality and can be used to treat multitude of ailments and diseases. Medicinal plants like aloe, turmeric, tulsi, pepper, elaichi and ginger 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. Vishwakarma, A.P., Vishwe, A., Sahu, P. and Chaurasiya, A. (2013).

Indian traditional medicinal knowledge has gained global recognition, including acknowledgment from the World Health Organization (W.H.O.), for its valuable contribution to healthcare. Proven agro-industrial technologies need to be applied to the cultivation and processing of medicinal plants and the manufacture of herbal medicines. Medicinal plants are resources of new drugs and many of the modern medicines are produced indirectly from plants. More than 250,000 flower plant species are estimated to exist. Studying medicinal plants helps to understand plant toxicity and protect human and animals from natural poisons. Our objective is to consider the past and present value of medicinal plants used in traditional and modern medical practices as bioactive natural compounds. WHO (1999).

This recognition not only validates the effectiveness of these ancient systems but also helps preserve and promote them for future generations. Treatment with herbal medicinal plants also holds a strong ground because these plants are considered to be safe and have no side effects. Since they are in sync with nature, they hold greater advantage over chemically treated products and synthetic medicines. As opposed to other drugs and medicines, Ayurvedic herbs are known to treat the disease from the root and thus aid in keeping you healthy and fit in the long run.

Ayurvedic herbs apart from being used as medicines can also be used for purposes like pest control, natural dyes, and formulation of food items, teas 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.

Systems like Ayurveda Yoga etc. are increasingly being promoted for their holistic approach to health and well-being. WHO has encouraged the integration of traditional medicine into national healthcare systems and has supported research, standardization, and safe usage of such practices. India's rich heritage of medicinal knowledge, based on natural remedies and preventive care, is now being studied and appreciated worldwide. In every period, the healing properties of certain medicinal plants were identified, noted, and conveyed to the successive generations. The benefits of one society were passed on to another, which upgraded the old properties, discovered new ones, till present days.



The continuous and perpetual people's interest in medicinal plants has brought about today's modern and sophisticated fashion of their processing and usage.

### Benefits & Importance of Medicinal Plants

Ancient medicinal knowledge is no longer seen as outdated but as a valuable complement to modern healthcare in today's world. Ayurvedic herbs are time tested for their health and other benefits. The nutritive values that they have 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.

- They have a holistic approach and aid in proper absorption and digestion
- They are not disease specific but act as a preventive medicine that positively effects the overall health and well-being by boosting the immune system
- They are at par with allopathic medicines and are at times known to be effective in treating diseases like cancer and autoimmune diseases
- They are self-contained and nutritive holistic in nature, therefore, are non-toxic and harmless
- It deals with the overall well-being and aims to bring harmony between mind, body and soul
- Several metabolic and chronic conditions can be treated without any side effects using Ayurvedic medicines and treatments

### Ayurvedic Herbs/Spices & Their Medicinal Values

- Ajwain, Amalaki, Aswatha etc., serve as antacids and are recommended for healthy gastric acid flow and proper digestion
- Sandalwood and Cinnamon are great astringents apart from being aromatic. Sandalwood is especially used in arresting the discharge of blood, mucus etc.
- To reduce fever and the production of heat caused by the condition, certain antipyretic herbs such as Chirayta, black pepper and sandal wood are recommended
- Black pepper, cinnamon, aloe, sandalwood, ginseng, red clover, burdock, bayberry, sunflower etc. are commonly used as medicines to heal wounds, sores and boils.
- Herbs like Aloe, Sandalwood, Turmeric, Sheetroj and Khare Khaskhas are commonly used as antiseptic and have very high medicinal values
- Chamomile, Basil, Cardamom, Ginger, Peppermint and Coriander are known to promote blood circulation in the body and keep the heart healthy
- 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

### Modern and Traditional Prescription of Herbal Drugs

The pharmacological treatment of disease by the use of herbs began long ago. Although herbalist waned in the eighteenth and nineteenth centuries, many of the remedies employed by the herbalists provided effective treatment. Some of these became useful prescriptions as physicians began experimenting with therapeutic agents. William Withering was the first in the medical field to scientific ally investigate a folk remedy. His studies (1775-1785) of foxglove as a treatment for dropsy (congestive heart failure) set the standard for pharmaceutical chemistry. In the nineteenth century, scientists began purify the active extracts from medicinal plants. One breakthrough in pharmaceutical chemistry came when Friedrich isolated morphine from the opium poppy (*Papaver somniferum*) in 1806. Continuing this progress, *Justus von Liebig*, a German scientist became a leader in pioneering the field of pharmacology. With increased knowledge of active chemical ingredients, the first purely synthetic drugs based on



natural products were formulated in the middle of the nineteenth century. In plants, these compounds are mostly secondary metabolites under title bioactive compounds such as alkaloids, steroids, tannins, and phenol compounds, flavonoids which are capable of producing definite physiological action on body. The medicinal plants are rich in secondary metabolites and essential oils of therapeutic importance. The important advantages claimed for therapeutic uses of medicinal plants in different ailments are their safety besides being economical, effective and their easy availability. Because of these advantages the medicinal plants have been widely used by the traditional medical practitioners in their day-to-day practice.

Among all plant secondary metabolites which act as antioxidants phenol compounds form a large and varied group. Phenol compounds contribute significantly to the antioxidant potential of several plant species. Various types of medicinal plants are cultivated in many countries by most people especially in rural areas depend on herbal medicines to treat many diseases including inflammation-related ailments such as rheumatism, muscle swelling, insect bites, pains and so on. Wiart C. (2006). Some herbal industries are working on developing a suitable and reliable identification method to confirm the quality of extracts and herbal drugs. Separation and detection of different constituents in plants have been always complicated.

The beginning of 19<sup>th</sup> century was a turning point in the knowledge and use of medicinal plants. Discovery, substantiation, and isolation of alkaloids from Poppy (1806), Carapichea ipecacuanha (1817), Strychnos (1817), Quinine (1820), Pomegranate (1878) and other plants, afterwards the isolation of glycosides, marked the beginning of scientific pharmacy. With the upgrading of the chemical methods, other active substances from medicinal plants were also discovered such as tannins, saponosides, etheric oils, vitamins etc.

However, there was a great danger of elimination of medicinal plants from therapy in the late 19<sup>th</sup> and early 20<sup>th</sup> centuries. A number of authors wrote that drugs obtained from them had many shortcomings due to the destructive action of enzymes, which cause fundamental changes during the process of medicinal plants drying, i.e. medicinal plants' healing action depends on the mode of drying. In 19<sup>th</sup> century, therapeutics, alkaloids, and glycosides isolated in pure form were increasingly supplanting the drugs from which they had been isolated. Nevertheless, it was soon ascertained that although the action of pure alkaloids was faster, the action of alkaloid drugs was full and long-lasting.

In early 20<sup>th</sup> century, stabilization methods for fresh medicinal plants were proposed, especially the ones with labile medicinal components. Besides, much effort was invested in study of the conditions of manufacturing and cultivation of medicinal plants. On account of chemical, physiological, and clinical studies, numerous forgotten plants and drugs obtained thereof were restored to pharmacy: *Aconitum*, *Punica granatum*, *Hyosciamus*, *Stramonium*, *Secale cornutum*, *Filix mas*, *Opium*, *Styrax*, *Colchicum*, *Ricinus* and so forth. The active components of medicinal plants are a product of the natural, most seamless laboratory. The human organism accepts the drug obtained from them best in view of the fact that man is an integral part of nature. Today, almost all pharmacopoeias in the world prescribe plant drugs of real medicinal value. Several countries like the United Kingdom, Russia, Germany etc. have separate herbal pharmacopoeias. Yet, in practice, a much higher number of unofficial drugs are always used. Their application is grounded on the experiences of popular medicine or on the new scientific research and experimental results (conventional medicine).

Many medicinal plants are used independently or in combination with synthetic drugs. For the sake of adequate and successfully applied therapy, knowledge of the precise diagnosis of the illness as well as of medicinal plants, i.e. the pharmacological effect of their components is essential. Plant drugs and phyto-preparations, most commonly with defined active components, verified action and, sometimes, therapeutic efficiency, are applied as therapeutic means.

## II. CONCLUSION

The prospects of traditional medicinal knowledge based on plants are highly promising in today's world, as there is a growing demand for natural, safe, and sustainable healthcare solutions. Centuries of use in traditional settings are a testimony that herbal medicines are effective. World Health Organization (WHO) estimated that the majority of the



populations of most countries were still relying primarily upon indigenous or traditional forms of medicine for meeting every day health care needs.

It has been estimated that in developed countries such as United States, plant drugs constitute as much as 25% of the total drugs, while in fast developing countries such as China and India, the contribution is as much as 80%. Consumers have reported positive attitudes towards these products, in large part because they believe them to be of “natural” rather than “synthetic” origin, they believe that such products are likely to be more safe than drugs, they are considered part of a healthy life style, and they can help to avoid unnecessary contact with conventional “western” medicine.

Although modern medicine may exist side-by-side with such traditional practice, herbal medicines have often maintained their popularity for historical and cultural reasons. Traditional plant-based medicinal knowledge holds great potential for advancing healthcare, supporting livelihoods, and promoting sustainable development.

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