

---

## **History of Medicinal Plants**

- ⊙ The oldest written evidence of medicinal plants' usage for preparation of drugs has been found on a Sumerian clay slab, approximately 5000 years old.
- ⊙ It comprised 12 recipes for drug preparation referring to over 250 various plants, some of them alkaloid such as **poppy** (*Papaver somniferum*).
- ⊙ Chinese herbal remedies are derived from plant, animal, marine, as well as arboreous and herbaceous sources. At least **1,500** different herbal drugs have been tested, analyzed, and used in Chinese medicine; many of which are used even nowadays such as the following: Ginseng, cinnamon bark ephedrine extracted from ephedra which used for treat the bronchitis.
- ⊙ The Indian holy books Vedas mention treatment with plants, which are abundant in that country.
- ⊙ **Reserpine** compound which isolated from *Rauwolfia serpentine* roots and used to treat the nervous system problems and high pressure during Indian civilization.
- ⊙ **Khelin** compound which extracted from *Ammi visnaga* fruits and used to treat the kidney stones and increase the diuretic.

## **Introduction, Importance and uses of Medicinal Plants and Herbs**

Medicinal plants, also called medicinal herbs, have been discovered and used in traditional medicine practices since prehistoric times.

As per data available over three-quarters of the world population relies mainly on plants and plant extracts for their health care needs. More than 30% of the entire plant species, at one time or other were used for medicinal purposes.

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 India and China, the contribution is as much as 80%.

Thus, the economic importance of medicinal plants is much more to countries such as India than to rest of the world. These countries provide two third of the plants used in modern system of medicine and the health care system of rural population depend on indigenous systems of medicine.

Medicinal drugs now used in the developed world come from only about 95 of the 250,000 known species of flowering plants on earth. For thousands of years, medicine and plants were synonymous. Willow bark was the original source of aspirin. The ergot fungus is the base for many important drugs that fight migraines.

However, earlier this century, the medical industry strayed from the finding medicines in plants. Scientists conservatively estimate that at least 300 useful drugs are still undiscovered in the tropical rainforests of South America, at a potential profit of \$94 million each.

Plant synthesise hundreds of chemical compounds for functions including defense against insects, fungi, and disease.

- ⊙ The term “**medicinal plant**” include various types of plants used in herbalism.
- ⊙ Herbalism refers to folk and traditional medicinal practice based on the use of plants and plant extracts.
- ⊙ Herbalism is also known as phytotherapy, herbology or herbal medicine. The use of herbs to treat disease is almost universal among non-industrial societies.

It is the use of plants for medicinal purposes, and the study of such uses.

The word “**herb**” has been derived from the Latin word, “*herba*” and an old French word “*herbe*”. Now a days, herb refers to any part of the plant like fruit, seed, stem, bark, flower, leaf, stigma or a root, as well as a non-woody plant.

These medicinal plants are also used as food, medicine or perfume and also in certain spiritual activities.

**A medicinal plant:** is a plant that has similar properties as conventional pharmaceutical drugs. Humans have used them throughout history to either cure or lessen symptoms from an illness.

**Aromatic plants:** Some plants are endowed with aroma characteristics and this is where the definition aromatic comes from. Such particularities are due to the presence of volatile compounds known as essential oils.

**A pharmaceutical drug:** is a drug that is produced in a laboratory to cure or help an illness.

**Folk medicine:** consists of traditional concepts and methods used in past cultures by people deemed to have the healing power. Often based on religious beliefs, these practices are used to cure diseases and promote emotional and physical wellbeing.

**Medicine:** is the science and practice of the diagnosis, treatment and prevention of disease.

Medicine has two basic meaning; it refers to

- 1.** The science of healing; the practice of the diagnosis, treatment and prevention of disease, and the promotion of health,
- 2.** Medications, drugs, substances used to treat and cure diseases, and to promote health.

### ***Alternative Medicine***

These days the term “Alternative Medicine” became very common in western culture, it focus on the idea of using the plants for medicinal purpose. But the current belief that medicines which come in capsules or pills are the only medicines that we can trust and use. Even so most of these pills and capsules we take and use during our daily life came from plants.

Medicinal plants frequently used as raw materials for extraction of active ingredients which used in the synthesis of different drugs. Like in case of laxatives, blood thinners, antibiotics and antimalarial medications, contain ingredients from

plants. Moreover the active ingredients of Taxol, vincristine and morphine isolated from foxglove, yew and opium poppy respectively.

### **Future of Medicinal Plants**

Medicinal plants have a promising future because there are about half million plants around the world, and most of them their medical activities have not investigate yet, and their medical activities could be decisive in the treatment of present or future studies.

### **Characteristics of Medicinal Plants**

Medicinal plants have many characteristics when used as a treatment, as follow:

1. Synergic medicine- an interaction between two or more drugs that causes the total effect of the drugs to be greater than the sum of the individual effects of each drug.

A synergistic effect can be beneficial or harmful.

2. Support of official medicine- In the treatment of complex cases like cancer diseases the components of the plants proved to be very effective.
3. Preventive medicine- It has been proven that the component of the plants also characterizes by their ability to prevent the appearance of some diseases. This will help to reduce the use of the chemical remedies which will be used when the disease is already present i.e., reduce the side effect of synthetic treatment.

Table presents some of the clinically very important natural product drugs, scaffolds structures, synthetic or semi-synthetic analogs.

No.	Drugs from herbs and plants	Source	Therapeutic activity	Synthetic or semi-synthetic analogs
1.	Quinine	<i>Cinchona succrirubra</i>	Anti-malarial	Chloroquine, meploquinine, pamaquine, premaquine
2.	Teprotide	<i>Bathrops javaraca</i>	Antihypertensive	Captopril, enalapril, lisinopril
3.	Benzyl penicillin	<i>Penicillin chrysogenum</i>	Antibiotic	Ampicillin, Amoxycillin
4.	Codeine	<i>Papever sommiferum</i>	Analgesic	Nalarphine, Meperidine
5.	Morphine	<i>Papever sommiferum</i>	Analgesic	Heroine, naloxane, phthadine
6.	Ephedrine	<i>Ephedra vulgaris</i>	Anti-ashtma	Salbutamol, salmeterol
7.	Vincristine	<i>Cathranthus roseus</i>	Anticancer	Vindesine
8.	Taxol	<i>Taxus baccata</i>	Anticancer	
9.	Reserpine	<i>Rawolfia serpentina</i>	Hypotension	
10.	Digoxin	<i>Digitalis lantana</i>	Cardiovascular	