

## ERA OF THERAPEUTIC PLANTS: A REVIEW

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**Available online at:** [www.ijbbas.in](http://www.ijbbas.in).

Received 20<sup>th</sup> may. 2020; Revised 15<sup>th</sup> June. 2020; Accepted 12<sup>th</sup> July. 2020; Available online: July. 2020

### ABSTRACT

Throughout nearly all cultures medicinal plants were used as a source of medicine. Health, consistency, and effectiveness assurance of therapeutic plants and medicinal products has now become a key problem in both developed and developed countries. The common use of herbal medicines and preparations for health care is mentioned in the Vedas and Bible. For thousands of years, medicinal plants have been used to flavor and preserve food, cure health problems and prevent diseases including epidemics. Throughout the ages the knowledge of their healing properties has been communicated within and amongst human cultures. Chemical ingredients generated during secondary metabolism are typically accountable for the biochemical activity of plant species that are utilized for different purposes across the globe, particularly infection control treatment. Data on the antimicrobial activity of various plants, so far considered empirical, have been scientifically verified, with the growing number of antimicrobial-resistant records on harmful microbes.

**Key words:** enzyme, cellulose, fermentation, strain improvement, mutation

**INTRODUCTION:**

The word medicinal herbs encompasses a number of plant forms used in herbal medicine and some of these plants have a medicinal function. Medicinal plants are the "backbone" of western medicine, meaning that medicinal plants are currently used by over 3.3 billion people in the less developed countries [1]. Such medicinal plants are known as a valuable source of additives that can be used to grow and synthesize the drugs. Except for these plants also play a crucial role in the growth of human cultures all over the world. Through a wide variety of habitats the Indian sub-continent has a very rich diversity of plant species. There are around 17,000 upper plant species, of that about 8,000 are called therapeutic and utilized by rural communities, particularly tribal communities, or in traditional medicinal systems, such as the Ayurveda. UNESCO, 1996 [2] widespread documented the use of conventional medicine and medicinal herbs in most developed countries as a basis for preserving good health.

In addition, a growing dependence on the usage of medicinal herbs in industrial countries has been traced to the extraction and production of many drugs and chemotherapeutics from such plants as well as historically used urban medicinal remedies [3]. Modern medicine systems have become a subject of global interest over the last decade. Recent estimates indicate that a significant percentage of the populace in several developing nations depend mainly on effective practices and medicinal plants to fulfill primary health care needs. While traditional medicine in these countries may be available, herbal medicines (phytomedicines) have often retained prominence for historical reasons. Herbal medicines were served as raw materials in the production of active ingredients that were used in the synthesis of various drugs. As with laxatives, blood thinners, antibiotics, and anti-malarial medicines include plant ingredients.

In addition, Taxol, vincristine, and morphine active ingredients are derived from foxglove, periwinkle, yew, and opium poppy, respectively. Medicine, using local customs and values, is still the cornerstone of healthcare in many developing countries. Health, as described by the WHO, is a condition of full physical, emotional, and social well-being and not just the absence of disease or illness. Medicinal plants will make an significant contribution to the WHO goal of ensuring that all peoples worldwide lead healthy, socio-economic productive lives by the year 2000 [4]. Modern medicine is commonly practiced in China, India, Japan, Pakistan, Sri Lanka and Thailand. In China, ancient cultural medicines contribute around 40 per cent of overall medicinal consumption. Herbal medicines in Thailand make use of legumes found in the Caesalpiniaceae, the Fabaceae, and the Mimosae. It is estimated that the sales of herbal medicines resulted in receipts of more than US\$ 2.5 billion in the mid-90's. And herbal medicinal preparations are more in demand in Japan than conventional pharmaceuticals. Frica is an especially potent vegetable source. Maybe, *Phytolacca dodecandra* is the better remembered species. Plant extracts, generally referred to as endodus, are used as an important molluscicide for prevention of schistosomiasis [5]. Other interesting

examples are *Catharanthus roseus*, which produces anti-tumor agents such as vinblastine and vincristine; and *Ricinus communis*, which produces laxative-castor oil. *Harpagophytum procumbens* is manufactured as crude drug for export in Botswana, Lesotho, Namibia and South Africa. Likewise, they export *Hibiscus sabdariffa* from Sudan and Egypt. Other exports are *Pausinystalia yohimbe*, which yields yohimbine from Cameroon, Nigeria and Rwanda; and *Rauwolfia vomitoria*, from Madagascar, Mozambique and Zaire, which is exploited to yield reserpine and ajmaline. The American Indians have long been concerned with the use of medicinal plants such as *Eupatorium perfoliatum* (bonest), *Podophyllum peltatum* (mayapple), and *Panax quinquefolium* (ginseng) in the US. These plants were also respected and recognised for their esthetic and decorative value. The Mayan Indians in Mexico, the Miskitos and Sumus in Honduras and Nicaragua, the Pech, Lencas, and Xicaques in Honduras, the Pipiles in El Salvador, the Talamancas in Costa Rica, and the Guaymis and Kunas in Panama have been commonly used in Central America. therapeutic plants, with penile strength effects and anti-cancer concepts are the target of trafficking to manufacture markets in France, Japan, Switzerland, the United Kingdom [6].

Recently, the best known example is that of tetu lakda (*Nothadoytes foetida*). The plant, found widely in southern India and Sri Lanka, is used as an origin of anti - cancer medicines. There are a great many commercial applications of medicinal herbs. They range from conventional remedies, herbal teas, and natural foods such as nutraceuticals, to galenics, phytopharmaceuticals, and pharmaceuticals produced by industry. In addition, medicinal plants are a useful supply of international exchange for most developing nations, because they are a willing drugs like quinine and reserpine; of galenic substances such as tinctures and intermediates (e.g. diosgenin from *Discorea* sp.) in semi-synthetic drug development. Therapeutic plants are an important part of drug company research innovations [7]. Such work centers on isolating and directly utilizing medicinal plants components, or creating semi-synthetic medicines, or again actively screening natural products to create synthetic pharmaceutically chemical ingredients [8].

The global demand for chemicals extracted from plants – pharmaceuticals, fragrances,

spices, and paint ingredients alone exceeds several billion dollars a year. The production and promotion of bioindustries centered on pharmaceutical crops in developed countries depends on the existence of equipment and knowledge on upstream and downstream bioprocessing, extraction, purification and distribution of pharmaceutical plants' manufacturing potential. In addition, the absence of modernized socio-economic and public healthcare systems strengthens rural and low-income urban dependence on conventional medicinal herbs and plants as complementary aids to standard pharmaceutical consumer goods [9].

#### **Therapeutic product futures:**

Therapeutic herbs have a bright future as these are approximately half a million crops across the planet, and many of these have not yet investigated their workplace technology, and their medicinal activities may be critical in the diagnosis of current or previous studies [10].

**Table 1.** Several medicinal herbs in central India have high capacity for antioxidants (Krishnaiah et al. 2011) [9].

Plant Name	Effective ingredient(s)
Syzygium cumini	Triterpenoids, Ellagic acid
Solanum nigrum	Carotenoids, Ascorbic acid
Psidium guajava	Flavonoids, Limonoids
Plumbago zeylanica	Alkaloids, Glycosides
Ocimum sanctum	Carotenoids, Ascorbic acid
Moringa olifera	Glycosides
Momordica charantia	Alkaloids, Saponin
Hemidesmus indicus	Alkaloids, Glycosides
Dalbergia sisoo	Leaves and flower
Cassia fistula	Flavonoids

#### Attributes of Medicinal Plants:

Synergistic medicine-All plant components communicate concurrently, so that the uses can enhance or harm others nullify their potential negative effects. Support of official medicine-The materials of the plants proved to be very successful in treating complicated cases such as cancer diseases. Reventive medicines-It has been shown that the plant portion is also distinguished by its power to inhibit the occurrence of certain diseases. This would help reduce the use of the

pharmaceutical treatments that would be required if the disease already exists [10].

#### The medical importance of therapeutic plants:

Medicinal herbs, for instance beliefs and various rituals, have performed an important part in the growth of the human society. Some of the current medications, for example aspirin, are derived indirectly from medicinal plants. Numerous food crops, for example garlic, have medicinal effects [11].

Medicinal plants are modern drug-resources. It is reported that there are over 250, 000 varieties of flowering plants. Researching native herbs helps clarify the toxicity of plants and protects humans and animals from natural poisons. Pharmaceutical plant cultivation and conservation preserve genetic diversity, for example plant metabolism. Plant therapeutic results are attributed to particularly secondary metabolites released by plant species. Natural compounds comprise: primary and secondary metabolites. Phytotherapy is use of for medical uses of plants and plant extracts (especially plants that are not part of normal diet). Biochemistry is the analysis of plant-produced bioactive compounds which describes the separation, purifying, characterization and morphology of the wide variety of various metabolic compounds from plants [12].

#### **Plant primary metabolic byproducts:**

Organic molecules generated in the plant world have metabolic processes that are important for the growth of plants developed at each plant. These Come in the form of carbohydrates, amino acids, nucleotides, fatty acids, hormones and lipids [13].

#### **Secondary Metabolites of Plant:**

Chemical materials formed in the plant world No specific roles are involved in the growth and development of plants. Produced during plant growth in various plant families, in similar groupings of plant families or in particular tissues , cells or developmental stages. Include terpenoids, special metabolites of nitrogen (including amino acids, amines, cyanogenic glycosides, glucosinolates and alkaloids), and phenolics [14].

#### **Conclusion:**

Hence, encouraging researchers and practitioners to study hard to explain the most active compounds that can be derived from medicinal herbs is a very important argument for the open access journals. Latest and renegotiated involvement in medicinal herbs coupled with information systems advances has fuelled an increase in the range and quality of electronic information about medicinal plants as a re-emerging health aid [10]. Varied sources of these knowledge have recently been investigated both in conventional abstracting systems and in a number of online electronic repositories. Education to indigenous communities and cultures on medicinal plants is being significantly improved as a result of these developments.

In addition, the active involvement of these natural custodians and useful technology practitioners is assured in research generation that focuses on screening programmers dealing with the isolation of bioactive concepts and the creation of new drugs.

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