

Phyto-Therapeutic Plants As Miracle Around You – A Review

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Abstract:- Plants and herbs are used extensively for therapeutic purposes to treat number of diseases and ailments. In India almost 44 % of the total 17000 native species of flora, are medicinal plants. The purpose of our study was to brief out some of the important yet lesser known medicinal plants. The study was conducted to review the effectiveness of some of these plants and the uses associated with them. The plants that are considered in the study have no relation amongst them. Also there were no specific criteria for which any of these plants were taken into consideration. Various research papers from several publications were extracted out from web and the searches was limited to research articles from last five years only and the articles were then further shortlisted so as to summarize them for the review.

I. INTRODUCTION

Plants as a source of medicine are being widely used today, and this can be seen as one of the major growing industry for a sustainable future of treatment. The ancient manuscripts, papers, & articles holds the proof that this traditional practice have been the basis for medical treatments through thousands years of history of the world. Phyto medicine now can be visualize as an emerging trend among people all over the world, with its lesser side effects and long term effective treatment. In the field of research too, the scientists all around the world majorily from the countries like India,USA and China, are now focusing more towards phyto-therapy as a continual and viable tool for humankind. There are various advantage of a single phyto- constituent as one phyto-constituent can work on different factor of the body this may help to reduce the dose frequency and then further reduce the risk factor, so that we can use them as multi-targeted treatment for complex diseases.

Every environment has its own kind of flora where most of them have different pharmacological effect. With more than 45000 species of plants our environment has enough competence to pull over the illness.

This review host a compilation of updated wok regarding some common plants in the field of phyto-therapy. The dossier will help out people to go through the lesser known benefits of plants that are available very easily in our vicinity, i.e, China rose, Doob, Thuja, Tulsi and Moringa.

A. *Hibiscus rosa-sinesis*-

Hibiscus is the most common plant which can be found in most of the places in our locality. There are over 250 species found only in India, in tropical as well as subtropical region. Some common name of hibiscus are china rose, gudhal, rose of althea and rose of Sharon etc.[1,2] Other than india it is found in US, china, japan, affrica, and in some other country too.The flowers of hibiscus plants looks attractive because of their colour and their symmetry. They possess no of medicinal activity. In Ayurveda hibiscus flowers are used in anti-fertility purpose. The other part of the plant like roots, leaves, stem also having some medicinal importance which include laxative, oral contraceptive, antimicrobial, anti-diabetic etc.[3,4] The extraction process involve in isolation of different active constituents are hydro-distillation, three phase partitioning, Percolation, maceration and supra-critical fluid extraction. The active constituent which are generally found in the plant are alkaloids, glycosides, reducing sugar, resin and tannin. In addition to this some other active constituents include cyanidin, quercetin, hentriacontane, calcium oxalate, thiamine, riboflavin, niacin and ascorbic acid. Different type of flavonoid also found in leaves as well as in stem also.[5,6] The essential oil isolated from the plant are used in cosmeceuticals and food product. There are various marketed formulation available for the different purpose like oral tablet for diabetes, hair oil for baldness, hibiscus herbal tea for anti- depressant treatment etc.[13]



Fig 1

➤ *Taxonomical classification of Hibiscus rosa-sinensis*

Kingdom - *Plantae*
Subkingdom - *Tracheobionta*
Superdivision - *Spermatophyta*
Division - *Magnoliophyta*
Class - *Magnoliopsida*
Subclass - *Dilleniidae*
Order - *Malvales*
Family - *Malvaceae*
Genus - *Hibiscus*
Species - *Hibiscus rosa-sinensis*.

B. Cynodon dactylon-

Cynodon dactylon or Bermuda grass is an annual grass cultivated globally, and it is native to warm temperate and tropical regions in particular. *Cynodon* occurs on nearly all types of soil including in fertile soil. As instance the loamy soil.[7,8] It is natural in degraded areas such as parks, roadsides, overgrazed, trampled fields, uncultivated lands, places with elevated

nitrogen levels, and is often found in wet sites along rivers.[9,10] There are more than 100 species are found in various country like Africa, India etc. Other common name of the plant are couch grass, devils grass, hariyali grass, durva etc. By using various extraction techniques (soxhlet extraction, maceration, percolation, stem distillation) we can isolate different active constituents from the plant parts like stem or leaves. The active constituents found in the plant are flavonoids like apigenin, orientin, luteolin or vitexin. Plant also contain minerals, carbohydrates, protein, alkaloids, vitamins, palmitic acid and some essential oil. The species has tremendous medicinal importance, and can be applied both externally and internally. Various transdermal preparation are used in treatment of wound healing and burning sensation. Other uses are anti-diabetic, anti-oxidant, anti-cancer, immunomodulator and anti-fertility etc. Oral formulation of *cynodon dactylon* are available for immunomodulator and powder extract are available for polycystic ovarian syndrome. [11,12]



Fig 2

➤ *Taxonomical classification of Cynoden dactylon-*

Kingdom - *Plantae*
Subkingdom - *Tracheobionta*
Division - *Magnoliophyta*
Class - *Liliopsida (Monocotyledons)*
Order - *Cyperales*
Family - *Poaceae (Grass family)*
Genus - *Cynodon*
Species - *Cynodon dactylon (L.)*

C. Thuja occidentalis-

Thuja occidentalis is also known as arbor vitae belonging to family cupressaceae. This european tress is widely used for homeopathic as well as in phytotherapy.[14] The plant of thuja is also known by different names like northern white cedar, eastern white cedar, thuja etc. Some other variety are *Thuja occidentalis f. buchananii (Spath) Rehder* *Thuja occidentalis f. cristata (Carriere) C. K. Schneid*, *Thuja*

occidentalis f. filiformis (Beissner) Rehder, *Thuja occidentalis f. lutescens (Beissner) C. K. Schmieid*, *Thuja occidentalis f. pendula (Gordon) Beissner*. Active constituents of the plant can be isolated with the help of various extraction techniques, like essential oil can be isolated by microwaves assisted hydrodistillation extraction, steam distillation and hydrodistillation[15,16]. *Thuja* plant contains various constituents which shows different biological activity. Essential oil like borneol, camphene, fenchone, limonene, thujone (can be isolated from the leaves and stem). Flavonoids like catechine, myricetin, quercetin, myricitrin and some other active constituents are tannic acid, polysaccharide and some proteins. The pharmacological activity that can be shown in plant extract are anti-diabetic, anti-bacterial, nematocidal, anti-viral or larvicidal. There are marketed formulation available for treatment of wart and acne. *Thuja* gel, *thuja* ointment and oral formulation are also available for treatment of various acute as well as for some chronic disease.[17,18]



Fig 3

➤ *Taxonomical classification of Thuja occidentalis-*

Kingdom - *Plantae*
Subkingdom - *Tracheobionta*
Division - *Coniferophyta*
Class - *Pinopsida*
Order - *Pinales*
Family - *Cupressaceae*
Genus - *Thuja*
Species - *Occidentalis*

D. Moringa oliefera-

Moringa oliefera is a plant belonging to the family Morigeaceae. The plant is also referred as horse reddish tree, drumstick or mother's best friend. It is already a crop of crucial significance in India, Ethiopia, the Philippines and Sudan.[24,27] It is also cultivated in western, eastern and southern Africa, tropical Asia, Latin America, Florida and the Pacific Islands. Plant parts like root, leaf, stem are the rich source of nutrient so

it can be use as medical as well in diet supplement.[19] A wide range of biological activity of the plant constituents has been reported in literatures. Active constituents like vitamin (A, C & D), Falvonoids (quercetin, rhamntin, apigenic etc), Glycosides, Alkaloids and essential can be isolated with technique like Hydro- distillation, Microwaves assisted extraction and three phase partionting method.[23] Formulation of pure powders of herbal medicines in the form of traditional immediate release tablets will bring complete advantages from both their nutrient and medicinal constituents, ease of administration, increased approval, extended shelf life and also quality control. A broad variety of pharmacological effects including antiinflammatory, antitumor, antimicrobial, hypotensive, hypocholesterolemic and hypoglycemic effect have been reported for moringa oliefera leave extract.[25,26]



Fig 4

➤ *Taxonomical classification of Moringa oliefera-*

Kingdom - *Plantae*
Subkingdom - *Tracheobionta*
Division - *Tracheophyta*
Class - *Magnoliopsida*
Order - *Brassicales*
Family - *Moringaceae*
Genus - *Moringa*
Species - *oliefera*

E. Ocimum sanctum-

Since the Vedic age, tulsi has a rich and spurious background renowned for its tremendous curative and multifunctional functionality. *Ocimum sanctum* is considered as ubiquitous aromatic plant belonging to family Lamiaceae. It is known as Holy Basil in English and Tulasi in Sanskrit. Other names used for the Tulsi are Manjari, Krishna Tulsi, Trittavu, Tulshi and Thulsi.[28] The appearance of a tulsi plant symbolizes a Hindu's religious orientation. *Ocimum sanctum* comes from India, Iran and is now growing in Egypt, France, Hungary, Italy, Morocco, USA. Naturally,

Basil is found wild in the tropics, and subtropical regions of the world. A Hindu household is rendered incomplete if it has no tulsi plant in the courtyard. Tulsi plant leaves are incredibly beneficial during the rainy season, when the community is being afflicted by diseases such as malaria and dengue.[30,34] Boil tulsi's tender leaves in milk, and give it to the patient. The juice derived from the leaves of tulsi acts as the perfect treatment for bringing down fever.[31] Basils are the rich source of vital nutrient such as vitamin A, vitamin C, calcium and phosphorus. *Ocimum sanctum* contains several chemical constituents such as, oleanolic acid, rosmarinic acid, ursolic acid, eugenol, linalool, carvacrol, β -elemene, β -caryophyllene, germacrene. *Ocimum sanctum* has various medicinal properties like diuretic, anti-oxidant, blood purifier, larvicide, expectorant. Recent scientific work provides excellent proof that tulsi increases stamina, alleviates inflammation, decreases cholesterol, removes contaminants, avoids radiation, prevents stomach ulcers, decreases fevers, promotes digestion and provides a rich natural antioxidants and other nutrients.[29,33]



Fig 5

➤ *Taxonomical classification of Ocimum sanctum-*

Kingdom - *Plantae*
Subkingdom - *Tracheobionta*
Division - *Magnoliophyta*
Class - *Magnoliopsida*
Order - *Lamiales*
Family - *Lamiaceae*
Genus - *Ocimum*
Species - *sanctum*

S.No.	Plant	Active constituents	Biological activity	Formulations
1.	<i>Hibiscus rosa-sinensis</i>	Flavonoid, Tannins, Glycoside, Terpenoids, Carbohydrates, Polyphenols etc.	Anti-cancer Anti-microbial Anti-oxidant, Immunomodulator, anti-diabetic, Anti-depressant, Effective against endrogenic alopecia, Antinociception etc	Transdermal formulation like powder and Hydrogel, Oral formulation eg; tablet & syrup and some green tea formulation are present in the market
2.	<i>Cynoden dactylon</i>	Glycoside, Tannins, Reducing sugars Protein, Essential oil, Flavonoids	Anti-diarrheal, Anti-diabetic, Anti-microbial, Neuroprotective, Anti-arrhythmic, CNS depressant	Various Ayurveda formulation available in the market like Durvadi kvatha, Durvadya ghrta, Durvadya taila and Durvadi yoga Ointment and gel for wart.
3.	<i>Thuja occidentalis</i>	Contain various essential oil thujone, fenchone and monoterpene. Water soluble polysaccharides and minerals. Tannic acids	Insecticidal, Radioprotective, Anti atherosclerosis, Neuroprotective, Anti- acne, Anti-fungal, Anti-inflammatory	Essential oil formulation for analgesic or bacterial infection.
4.	<i>Moringa oliefera</i>	Saponin, Polyphenol, Vitamins(Vit A) Flavonoids, Tannins	Hypolipidemic effect, Hepato-nephro toxicity, Immunomodulatory, Analgesic, Anti-viral, Anti-bacterial Anti-bacterial, Anti-spasmodic,	Oral formulation like capsule and tablet or syrup for nutrition purpose. Hair oil for hair damage treatment,
5.	<i>Ocimum sanctum</i>	Minerals like vitamin A, Vitamin C, Alkaloid, Glycoside, Flavonoid (cirsilineol, circimaritin, isothymusin, apigenin and rosameric acid)	Cardio protective, Anti-emetic, Hepato protective, Anti-inflammatory, Anti-fungal	Oral formulation for diabetic. Green tea for stress relieving. Lozenge for common cold and cough. Hair oil for preventing hair damage

Table 1

II. CONCLUSION

The review revealed that each part of the plants that are taken into consideration has number of pharmacological activities. Although with the increasing shift of consumers towards Ayurveda, these plants have gained significant attention from the pharmacologist around the world, there is huge scope for more continual research on them so as to make the most of their use in a needed sustainable medicinal era.

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