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Review: Phytochemical Analysis and Medicinal Values of Selected Indian Folk Medicinal Plants of Melghat Forest Terrain.

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Abstract:

According to reports, about 95% of the prescriptions in India's traditional systems of Siddha, Ayurveda, Homeopathy, and Unani are plant based. Around the world, there has been a resurgence of interest in the study and application of traditional medicine in recent years. Countries have therefore looked to collaborate in order to find and incorporate safe, beneficial aspects of traditional medicine into their national health systems. Traditional medicine makes extensive use of medicinal plants. plants have high content of secondary metabolites which are used to treat and prevent a wide range of illnesses. Medicinal plants remain a valuable medicinal tool for treating human illnesses. Strong traditional medical systems, including Chinese, Ayurveda, and Unani, have developed and been used for the past 2500 years, primarily in the eastern continent. Since almost 80% of people in poor nations depend on traditional medical systems for their primary healthcare requirements, these traditions are still thriving. Initial Secondary Metabolite Screening. The leaves of various medicinal plants were shown to be high in anthocyanins, coumarins, fatty acids, emodin's, leuco-anthocyanins, tannins, terpenoids, steroids, and saponins based on a phytochemical screening and qualitative assessment study. These plants have compounds with potential medical uses, including precursors for the production of drugs that have been shown to effectively cure illnesses. The active components of the plant can be found in any part of the plant, including the bark, leaves, flowers, seeds, and more. Understanding the chemical components of plants is desirable since it will be useful for the production of complicated compounds. Numerous workers have reported screenings of different plants for phytochemicals. Medicinally active constituents were found in the plant samples used in the current review study. The findings support the use of these plants to treat a range of infectious diseases in traditional medicine.

Keywords: - Folk Medicinal Plants, Phytochemical Screening.

Introduction:

Theophrastus (371-287 BC) established botanical science with his writings "De CausisPlantarium" (Plant Etiology) and "De Historia Plantarium" (Plant History), in which he classified over 500 therapeutic plants that were then known.For thousands of years, people have utilized plants to preserve and flavour food, cure illnesses, and stop epidemics. Over the years, both inside and between human societies, the knowledge of their medicinal qualities has been passed down. The biological characteristics of some plant species utilized for a variety of reasons worldwide, including the treatment of infectious diseases, are typically attributed to active chemicals generated during secondary vegetal metabolism.The usage of medicinal plants has greatly aided basic health care around the world, particularly in South American nations. There are an estimated 250–500,000 plant species on Earth, but only 1–10% of them are consumed by

humans and other animals [1]. With more than 20% of all known species, Brazil has the largest biodiversity in the world. With more than 55,000 species described, or 22% of the world's total, this nation boasts the most diversified flora.Following such biodiversity, the usage of medicinal plants is widely accepted. Only 37% of the commercially available medications are consumed by the majority of Brazilians (80%), who rely nearly entirely on natural treatments [2].

According to reports, about 95% of the prescriptions in India's traditional systems of Siddha, Ayurveda, Homeopathy, and Unani are plant-based. Primary and secondary metabolites, which serve different purposes, are produced by plants [3-4]. Proteins, lipids, simple sugars (glucosides), amino acids, and primary metabolites all play a role in cellular functions. Chemically active substances, such as flavonoids, alkaloids, terpenoids, steroids, saponins, etc., are examples of secondary metabolites [5].

Alkaloids, phytosterols, glycosides, phenol, flavonoids, and diterpenoids were among the secondary metabolites identified by the qualitative phytochemical examination of therapeutic plants. Plant secondary metabolites, often known as phytochemicals,[6] exhibit notable pharmacological properties, including anti-oxidant, anti-allergic, antibacterial, hypoglycaemic, and anti-carcinogenic properties [7].

MATERIALS AND METHODS:

There 37 distinct plant species fresh leaves were gathered from and around Melghat Forest, and the plants were taxonomically identified and compared to the herbarium.

Table 1: Medicinal Plants Selected for Phytochemical analysis

Sr. No	PLANT NAME	FAMILY	PLANT PART	MAIN CHEMICAL CONSTITUENTS
1.	***Citrus aurantifolia***	Rutaceae	Fruit Seed,	Alanine, α –pinene,ascorbic acid,β - Sitosterol, caffeic acid,
2.	***Carissa carandas***	Apocynacae	Leaves, fruits roots	Triterpenoid like lupeol ursolic acid carissone, lignins , Flavonoids
3.	***Withaniasomnifera***	Solanceae	Berries, leaves, roots	Ascorbic acid,α-tocopherol and reduced glutathione, superoxide dismutase,ascorbate peroxidase, catalase, peroxidase & polyphenol oxidase
4.	***Ocimum sanctum***	Lamiaceae	Leaves, Seeds	Ascorbic acid,β-carotene, β-sitosterol, eugenol,Palmitic acid, tannin
5.	***Mentha piperata***	Lamiaceae	Leaf	A -tocopherol,apigenin, β -carotene, γ tocopherol,kaempferol, Luteolin
6.	***Piper nigrum***	Piperaceae	Fruit	Ascorbic acid, β carotene,Lauric acid, myristic acid, palmitic acid, piperine Insulin, tannic acid
7.	***Celastrus paniculata***	Celastraceae	Leaf, Fruts.	alkaloids, sterols, fatty acids, terpenoids, flavonoids, and glycosides
8.	***Daucus carrota***	Apiaceae	Root	terpinene, histidine Antitoxin Ferscolin

9.	***Glycyrrhiza glabra***	Fabaceae	Root rhizome	triterpenoid saponins like glycyrrhizin and glycyrrhetinic acid, flavonoids, isoflavonoids
10	***Salvia sclarea***	Lamiaceae	Entire plant, seed	Palmitic acid, rosemarinic acid
11	***Allium sativum***	Amaryllidaceae	Leaves Bud	6-Gingerol, alanine, Ascorbic acid, Histidine, Lauricacid, Methionine, Myristic acid,Palmitic acid, Tryptophan EGB 761,Ginkgolide
12	***Zingiber officinalis***	zingiberaceae	Leaves Rhizome	Alanine, α-tocopherol, Ascorbic acid, β -carotene, β sitosterol, Histidine, OPC, Methionine, Palmitic acid,
13	***Cymbopogon citratus***	Poaceae	Leaves	Eugenol, Linalyl acetate, Palmitic acid, Tannin
14	***Ginkgo biloba***	Ginkoaceae	Plant	α-tocopherol, Ascorbic acid, β -carotene,
15	***Vitis vinifera***	Vitaceae	Fruit, Seed	sitosterol, Histidine, OPC, Methionine, Palmitic acid
16	***Commiphora myrrha***	Burseraceae	Resin, Sap	sitosterol,Myrcene, Selenium.
17	***Bacopa monnieri***	*Plantaginaceae*	Roots,stolons Leave	Alkaloids like brahmine and herpestine, and saponins like bacosides A and B
18	***Santalum album***	Santalaceae	Leaf	B –sitosterol, Caryophyllene oxide, eugenol,isoeugenol
19	***Curcuma domestica***	Zingiberaceae	Oleoresin	Alanine, eugenol, β -sitosterol, Palmitic acid, phenol
20	***Gymnemasylvestre***	Asclepiadaceae	Leave	triterpene saponins like gymnemic acids (oleanane type), and gymnemasides like anthraquinones, flavones, and acids.
21	***Alisma Plantago aquatica* L.**	Alismatceae	Rhizome	Only antioxidative fractions devoid of beta-asarone should be used,
22	***Allium ursinum*L.**	Amaryllidaceae	Flowering aerial	Triterpene (alisol B)
23	***Vaccinium myrtillus* L.**	Ericaeae	Flowering aerial parts	Tannins, flavonoids
24	***Anthyllis vulneraria*L.**	Fabaceae	Flowering aerial parts	Flavonoids,phenylpropanoids (verbascoside)
25	***Holostemma ada-kodien***	Asclepiadaceae	Roots and tubers	flavonoids, tannins, steroids, alkaloids, terpenoids, and amino acids,
26	***Lotus corniculatus*L.**	Fabaceae	Flowering aerial parts	Flavonoids

27	***Melilotus officinalis* L. *Pallas.***	Fabaceae	Flowering aerial parts	Flavonoids
28	***Ononis spinosa* L.**	Fabaceae	Flowering aerial parts	Flavonoids,
29	***Trifolium arvense* L.**	Fabaceae	Bark, Flowers Bark	phenolic acids Flavonoids
30	***Oroxylum indicum***	Bignoniaceae	Leaves,Root bark,Stem bark,Fruit pods, Seeds	flavonoids like chrysin, baicalein, and oroxylin-A, as well as other compounds like ellagic acid, biochanin-A, and triterpenoids
31	***Trifolium pratense* L.**	Fabaceae	Flowering aerial parts	Flavonoids, phenolic acids
32	***Quercus petraea* L.**	Fagaceae	Flowering aerial parts	Flavonoids, iridoids
33	***Quercus robur*L.**	Fagaceae	Flowering aerial parts	Phenolic acids,flavonoids, carotenoids
34	***Picrohizakurroa***	Scrophulariaceae	Rhizome and roots	iridoid glycosides, including picroside I and II,
35	***Swertia chirata***	Gentianaceae	Roots stem leaves whole plants	xanthones, iridoids, seco-iridoid glycosides, flavonoids, and alkaloids
36	***Saussurealappa***	Compositae	Roots	sesquiterpenoid lactones like dehydrocostus lactone and costunolide, along with flavonoids, alkaloids, and other terpenes.
37	***Catharanthus roseus***	Apocynaceae	Leaf Leaf	A -tocopherol,apigenin, β -carotene, γ tocopherol,kaempferol, Luteolin

CONCLUSIONS:

Traditional medicine makes extensive use of medicinal plants, plants high in secondary metabolites to treat and prevent a wide range of illnesses. Many of the plants under study have been utilized in medicine since the days of Ayurveda, the traditional Indian medical system.Numerous bioactive chemical elements, such as anthocyanins, steroids, terpenoids, coumarins, fatty acids, tannins, saponins, leucoanthocyanins, and emodin's, were found in the various leaf extracts of medicinal plants. The high levels of steroids, tannins, terpenoids, saponins, and glycosides found in medicinal plants are responsible for their anti-inflammatory, antispasmodic, ant analgesic, and diuretic properties.

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