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ANTIOXIDANT PROPERTIES OF INDIAN MEDICINAL PLANTS IN THE REGION OF MAHARASHTRA AND TAMIL NADU: A REVIEW

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ABSTRACT: India is the peninsula of the herbal hub, in which the ayurvedic system of medicine has flourished as enlightenment in the field of medicine. Plants had played a vital role since ancient times when people used plant derivatives as a source of the drug. Currently, some spices and medicinal plants have become the preponderant source of drug discovery in research for treating diverse forms of the disease, including cancer, due to having anticancer, antimicrobial, and antioxidant properties. Several spices and medicinal plants are potential sources for the forestallment and treatment of varied diseases, which contains several important bioactive compounds and phytochemical properties. Antioxidant activity can be arrested by flavonoids, tannins, phenolic acids, carotenoids, *etc*., depending on their physical structure. But in plants, Polyphenols are the most abundant antioxidant having a splendid ability to capture oxidative free radicals. The present study favours detailed wisdom on the antioxidant activities of nearly 80 different Indian medicinal plants in Maharashtra and Tamil Nadu which would be more beneficial for further research to develop new drugs, cosmetic products, energy drinks, healthy food products, *etc*.

INTRODUCTION: Nature is the best physician; its chest is full of healing herbs and medicinal plants of incomparable worth. Herbalism is based on relationship-relationship between plant and human, human and planet, and plant and planet. Using herbs in the healing process means taking part in an ecological cycle, and herbs' flavors and fragrances play an important role in the healing process. Naturally, herbs are used in more amounts than shrubs. Medicinal plants are an essential resource used to treat a multitude of ailments; also, they have a very versatile lifestyle. Each part is slaving as an asset for all living lives everywhere in the world.

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In India, plants of therapeutic potential are widely used in pharmaceutical industries by different categories like Ayurveda, Unani, and Siddha. Nowadays, people favor synthetic drugs instead of herbal medicines; only 15-20% use natural drugs for their treatment. So, the demand for chemically modified products is increasing rapidly and synthetic antioxidants may breed health issues like kidney failure and liver damage due to their toxin & carcinogenicity [1]. But the happiness of our lives depends on the quality of a healthy lifestyle; also, scientists have safety concerns.

Thus, the progression of reliable antioxidants from natural sources is accelerating, and many plants are rational sources of Phytochemicals that retain antioxidant conditioning and have been used as prescriptive medicines to treat various ailments. Phytochemicals; "Phyto" means "Plants," and these are a powerful group of chemicals that are derived from natural resources, especially with plant origin. In simple words, the chemical compounds present

or extracted from plants, vegetables, fruits, etc., protect cells from damage, fight against foreign particles, and are also responsible for antioxidant and antimicrobial activities. Nature is a unique source of structures of high phytochemical diversity; some of them possess interesting biological activities which can be helpful for the development of new therapeutic drugs. Phyto therapy and Nutrition therapy have been combined due to a new concept to boost our immunity. So, demand for nutraceuticals derived from plant resources is increasing rapidly to improve health conditioning [2].

Medicinal plants are an integral part of human life to fight against several diseases, potent sources of phytochemicals, important nutrients, and bioactive compounds. More than 80,000 plants are used in developed or developing countries for their primary health care to get instant and prolonged relief. A huge population in the primary healthcare system depends upon availability, acceptability, adaptability, *etc*. Medicinal and aromatic plants are important resources of primary and secondary metabolites for safe and effective drug formulation; they also play a vital role in the treatment of severe disorders such as cancers, kidney failure, irritations, skin disorders, microbial infections, migraine, etc. Considering eventuality, vacuity, and cost-effectiveness, several health interpreters and researchers advise taking different ethnomedicinal plant derivatives for better and quick protection from infectious diseases [3].

Maharashtra is situated in the western central part of India and Tamil Nadu is in the southern part of India. These two states are the most blessed region with natural beauty and a wide variety of medicinal plants that humans could use as their primary healthcare resources. According to Indian Resources at-2 AWIFS data, Maharashtra's forest (Fifth largest forest in India) covers 21.6%, and Tamil Nadu's forest covers 17.59% of the state's geographical area [4]. But now the scenario has changed due to the large population and lack of awareness. General people in today's generation are not that interested in enhancing their knowledge about traditional uses of plants and how they are effective in our daily lives. For detailed sapience, we collected information about plant extracts, therapeutic uses and assays used to estimate the antioxidant activity of some medicinal plants located in the region of Maharashtra and Tamil Nadu and these plants have been utilized as a hotspot for manufacturing medicines to treat human diseases because they contain a high therapeutic value.

Antioxidant Activity: Antioxidant is the word itself, a miracle. These are such types of substances those help protect against diseases caused by potentially harmful molecules called free radicals. Free radicals are highly reactive molecules having an unpaired electron Superoxide anion radical O_2^- Hydrogen peroxide (H_2O_2), Hydroxyl radical (OH), Peroxyl radical (OH_2^-), Peroxynitrous acid (HNO_3), *etc*. generated from Oxygen only) which are produced inside cells during various metabolic cycles, for example, responses associated with breath, irritation, inflammation, phagocytosis, apoptosis, necrosis and arachidonate pathway. Free extremists are likewise delivered by openness to tobacco smoke, liquor, ecological toxins, changes in the way of lifestyle, *etc*., starting a course of cell damage, organ failure, and disturbance of homeostasis by harming fundamental biomolecules like DNA, lipids, and proteins [5].

Medicinal plants and spices have been experimented with as sources of various Phytochemicals and are effective in the field of Pharmaceutics; many of them possess powerful antioxidant activity. Thus, herbs and spices may have an important role in antioxidant defense and redox signaling. So the employment of plants and their merchandise are very effective in reducing oxidative stress in our body. Also, the mortal body has an innate immune system conforming of endogenous antioxidants to reduce the evil effects of harmful oxidants and they have the proper ability to downgrade oxidative stress in the body by scavenging ROS (Reactive Oxygen Species) to bounce damages and cure from hilarious diseases. Some common antioxidant enzymes such as superoxide dismutase (SOD), CAT, GPx, and glutathione reductase (GR) are present in the front line of defense against independent revolutionary damage under the provision of oxidative stress [6, 7]. It is of two types according to its operating mechanism, natural and synthetic. Some examples of synthetic antioxidants are butylated hydroxytoluene (BHT), butylated hydroxyanisole

(BHA) propyl gallate, and tetrabutyl hydroquinine, which are highly volatile, carcinogenic, and detrimental to health. Hence, their use is becoming unpopular, and there is a general tendency to use natural antioxidants [8].

Nowadays, natural antioxidants are in high demand in food, cosmetics and pharmaceutical industries, and also they are safe, effective, economical, and easily available compared to synthetic ones. Medicinal plants are good sources of phytoconstituents such as phenols, flavonoids, alkaloids, glycosides, lignin, carotenoids, *etc*., and possess antioxidant activities [9, 10]. Also, some parameters should be considered when accounting for the effectiveness and selection of an antioxidant substance capable of particular use. The edge of antioxidant compounds depends on factors like temperature, structures, state of oxidization, attention, and localization in the system, *e.g.*, the interface distribution. Generally, the chemical structure of an antioxidant can determine its natural reactivity to free radicals, which influences antioxidant activity [11]. Some applicable assays are used to estimate the antioxidant properties of medicinal plants.

- 1,1-diphenyl-picrylhydrazyl radical scavenging assay (DPPH method).
- ABTS radical scavenging method.
- Ferric reducing assay.
- Superoxide anion radical scavenging assay.
- Cupric ion reducing antioxidant capacity assay.
- Reducing power assay.
- Hydrogen transfer reaction assay, including crocin bleaching assay.
- Oxygen radical absorbance capacity assay.
- Lipid peroxidation assay.
- Ferric thiocyanate assay *etc*.[12].

Among these methods, we should have to perform at least two assays for assessing the antioxidant prospect of plants because each antioxidant assay has a different mechanism.

Traditional Medicinal Plants used in Maharashtra and Tamil Nadu: Since ancient times, medicinal plants have traditionally been used to cure various disorders; also, the use of herbal drugs has fleetly increased in the last few decades, and day by day it is expanding hastily. As per the historical record of the World Health Organization (WHO), 25% of individuals in developed countries and 75-80% of individuals depend on customary herbal medicines/ traditional plants as their firsthand source of treatment due to cost-effectiveness and less side effects.

Among the developing countries, India is considered one of the top countries with the highest diversity, having a large number of medicinal plants, including herbs, shrubs, climbers, creepers and trees, *etc*., which remain unknown to us; the vast maturity of them yet remain untested, and their uses are poorly monitored as well [13].

This scenario is also prevalent in Maharashtra and Tamil Nadu, where medicinal plants play a pivotal role in treating diseases. Here some selected medicinal plants from Maharashtra and Tamil Nadu were evaluated for antioxidant properties. The leaves, stem, bark, root, flower, and seed were extracted for further assays and listed in **Tables 1** and **2**, respectively.

Maharashtra is a state area of 307,713 km² in India's Western and median peninsular region, enwrapping an affluent portion of the Deccan Plateau. It is the second-most vibrant state in India and the third-most vibrant country bureau worldwide. Tamil Nadu is the successor to the old Madras Presidency, which covered the bulk area 130, 058 km² of southern India and is famed for its Dravidian-style Hindu tabernacles. Generally, Maharashtra and Tamil Nadu, blessed regions with traditional medicinal plants were revalued by extensive research on their therapeutic principles to fight against severe diseases. As of 2021, the total land area in India is 328.7 million ha. Forests cover 76.5millon ha. which is 23.27% of the total geographical area. According to the Indian State of Forest Report (ISFR), Maharashtra's and Tamil Nadu's forests cover 20.01%, 17.59% of its geographical area, 9.50%, and 6.99% of its geographical area of India, respectively [14].

TABLE 1: MEDICINAL PLANTS WITH ANTIOXIDANT ACTIVITIES IN MAHARASHTRA

Name of plants	Parts used	Assays	Antioxidant activities	Medicinal uses	References
Abrus precatorius	L, R, S*	FRAP, RP	Less	Severe vomiting, gastrointestinal bleeding, encephalopathy & arrhythmias, wounds caused by dogs, Jaundice	15
Achyranthes aspera	S	DPPH, OS	Medium	Wound healing, Rheumatism, Hypertension, Dysentery, Malaria fever, Diabetes	16, 17
Aegle marmelos	F, L	DPPH, FRAP	More	Chronic diarrhoea, dysentery, peptic ulcers, laxative for astringency, Thyroids	18
Alstonia scholaris	B, L, S	DPPH, ABTS, FRAP	More	Ulcers, Tumours, Asthma, Chest pain, cold, fever	19
Argemone Mexicana	W	DPPH, ABTS, H_2O_2	More	Chronic skin disease, Malaria, Constipation	20
Asparagus racemosus	R, T	DPPH, ABTS, FRAP	Medium	Hypertension, Insomnia	21
Bacopa monnieri	W	DPPH, SRSA	More	memory enhancer, Fever, neurological disorders, headache	22
Boerhaavia diffusa	F, L, R	DPPH, LPO, FRAP	More	Liver, gallbladder & Kidney disorder, Spleen, Dyspepsia, Jaundice, Menstrual disorder, Oedema, Anaemia, Gonorrhoea, Abdominal tumour	23
Butea monosperma	B, F, L	RP, ORAC, ABTS	Less	Leprosy, Skin diseases, Gout, Thirst sensation, Eye disorders	24
Camellia sinensis	B, L, S	DPPH, FRAP, ORAC, LPO	More	Arthritis, Skin itching, Parkinson & Alzheimer disease	25, 26
Cassia fistula	F, L, P, S	DPPH, RP, SRSA	Less	Biliousness, Chest pain, Throat trouble, Liver complaints	27
Commiphora wightii	F, L, S	ABTS, RP, TRAP	More	Hypercholesterolemia, Arthritis, Obesities, Rheumatism	28
Curculigo orchioides	R	DPPH, LPO, SRSA	More	Immune stimulant, Hepatic protective, Asthma, Jaundice,	29
Curcuma amada	L, R, S	DPPH, NO, FRAP, H_2O_2	Medium	Bronchitis, Biliousness, Hiccough, Itching	30
Datura metel	F, L, R, S*	DPPH, FRAP, ABTS	More	Toothache, Fever, Stomach pain, Dandruff & hair fall, Rheumatism	31, 32
Dioscorea bulbifera	L, R, T	NO, DPPH, SRSA	Medium	Asthma, Diabetes, Cough, Ulcers, Syphilis	33
Dioscorea oppositifolia	R, L, T	DPPH, ABTS	Less	Ulcer, Antiseptics, Abscesses, Apathies, Toothache	34
Eclipta alba	W	OS, H_2O_2, NO, FRAP, DPPH, RP	Less	Gastrointestinal, liver & respiratory disorders, Hair loss & greying of hairs, Spleen	35
Gmelina arborea	B, R	DPPH, NO, FRAP	More	Burning sensation, Fever, Urinary complaints, Colic pain, Constipation	36
Hemidesmus indicus	W	LPO, ABTS, H_2O_2	More	Syphilis, Nutritional disorder, Leprosy, Leucoderma	37
Jatropha curcas	L, R, S	DPPH, NO	More	Anticoagulant and anti-HIV activity, Toothache, sensitivity, Prevents from snake bite	38
Madhuca indica	B, L	DPPH, RP	Medium	Rheumatism, Diabetes, Piles, Eczema, Lactation	39, 40
Medicago polymorpha	F, F*	DPPH, ABTS	Medium	Dysentery, Skin plagues, Wounds, Kidney failure	41
Medicago sativa	S*	DPPH. ABTS, FRAP, LPO	Less	Eczema, Burn, Diuretic, Bleeding gums, High blood pressure, Gastritis	42
Nyctanthes arbour-tristis	F, L	DPPH, FRAP, H_2O_2, RP	Medium	Dyspepsia, Bronchitis, Glowing skin, Ring worm, Fever, Rheumatism	43, 44
Phyllanthus emblica	F	DPPH, ABTS, FTC, LPO	More	Ulcer, Hair growth, Memory enhancer, Snake venom neutralizer, Ophthalmic disorder,	45, 46

				Dental disorder, skin lightening	
Physalis minima	F, L	DPPH, RP	More	Appetizer, Antipyretic, Headache, Itching, Nausea, Vomiting	47, 48
Piper longum	F, R	DPPH, LPO	Medium	Respiratory infections, Bronchitis, Spleen, Constipation, Appetizer, Antidote	49
Pongamia pinnata	R, S*	ABTS, FRAP, FTC, H_2O_2	Less	Cleaning gums, Vaginal & skin infections, Ulcer, Gastric treatment	50
Rhynchosia minima	W	ABTS, DPPH, FRAP	Medium	Dysentery, Haemorrhoids, Cardiac diseases, Problem in uterus	51
Ricinus communis	L, R, S*	DPPH, NO, OS	More	Muscle ache, Gallbladder pain, Menstrual cramps, Sleeplessness, Expulsion of placenta, Bilharziasis	52, 53
Sesbania grandiflora	L	RP, OS, FRAP	Less	Fever, Smallpox, Nasal catarrh, Stomatitis, Leprosy	54, 55
Tamarindus indica	F, L, S*	LPO, RSA, FRAP, RP, DPPH	Medium	Snake venom inhibitor, Neutrophil disorder, Tumour, Malaria	56
Terminalia arjuna	B, L	DPPH, FRAP	More	Fractures, Hypocholesterolemic, Antifertility & anti-HIV activities	57, 58
Terminalia bellirica	B, S*	ABTS, RP, SRSA, DPPH	Medium	Dropsy, vomiting, ulcer, cough, Insomnia	59
Terminalia chebula	S*	DPPH, LPO, FTC, TEAC	More	Wound, ulcer, Leprosy, Inflammation, Cough	60
Tinospora cordifolia	F, L, R,S	DPPH, FRAP, LPO, NO, ABTS	More	Peptic ulcer disease, Fever, Syphilis, Boost the immune system, Hepatitis, Rheumatoid arthritis	61
Vitex negundo	L, S, S*	LPO, H_2O_2, FRAP, ABTS	More	Polycystic ovarian syndrome, Muscle pain, Tuberculosis, Skin diseases, Disorder in menstrual cycle	62
Withania somnifera	W	DPPH, FRAP, LPO,RP	More	Restorative tonic, stress, nerves disorder, aphrodisiac, Parkinson & Alzheimer's disease	63
Xanthium strumarium	F, R, S	DPPH	Less	Epilepsy, Fever, Cancer, Chest pain, High blood pressure, Leucoderma	64

(B- Bark, F- Flower, F*- Fruit, L- Leaves, P- Pulp, P*- Peel, R-Root, S- Stem, S*- Seed, T- Tuber, W- Whole plant).

TABLE 2: MEDICINAL PLANTS WITH ANTIOXIDANT ACTIVITIES IN TAMIL NADU

Name of plants	Parts used	Assays	Antioxidant activities	Medicinal uses	References
Acacia arabica	F, L, R, S*	LPO, H_2O_2	More	Cough, Wound healing, Sore throats, Muscle pain, irritation, Restricts blood loss	65
Achyranthus aspera	S	DPPH, OS	Medium	Wound healing, Rheumatism, Hypertension, Dysentery, Malaria fever, Diabetes	16, 17
Aloe vera	W	FRAP, ORAC, ABTS, DPPH	More	Wound healing, Dental plaque, Mouth ulcers, Constipation, Skin wrinkles, Genital herpes	66, 67, 68
Bacopa monnieri	W	DPPH, SRSA	More	memory enhancer, Fever	22
Bixa orellana	L, S*	DPPH, FRAP	More	Bronchitis, Sore throat, Eye inflammation, Hypertension	66, 69
Canna indica	F	DPPH	More	Dyspepsia, Dropsy, Antipyretic, Gonorrhoea	70
Cassia angustifolia	F, L	DPPH, FRAP	More	Weight loss, Irritable bowel syndrome, Haemorrhoids	71
Catharanthus roseus	F, L, R	DPPH, ABTS	More	Enteritis, Gastritis, Diarrhea, Loss of appetite, Chest pain, Tonsillitis	72
Cinnamomum zeylanicum	B, L	SRSA, LPO	More	Influenza, Menstrual cramps, Diarrhea, Gastric, Gastrointestinal upset	73
Coleus forskohlii	R	DPPH, NO, OS, H_2O_2	Medium	High blood pressure, Chest pain, Asthma, Erectile dysfunction, Obesity, Allergy, Blood	74

				clots	
Datura metal	F, L, R, S*	DPPH, FRAP, ABTS	More	Toothache, Fever, Stomach pain, Dandruff & hair fall, Rheumatism	31, 32
Geranium aconitifolium	L, R	DPPH, RP	Moderate	Reduce inflammation, Strengthen immune system, Reduce kidney, hair, skin damages	66, 75
Gloriosa superba	W	DPPH	More	Menstrual pain, Bradycardia, Convulsions, Hypotension, Sweating, Epilepsy	66, 76
Glycyrrhiza glabra	F, L, P*, R	ORAC, RP	More	Stomach ulcers, Paralysis, Sexual debility, Hyperpiesia	77
Lantana camara	F, L	DPPH, FRAP, ABTS	Medium	Asthma, Ulcer, High blood pressure, Bilious fever, Catarrhal infections, Eczema, Swellings of lymph nodes	78
Lantana rhodesiensis	F, F*, L, S, S*	FRAP, DPPH, NO, SRSA	More	Chicken pox, Measles, Ulcers, Eczema, Bilious fever, High blood pressure	79
Lawsonia inermis	B, F, L, S*	DPPH, FRAP, LPO	Less	Jaundice, Renal lithiases, Wound healing, Skin inflammation, Fever	80
Leonotis nepetifolia	W	DPPH, NO	Moderate	Dysmenorrhoea, Bronchial asthma	81
Magnifera indica	B, F, F*, L	DPPH, FRAP	More	Dysentery, Anaemia, Insomnia, Rheumatism, Toothache, Asthma, Constipation, Prevent cancer	82
Mentha piperita	W	FRAP, RP, ABTS	More	Muscle and nerve pain, Common cold, Indigestion, Depression related anxiety, Flatulence	66, 83
Mimosa pudica	F, L, R, S	DPPH, NO, FRAP, RP	More	Dysentery, Piles, Sinus, Urogenital disorders, Wound healing, Headache	84, 85
Occimum bacilicum	L	FRAP, SRSA	Moderate	Fever, Malaria, Dysentery, Catarrh	86
Ocimum sanctum	W	DPPH	More	Asthma, Malaria, Bronchitis, Dysentery, Skin diseases, Pneumonia, Cough	87
Oxalis corniculate	L, R, S, S*	FRAP, CUPRAC	More	Urinary tract infection, Traumatic infections, Enteritis, Diarrhoea, Influenza, Alzheimer disease	88
Phyllanthus amarus	W	ABTS, DPPH, FRAP	More	Problems in stomach, genitourinary system, liver, kidney and spleen. Gonorrhea, Menorrhagia	66, 89
Phyllanthus emblica	F*	DPPH, ABTS, FTC, LPO	More	Ulcer, Hair growth, Memory enhancer, Snake venom neutralizer, Ophthalmic disorder, Dental disorder, skin lightening	66, 90
Piper betle	L	DPPH, SRSA	More	Diabetes, Prevents from fungal diseases, Cough, Malaria, Asthma	91
Punica granatum	F*, L, P*, S*	FRAP, DPPH, OS	More	Digestive disorders, Skin disorders, Urinary infections, Arthritis, Sore throats, Cough	92, 93
Rhynchosia minima	W	ABTS, DPPH, FRAP	Medium	Dysentery, Haemorrhoids, Cardiac diseases, Problem in uterus	51
Ricinus communis	B, F, L	OS, H_20_2, ABTS, LPO	Moderate	Bilharziasis, Gallbladder pain, Sleeplessness, Chronic headache, Constipation	, 94
Saraca asoca	B, F, F*, L	DPPH, H_2O_2	More	Internal bleeding, Pimples, Menorrhagia, Dysfunctional uterine bleeding, Heavy flow of periods	95
Sesbania grandiflora	L	RP, OS, FRAP	Less	Fever, Smallpox, Nasal catarrh, Stomatitis, Leprosy	54, 55
Stevia rebaudiana	L, S*	FRAP, ABTS, NO, RP	Moderate	Blood pressure, Obesity, Diabetes	96, 97
Terminalia chebula	S*	DPPH, LPO, FTC, TEAC	More	Wound, ulcer, Leprosy, Inflammation, Cough	60
Thymus vulgaris	L	FRAP, DPPH	More	Gastro enteric and bronchopulmunary disorders	98

Tinospora cordifolia	W	DPPH, FRAP, ABTS, H_2O_2	More	Diabetes, High cholesterol, Fever, Gonorrhea, To boost the immune system, Syphilis, Blood cancer, Hepatitis, Rheumatoid arthritis	99
Vitex negundo	L, S, S*	LPO, H_2O_2, FRAP, ABTS	More	Polycystic ovarian syndrome, Muscle pain, Tuberculosis, Skin diseases, Disorder in menstrual cycle	62
Withania somnifera	W	DPPH, FRAP, LPO,RP	More	Restorative tonic, stress, nerves disorder, aphrodisiac, Parkinson & Alzheimer disease	63
Zamioculcas zamiifolia	R, L	DPPH, NO, LPO, H_2O_2	More	Appetizer, Diaphoretic, Complexion anodyne, Headache, Nasal sinusitis	100

(B- Bark, F- Flower, F*- Fruit, L- Leaves, P- Pulp, P*- Peel, R-Root, S- Stem, S*- Seed, T- Tuber, W- Whole plant).

DISCUSSION: Contagious conditions are the greatest problems all over the world; nearly 60 million people die every year, and medicinal plants like shrubs, herbs, and trees have been used to treat several human diseases for thousands of years because those have such types of Phytochemicals what'll produce a corporal action in a human body system. Considering the significance of this area, we have studied and observed the antioxidant properties of a total of approximately 100 medicinal plants, which are traditionally used in the Indian landmass for the treatment of various disorders; likewise, we can fight against COVID-19; also it can be determined by *in-vivo* as well as in-vitro assays, where *in-vitro* assays (generally used to screen antioxidant activities of plants) includes DPPH, FRAP, ABTS, LPO, RP methods. The present results offer supporting substantiation for the fruitful use of medicinal plants. Naturally, they retain a variety of remedial agents. Still, the properties depend on their nature.

The methods mentioned above are to be followed to evaluate antioxidant properties, which would be certifiably useful for pharmaceutical companies in drug making and mankind by utilizing plant extracts as home remedies. Nature is an incomparable source for building high phytochemical diversity, many of them possessing Intriguing natural conditioning and medicinal properties. Exploration regarding medicinal plants is an accentuated issue today. Medicinal plants are nature's gift to a human being to make a complaint-free healthy life.

CONCLUSION: This review article mainly focused on the medicinal properties of plants with the study of plant antioxidants. Plants have many bioactive compounds with high antioxidant and antimicrobial activity.

It can be concluded that the extracts of several plants' fruit, stem, bark, leaves, flowers, and seeds, and various methods have been used to evaluate the antioxidant activities. Selected medicinal plants from the region of Maharashtra and Tamil Nadu as shown in **Tables 1** and **2** have been proven to retain expensive antioxidant properties due to the presence of a huge amount of secondary metabolites similar to flavonoids, phenolic and these chemical compounds are also used as antimicrobial, antidiabetic and anticarcinogenic elements; which can help in further research works. It plays a significant role in our body to treat chronic diseases like Leprosy, stomach ulcers, cancer, heart, kidney & liver disorders, diabetes, *etc*. Generally, the human body is rich in endogenous antioxidants, the valuable substances we extract from plants have the proper abilities to reduce free radicals formations or to stop the damage issued by them. So for the health benefit understanding the free radicals of antioxidants gained by plants is most important. The discovery of antibiotics from medicinal plants is a real revolution to fight against infectious diseases by evaluating phytotherapeutic properties, which are widely used as Herbal remedies due to their cost-effectiveness and reduced harmful side effects. This study assures the importance of plants that could be interested in inventing a new drug. Therefore, in such situations, taking exogenous antioxidants is more beneficial. So as of today's generation, an amazing effort is being outlaid to find productive antioxidants for the treatment or precluding of free radical-mediated detrimental effects.

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