

# **Medicinal Plants: A Review**

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# Abstract

Medicinal plants have been utilized as a part of essentially all societies as a wellspring of medicine. Affirmation of the security, quality, and adequacy of therapeutic plants and natural products has now turned into a key issue in industrialized and in developing nations. The across the board utilization of home grown cures and healthcare preparations is depicted in the Vedas and the Bible. Medicinal plants have been utilized for a large number of years to flavour and preserve food, to treat wellbeing issue and to avoid illnesses including epidemics. The information of their healing properties has been transmitted throughout the hundreds of years within and among human groups. Lead compounds produced during secondary metabolism are typically in charge of the natural properties of plant species utilized all through the globe for different purposes, including treatment of irresistible infections. Right now, information on the antimicrobial activity of various plants, so far considered observational, have been scientifically confirmed, with the increasing number of reports on pathogenic microorganisms resistant to antimicrobials. Substances got from plants may possibly control microbial development in diverse circumstances and in the particular instance of ailment treatment, various studies have intended to depict the chemical composition of these plant antimicrobials and the mechanisms required in microbial development hindrance, either independently or connected with conventional antimicrobials.

#### Keywords: Traditional medicine; Medicinal plants; Phytomedicines; Plant extracts; Essential oils

#### Introduction

The term of therapeutic plants incorporates a different sorts of plants utilized as a part of herbalism and some of these plants have a medicinal activity. Medicinal plants are the "spine" of traditional medicine, which implies more than 3.3 billion individuals in the less developed nations use medicinal plants on a continuous basis [1-5]. These therapeutic plants think about as a rich source of ingredients which can be utilized as a part of medication synthesis and development. Other than that, these plants assume a basic part in the improvement of human cultures around the entire world. The Indian sub-continent has an extremely rich differing qualities of plant species in an extensive variety of biological communities. There are around 17,000 types of higher plants, of which roughly 8,000 species, are viewed as medicinal and utilized by town groups, especially tribal groups, or in conventional medicinal systems, for example, the Ayurveda [6-15].

The utilization of conventional medication and medicinal plants in most developing nations, as a basis for the support of good wellbeing, has been generally seen by UNESCO. Besides, an expanding dependence on the utilization of therapeutic plants in the industrialized societies has been followed to the extraction and development of many medications and chemotherapeutics

from these plants and in addition from conventionally utilized rural herbal medications. During the previous decade, conventional systems of medicine have turned into a point of worldwide significance. Current assessments recommend that, in numerous developing nations, a substantial extent of the population depends vigorously on conventional experts and medicinal plants to meet essential medicinal health care needs. In spite of modern medication might be accessible in these nations, herbal medicines (phytomedicines) have frequently kept up popularity for historical and social reasons [16-25].

Therapeutic plants every now and again utilized as crude materials for extraction of lead components which utilized in the synthesis of various medications. Like in case of, blood thinners, anti-microbial and anti-malarial prescriptions, contain ingredients from plants. Additionally, the active elements of taxol, vincristine, and morphine separated from foxglove, periwinkle, yew, and opium poppy, respective [26-30].

# **Future of Medicinal Plants**

Medicinal plants have a promising future on the grounds that there are about half million plants far and wide, and a large portion of them their therapeutic activities have not explore yet, and their medicinal activities could be conclusive in the treatment of present or future studies [31-40].

#### **Characteristics of Medicinal Plants**

- Synergic medicine: The elements of plants all interface at the same time, so their utilizations can supplement or harm others or kill their conceivable negative impacts. Support of official medicine. In the treatment of complex cases like tumor ailments the parts of the plants turned out to be exceptionally powerful.
- **Preventive medicine**: It has been demonstrated that the part of the plants additionally portrays by their capacity to keep the presence of a few diseases. This will help in the utilization of less chemical medications which will be utilized when the ailment is already present [41-50].

#### Significances of Medicinal Plants to Human Being

Medicinal plants have assumed a key part in the improvement of human society, for instance religions and distinctive ceremonies. A significant number of the present day drugs are produced indirectly from therapeutic plants, for instance ibuprofen. Numerous food crops have therapeutic impacts, for instance garlic. Medicinal plants are resources of new medications. It is evaluated there are more than 250,000 blossom plant species. Concentrating on medicinal plants comprehends plant poisonous quality and protect human and creatures from common toxic substances. Development and preservation of medicinal plants ensure biological diversity, for instance metabolic designing of plants. The medicinal impacts of plants are because of metabolites particularly secondary compounds created by plant species. Plant metabolites includes primary and secondary metabolites [51-60].

Phytotherapy is the utilization of plants or plant parts for therapeutic purposes (particularly plants that are not part of the typical eating regimen). Phytochemistry is the investigation of phytochemicals created in plants, describing the extraction, purification, detection, and structure of the huge number of secondary metabolic substances found in plants.

- Thin layer chromatography (TLC)
- Gel (column) chromatography)
- High performance of liquid chromatography (HPLC)

- Gas chromatography (GC)
- Mass spectrometry
- Nuclear magnetic resonance

#### **Plant Primary Metabolites**

Natural compounds produced in the plant kingdom have metabolic capacities vital for plant development and improvement produced in each plant. Include starches, amino acids, nucleotides, unsaturated fats, steroids and lipids.

#### **Plant Secondary Metabolites**

Organic compounds produced in plant kingdom don't have obvious capacities required in plant development and improvement. Produced in various plant families, in particular gatherings of plant families or in particular tissues, cells or developmental stages all through plant advancement. Incorporate terpenoids, uncommon nitrogen metabolite (counting, on-protein amino acids, amines, cyanogenic glycosides, glucosinolates, and alkaloids), and phenolics [61-65].

# Conclusion

In this way, it is a critical point for the open access journals to urge scientists and clinicians to work hard with a specific end goal to elucidate the fundamental lead compounds which can be separated from therapeutic plants.

Later and re-established enthusiasm for therapeutic plants coupled to improvements in information technology has fueled a blast in the reach and substance of electronic data concerning medicinal plants as a re-new well-being aid. As of late assessed various wellsprings of such data in traditional abstracting administrations and additionally in an assortment of online electronic databases. As an aftereffect of such advancements, access to indigenous people groups and societies concerning therapeutic plants are significantly encouraged. Moreover, the dynamic investment of such regular overseers and professionals of significant learning is ensured in the era of examination concentrating on screening software engineers managing the confinement of bioactive standards and the advancement of new medication [66-70].

# REFERENCES

- Tsabang N, Ngah N, Estella FT, et al. Herbal Medicine and Treatment of Diabetes in Africa: Case Study in Cameroon. Diabetes Case Rep. 2016;1:112.
- Nole T, Lionel TDW, Cedrix TFS, et al. Ethnomedical and Ethnopharmacological Study of Plants Used for Potential Treatments of Diabetes and Arterial Hypertension by Indigenous People in Three Phytogeographic Regions of Cameroon. Diabetes Case Rep. 2016;1:110.
- Panda T, Mishra N, Pradhan BK. A Folk Knowledge on Medicinal Plants Used for the Treatment of Skin Diseases in Bhadrak District of Odisha, India. Med Aromat Plants. 2016;5:262.
- 4. Eldahshan OA, Elsakka AMA, Singab AN. Medicinal Plants and Addiction Treatment. Med Aromat Plants. 2016;5:260.
- Karima N, Jasur S, Shaxnoza S. Storage Biologically Active Substances by Convection Drying Food and Medicinal Plants. J Food Process Technol. 2016;7:599.
- Maiti R, Rodriguez HG, Kumari A. Nutrient Profile of Native Woody Species and Medicinal Plants in Northeastern Mexico: A Synthesis. J Bioprocess Biotech. 2016;6:283.

- 7. Jerezano Alberto VD, Ríos Saúl A, Tepancal-Gomez E, et al. Some Traditional Medicinal Plants of North Region from Puebla, Mexico: Uses and Potential Pharmacological Activity of Rumex spp. Nat Prod Chem Res. 2016;4:223.
- Getasetegn M, Tefera Y. Biological Activities and Valuable Compounds from Five Medicinal Plants. Nat Prod Chem Res. 2016;4:220.
- Gupta A, Shah AP, Chaphalkar SR. Extraction of Proteases from Medicinal Plants and their Potential as Anti-Viral Targets. J Biotechnol Biomater. 2016;6:228.
- Norkulova K, Safarov J, Sultanova S. Research on Aerodynamics Separator for Medicinal Plants. J Food Process Technol. 2016;7:586.
- 11. Alothyqic N, Almalki M, Ebqa'ai M, et al. In Vitro Antibacterial Activity of four Saudi Medicinal Plants. J Microb Biochem Technol. 2016;8:83-9.
- 12. Kumar M. Rural Communities on Ethno Medicinal Plants, Uses and their Conservation. Med Aromat Plants. 2016;S3:e003.
- 13. Opinde HR, Gatheri GW, Nyamache AK. Antimicrobial Evaluation of Crude Methanolic Leaf Extracts from Selected Medicinal Plants Against Escherichia coli. J Bacteriol Parasitol. 2016;7:272.
- 14. Tiwari SS. Medicinal Plants-Perspectives and Needs. J Pharmacogn Nat Prod. 2016;2:e105.
- Bouyahya A, Abrini J, El-Baabou A, et al. Determination of Phenol Content and Antibacterial Activity of Five Medicinal Plants Ethanolic Extracts from North-West of Morocco. J Plant Pathol Microbiol. 2016;7:342.
- 16. Petropoulos AS. Wild Edible Medicinal Plants of the Mediterranean Basin. Med Aromat Plants. 2016;5:e173.
- Rachuonyo HO, Ogola PE, Arika WM, et al. Combined Effect of Crude Leaf Extracts of Selected Medicinal Plants against Selected Enteric Bacterial Pathogens and Candida albicans. J Antimicro. 2016;2:110.
- Khojasteh SMB, Khameneh RJ, Houresfsnd M, et al. A Review on Medicinal Plants Used for Improvement of Spermatogenesis. Biol Med (Aligarh). 2016;8:292.
- Rachuonyo HO, Ogola PE, Arika WM, et al. Antimicrobial Potency of Methanolic Leaf Extracts from Selected Medicinal Plants against Staphylococcus aureus. J Med Microb Diagn. 2016;5:219.
- 20. Tsabang N, Fongnzossie E, Donfack D, et al. Comparative Study of Epidemiological and Anthropological Aspects of Diabetes and Hypertension in Cameroon. Forest Res. 2016;5:165.
- 21. Ayuka F, Barnett R. Place Effects on Alcohol Consumption: A Literature Review. J Addict Res Ther. 2015;6:207.
- Arika WM, Ogola PE, Nyamai DW, et al. Mineral Elements Content of Selected Kenyan Antidiabetic Medicinal Plants. Adv Tech Biol Med. 2016;4:160.
- Hamza AA, Ksiksi TS, Balfaqh SA, et al. α-Glucosidase Inhibitory Activity of Common Traditional Medicinal Plants Used for Diabetes Mellitus. J Develop Drugs. 2015;4:144.
- 24. Hammadi D, Ahmed M, Boudjethia KW, et al. Ethnomedicinal Survey of Medicinal Plants Used in the Western Region of Algeria. Med Aromat Plants. 2015;5:221.
- 25. Hassan W, Rehman S, Noreen H, et al. Metallic Content of One Hundred Medicinal Plants. J Nutr Disorders Ther. 2015;5:177.
- 26. Mwonga KB, Waniki NENM, Dorcas YS, et al. Molluscicidal Effects of Aqueous Extracts of Selected Medicinal Plants from Makueni County, Kenya. Pharm Anal Acta. 2015;6:445.
- Yongabi KA, Okeke M. Spectrum of Systemic Yeast Infections in Leukemia Patients in Cameroon and Sensitivity of Isolates to Griseofulvin, Ketoconazole and Organic Extracts of Four Medicinal Plants. J Leuk. 2015;3:195.
- Shivakumar SP, Vidyasagar GM, Rajendar SDSR, et al. Documentation of Folkloric Knowledge on Medicinal Plants Used in the Treatment of Mouth Ulcers in Kodangal Mandal, Mahabubnagar District, Telangana, India. J Bioanal Biomed. 2015;07:174-9.

- 29. Garba S, Salihu L, Shoge M. Antidiarrhoeal Activities of Some Medicinal Plants. Med Chem. 2015;S2:001.
- 30. Dawood M, Efferth T. Medicinal Plants and DNA Methylation of Cancer. Med Aromat Plants. 2015;4:e161.
- 31. Harsha H, Aarti S. Quality Evaluation of Herbal Juice Developed from Traditional Indian Medicinal Plants Using Citrus limetta as Base. J Nutr Food Sci. 2015;5:396.
- Pagadala VK, Tsegaye B, Kebede N, et al. Significance of Traditional Medicinal Plants used for Treatment of Rabies at Ambo Town. Med Aromat Plants. 2015;4:207.
- 33. Kala CP. Medicinal Plants in Active Trade at Haridwar City of Uttarakhand State in India. Med Aromat Plants. 2015;4:204.
- Vunnava A, Motlakunta HB. Anthelminthic and Antibacterial Activity of Various Indians Medicinal Plants. Med Aromat Plants. 2014;3:167.
- 35. Banumathi B, Vaseeharan B. A Report on Medicinal Plants Used in Ethno Veterinary Practices of Toda Tribe in the Nilgiri Hills. J Veterinar Sci Technol. 2015;6:245.
- 36. Tsabang N, Yedjou CG, Tsambang LWD, et al. Treatment of Diabetes and/or Hypertension Using Medicinal Plants in Cameroon. Med Aromat Plants. 2015;S2:003.
- 37. Azwanida NN. A Review on the Extraction Methods Use in Medicinal Plants, Principle, Strength and Limitation. Med Aromat Plants. 2015;4:196.
- Hirdyani H. Development and Quality Evaluation of RTS (Ready to Serve) Beverages Made from Traditional Indian Medicinal Plants. J Nutr Food Sci. 2015;S13:004.
- Kumar A, Mitra M, Adhikari BS, et al. Depleting Indigenous Knowledge of Medicinal Plants in Cold-Arid Region of Nanda Devi Biosphere Reserve, Western Himalaya. Med Aromat Plants. 2015;4:195.
- 40. Chatterjee S, Bhakat M, Keshri JP, et al. Medicinal Plants Old Wine in a New Bottle. Med Aromat Plants. 2015;S:e002.
- Prakash P, Gupta N. Therapeutic uses of Ocimum sanctum Linn (Tulsi) with a note on eugenol and its pharmacological actions: a short review. Indian J Physiol Pharmacol. 2005;49:125-31.
- 42. Rai V, Mani UV, Iyer UM. Effect of Ocimum sanctum Leaf Powder on Blood Lipoproteins, Glycated Proteins and Total Amino Acids in Patients with Non-insulin-dependent Diabetes Mellitus. J Nutr Enviro Med. 1997;7:113-8.
- Sethi J, Sood S, Seth S, et al. Evaluation of hypoglycemic and antioxidant effect of Ocimum sanctum. Indian J Clin Biochem. 2004;19:152-5.
- 44. Devi PU, Ganasoundari A. Modulation of glutathione and antioxidant enzymes by Ocimum sanctum and its role in protection against radiation injury. Indian J Exp Biol. 1999;37:262-8.
- 45. Sharma P, Kulshreshtha S, Sharma AL. Anti-cataract Activity of Ocimum Sanctum on Experimental Cataract. Indian J Pharmacol. 1998;30:16-20.
- 46. Khogare DT, Lokhande SM. Effect of Tulsi (Ocimum Sanctum) on Diabetes mellitus. Indina Streams Res J. 2011;1:189-91.
- Ody P. London: Dorling- Kinderesly Extraction and quantification of sterols from Tribulusterrestras, Sidaacutaburm F. and Tridaxprocumbens L. Int J Curr Pharma Res. 2000;5:95-7.
- 48. Mowrey DB, Clayson DE. Motion sickness, ginger, and psychophysics. Lancet. 1982;1:655-7.
- 49. Kobayashi M, Ishida Y, Shoji N, et al. Cardiotonic action of [8]-gingerol, an activator of the Ca++-pumping adenosine triphosphatase of sarcoplasmic reticulum, in guinea pig atrial muscle. J Pharmacol Exp Ther. 1988;246:667-73.
- Janes ME, Nannapaneni R, Johnson MG. Identification and characterization of two bacteriocin-producing bacteria isolated from garlic and ginger root. J Food Prot. 1999;62:899-904.
- Sogi DS, Singh S. Studies on bitterness development in Kinnow juice ready-to-serve beverage, squash, jam and candy. J Food Sci Technol. 2001;38:433-8.

- 52. Premi BR, Lal BB, Joshi VK. Distribution pattern of bittering principle in Kinnow fruits. J Food Sci Technol. 1994;31:140-1.
- 53. Room A. A dictionary of true etymologies. London: Routledge & Kegan Paul; 1986.
- 54. Raichlen S. Small citruses yield tart juice, aromatic oils, big, fresh taste. Baltimore: The Baltimore Sun; 1992.
- 55. de Carvalho JM, Maia GA, de FigueredoRW. Development of a blended non-alcoholic beverage composed of coconut water and cashew apple juice containing caffeine. J Food Qual. 2007;30:664-81.
- 56. Rangana S. Handbook of analysis and quality control of fruit and vegetable products. 11th ed. New York: McGraw Hill Publishing Co. Ltd; 2010. p. 1112.
- 57. APHA. Recommended methods for the microbiological examination of food. New York: American Public Health Association Inc.; 1967. p. 55-9.
- 58. Amerine MA, Pangbron RM, Rossler EA. Principles of sensory evaluation of food. New York: Acadamic Press; 1965.
- 59. Jan A, Masih D. Development and quality evaluation of pineapple juice blend with carrot and orange juice. Int J Sci Res Publ. 2012;2(8):1-8.
- 60. Deka BC, Sethi V. Preparation of mixed fruit juice spiced RTS beverages. Indian Food Packer. 2001;42:58-61.
- 61. Deka BC. Preparation and storage of mixed fruit juice spiced beverage [PhD Thesis]. New Delhi: Indian Agricultural Research Institute; 2000.
- 62. Simsek M. A study on selection and identification of table fig types in east edge of firat river. Asian J Anim Vet Adv. 2011;6:265-73.
- 63. Mishra P, Verma M, Mishra S, et al. Studies of development of ready to eat amla chutney and its preservation by using class one preservative. American J Food Tech. 2011;6:244-52.
- Majumdar TK, Wadikar DD, Bawa AS. Effect of storage on physicochemical, microbiological and sensory quality of bottleguard basil juice. American J Food Tech. 2011;6:226-34.
- Gao J, Rupasinghe HPV. Nutritional, Physicochemical and Microbial Quality of Ultrasound-Treated Apple-Carrot Juice Blends. Food Nutr Sci. 2012;3:212-8.
- 66. Venugopal R, Liu RH. Phytochemicals in diets for breast cancer prevention: The importance of resveratrol and ursolic acid. Food Sci Hum Wellness. 2012;1:1-13.
- 67. Willcox BJ, Willcox DC, Todoriki H, et al. Caloric restriction, the traditional okinawan diet, and healthy aging: The diet of the world's longest-lived people and its potential impact on morbidity and life span. Ann N Y Acad Sci. 2007;114:434-55.
- 68. Willcox DC, Willcox BJ, Todoriki H, et al. The Okinawan diet: health implications of a low-calorie, nutrient-dense, antioxidant-rich dietary pattern low in glycemic load. J Am Coll Nutr. 2009;28:500S-16S.
- 69. Mukherjee PK, Maity N, Nema NK, et al. Bioactive compounds from natural resources against skin aging. Phytomedicine. 2011;19:64-73.
- 70. Vongsak B, Sithisarn P, Mangmool S, et al. Maximizing total phenolics, total flavonoids contents and antioxidant activity of Moringaoleifera leaf extract by the appropriate extraction method. Ind Crops Prod. 2013;44:566-71.