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Review Article

## A review on potential medicinal herbs as health promoters

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### Abstract

Nature has been a source of medicinal agents for thousands of years and a moving number of modern drugs have been isolated from natural sources they have plays an important role in the treatment and management of different diseases. The practice of herbal medicine has existed since prehistoric times as the primary source of medicine. In recent technology has very much advanced, herbal medicines still show and are finding exceptional acceptance in both the developing and the developed countries due to their natural origin and lesser side effects. Traditional herbal remedies as alternative medicine play a significant role. Ginger has an Antiviral effect, Antioxidant effect & Anti-inflammatory effect given. Garlic is an ayurvedic medicinal herb that has been widely used as a medication and as a taste enhancer of the food. In traditional remedies, coriander was used for the relief of gastrointestinal conditions. Turmeric shows different biological activities such as Anti-inflammatory, Anti-viral, Antioxidant, anti-cancer, Anti-bacterial, Antiarthritis, Anti-diabetic, Fennel shows carminative and stimulant activities as well as spasmolytic activity due to its volatile and non-volatile compounds. Cardamom is used as a home remedy it helps cure various ailments like indigestion, nausea, headache, etc. Clove is a flavouring agent, antibacterial, stimulant, carminative, fragrant, and antiseptic. It's also used as an antiemetic and an anodyne. Dentists use clove oil to sterilize root canals and as an oral anesthetic. Cinnamon is used in coughs and colds, In brief, the information on medicinal herbs will be helpful to create more interest in this medicinal species by defining novel pharmacological and clinical applications and it may be helpful in developing new drug formulations in the future.

**Keywords:** Medicinal herbs, health, Ginger, Garlic, Coriander, Turmeric, Clove, Cinnamon, Fennel, Cardamom

### Introduction

In ancient times man gathered the natural remedies information based upon his/her knowledge and belief for healing purposes. Now days popularly improve the uses of medicinal herbs in human life because natural plants have less side effects or no side effects. The knowledge of herbal medicine was passed down from one generation to next generation. Normally the woman of the house was well known the uses of medicinal herbs for healing purpose and would act as the family's physician not only to treat illnesses but also to prepare various herbal wellness tonics and other remedies. The practice of herbal medicine has existed since prehistoric times as the primary form of medicine. In this time where the technology has very much advanced, herbal medicines still show and finding herbal medicine exceptional acceptance in both the developing and the developed countries due their natural origin and less adverse effects.

The traditional herbal remedies as alternative medicine play a significant role in India, where it forms a part of the culture and beliefs of the indigenous population and also features significantly in primary health care. Botanicals or phytomedicines have always been a major component of traditional systems of healing in developing countries, which have also been an integral part of their history and culture in the ancient Indian system of medicine, Ayurveda and Siddha are such examples. In brief, the information of medicinal herbs will be helpful to create more interest towards this medicinal species by defining novel pharmacological and clinical applications and it may be useful in the development of new formulations of medications in the future.

Nature has been a source of medicinal agents for thousands of years and a notable number of modern drugs have been isolated from natural sources that play a vital role in treatment of diseases.<sup>1,2</sup>

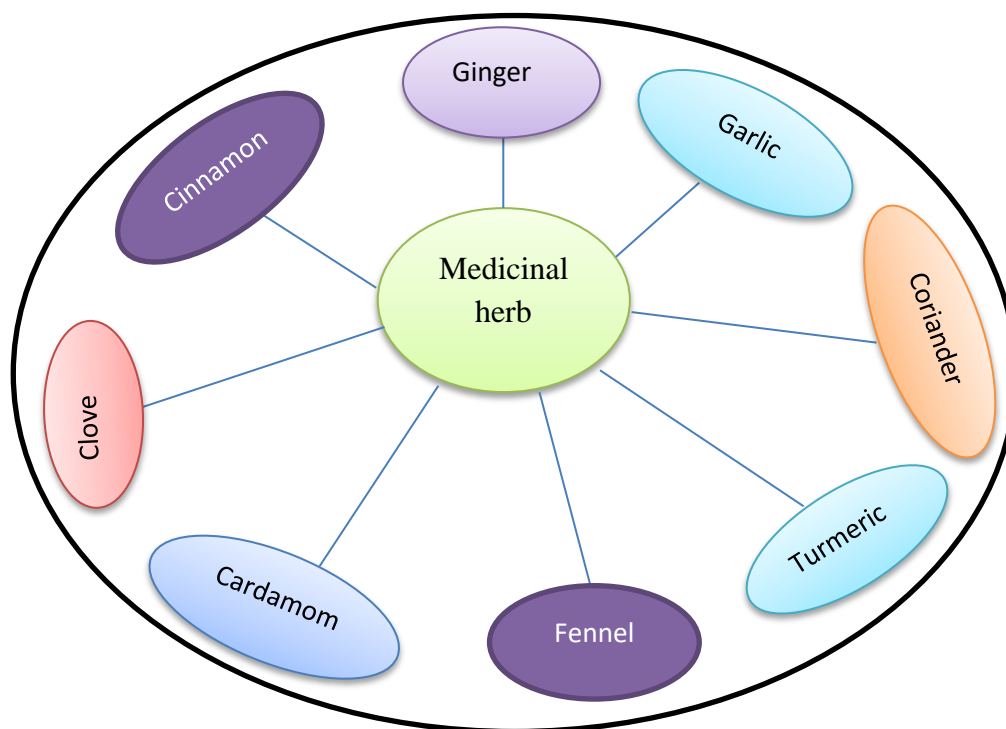


Figure 1: Health promoting medicinal herbs

## 1. Ginger

Rhizome of *Zingiber officinale* is widely used for medicinal purposes globally because of its ethno-medicinal and nutrient value. Rhizome of *Zingiber officinale* (Ginger) is used for medicinal purposes. In the Ayurveda literature highlight administration of ginger in both of communicable and non-communicable diseases.



Figure 2: Ginger

The pharmacological activity of *Zingiber officinale* Antiviral effect, Anticancer effect, Antioxidant effect & Anti-inflammatory effect. It is also used for loss of appetite. Also, ginger is applicable for mal-absorption conditions and digestive diseases. Ginger also effective in viral infections and revitalizing the body during disease conditions according to both Ayurveda and modern concepts through enhancing appetite, immunity and re-boosting weakened physiological functions of the human body. Active phytoconstituents present in ginger such as Zingerole, Zerumbone, 6-shogaol and 6-gingerol are responsible for upgrading enzyme actions and balancing circulation through regenerating the body with physical restrengthening.<sup>2,3</sup>

## 2. Garlic

Garlic (*Allium sativum*) is a member of the Liliaceae family and is also known as Poor Man's Treacle. Garlic is a traditionally cultivated plant and it is widely used in day-to-day life in cooking foods and used as a folklore medicine throughout human history.



Figure 3: Garlic

Garlic is an herb that has been widely used as medication and as the taste enhancer of the food. Garlic is one of the medicinal herb, which have effects on reducing the risk of cancer. Many studies have shown its effects not only on carcinomas, but also show effects on the cardiovascular system and immune system. Functions of the each constituent of the garlic were studied to know exactly, which constituent has got beneficial effect. Active phytoconstituents present in garlic such as volatile oil with sulphur-containing compounds richly like Ajoene, Alliin and Allicin and it also content enzymes such as peroxidase, myrosinase and allinase other compounds like geraniol  $\alpha$ -phellandrene,  $\beta$ - phellandrene, linalool and citral. It also contains at least 33 sulfur compounds and minerals like calcium, magnesium germanium, copper, iron, potassium, selenium zinc and vitamin A, vitamin B1 and vitamin C.<sup>4,5,6</sup>

### 3. Coriander

The coriander plant is also known as Dhanya in Sanskrit. Coriander obtained from the plant of *Coriandrum sativum* (L) belonging to the family Umbelliferae. The green leaves of coriander are used as herbal flavoring in the preparation of salads and a variety of traditional foods.



Figure 4: Coriander

The essential oil constitutes approximately 1% of the coriander fruit and is among the world's top 20 essential oils. It is used in perfumes, cosmetics, herbal remedies, and flavourings for alcoholic beverages. In traditional remedies, coriander was used for relief of gastrointestinal conditions, although other historical uses included as an aphrodisiac, a remedy for respiratory system. It is assumed that every part of the plant has different nutritional and medicinal values; thus, it was traditionally consumed in different areas. Particularly, coriander was used in India for relieving GIT discomfort, respiratory, and urinary illnesses.

Coriander seed and herb essential oils have been actively studied for their chemical composition and biological activities including antimicrobial, antioxidant, hypoglycemic, hypolipidemic, analgesic, anti-inflammatory and anticonvulsant.<sup>7, 8, 9, 10</sup>

### 4. Turmeric

Turmeric is a popularly used Indian rhizomatous medicinal plant. Turmeric is a spice that has gotten a lot of attention from both the medical and cooking worlds. Turmeric is a rhizomatous herbaceous herb (*Curcuma longa*) of the ginger family (Zingiberaceae)

The medicinal benefits of turmeric due to the presence of active phytoconstituents called curcuminoids. (Curcumin, Demethoxycurcumin (DMC), and Bisdemethoxycurcumin (BDMC))



Figure 5: Turmeric

It shows different biological activities such as Anti-inflammatory, Anti-viral, Anti-oxidant, Anticancer, Antibacterial, Anti-asthmatic, Antiarthritis, Anti-diabetic, Antivenom, Antiobesity, Wound-healing, in depression and anxiety

and other activities. Turmeric has been generally used as a medical herb due to its antioxidant, anti-inflammatory.<sup>11, 12, 13, 14</sup>

### 5. Fennel

Many countries have used its aromatic fruits as a culinary spice. Fennel is also known as Badishep in Marathi language. Fennel obtained from the plant of *Foeniculum vulgare* Mill. belonging to the family Apiaceae. In Asian countries, it is also a widely used medicinal and economic plant. The herb has many cooking and traditional medicine uses. Fennel herbal tea is a generally household remedy for the treatment of a variety of symptoms of the GIT and RTI. Fennel shows carminative and stimulant activities as well as spasmolytic activity due to its volatile and nonvolatile compounds.

It is given to treat various conditions such as rheumatism, cold pain and stomach. It also shows analgesic, anti-inflammatory and antioxidant activities. Fennel is used in various traditional systems of medicine like in the Ayurveda, Unani, and Siddha.<sup>15, 16, 17, 18</sup>



Figure 6: Fennel

### 6. Cardamom

Cardamom is a spice that originated in India, Nepal, and Bhutan. It is obtained from the plant of *Elettaria cardamomum* belongs to the family of Zingiberaceae. There are two main subspecies of cardamom *Elettaria* which is called green or true cardamom, and *Amomum*, which stands for black white, or red cardamom. Cardamom used as a home remedy it helps cure various ailments like indigestion, nausea, headache, etc. Cardamom is the world's third most costly spice and is known as the "Queen of Spices."



Figure 7: Cardamom

The health benefits of cardamom include gastrointestinal protection, cholesterol control, control of cancer, relief from cardiovascular problems, and improvement of blood circulation in the body. Cardamom traditionally believed to possess aphrodisiac properties. Not only is cardamom



regarded as an aphrodisiac, but it is also believed to possess the cure for impotence and premature ejaculation. It is useful for curing dental diseases and urinary tract infections (cystitis, nephritis, and gonorrhoea).<sup>19, 20</sup>

## 7. Clove

Clove is commonly known as "lavang". Clove (*Syzygium aromaticum*) a valuable spice, *Syzygium* is the largest genus of flowering plants belongs to the Mirtaceae family and was used as a preserving food and medicine for centuries due to its antibacterial and antioxidant properties. Clove is a flavouring agent, antibacterial, stimulant, carminative, fragrant, and antiseptic. It's also used as an antiemetic and an anodyne.



Figure 8: Clove

Dentists use clove oil to sterilise root canals and as an oral anaesthetic. Clove is used to cure diarrhoea, intestinal worms, and other gastrointestinal issues because it kills intestinal parasites and has wide antibacterial properties against fungus and bacteria. Toothaches can be relieved with clove oil. Eating cloves is considered to be aphrodisiac, and a few drops of the oil in water will reduce vomiting. In tiny quantities, eugenol is also used as a local anaesthetic. Peristalsis is stimulated by the oil, which is both a potent germicide and a stimulating expectorant for bronchial issues. Alkalies and aromatics benefit from the infusion and Clove water.<sup>21, 22, 23, 24, 25</sup>

## 8. Cinnamon

Cinnamon is a spice derived from the inner bark of several Cinnamomum tree species. Cinnamon is mostly used as an aromatic condiment and flavouring addition in a number of cuisines, including sweet and savoury dishes, breakfast cereals, snack foods, tea, and traditional foods. It's made from the bark of several Cinnamomum tree species and processed into a powder for use as a spice. Cinnamon usually grows in humid tropical evergreen rainforest conditions with well-drained, sandy soil rich with humus. Cinnamon has a wide range of applications in cuisines, and is typically used in both savoury and sweet foods. Cinnamon's antidiabetic action may be mediated via inhibiting the activities of  $\alpha$ -amylase,  $\alpha$ -glucosidase, and lipase. Cinnamon oil is used in Ayurvedic medicine for rheumatism, painful joints, and stiffness.



Figure 9: Cinnamon

It's also used to treat toothaches and bleeding gums. Cinnamon is used in Ayurvedic medicine to treat respiratory and urinary disorders. For coughs and colds, it's a good addition to tea, and it's also sometimes used in steam inhalations for respiratory problems. Cinnamon is the healthiest and most nutritious spice available. Due to the presence of active components, it has special health and healing properties. Eating Cinnamon may also provide health benefits. 1. Lowers Cholesterol: Cinnamon has been shown to reduce LDL (Low Density Lipoprotein) or "bad" cholesterol, as well as triglycerides and total cholesterol. 2. Treats Type 2 Diabetes by lowering blood sugar levels.<sup>26</sup>

## Conclusion:

In recent technology has very much advanced, herbal medicines still show and are finding exceptional acceptance in both the developing and the developed countries due to their natural origin and lesser side effects. Traditional herbal remedies play an important role in alternative medicine. Ginger has an Antiviral effect, Antioxidant effect & Anti-inflammatory effect given. Garlic is an ayurvedic medicinal herb that has been widely used as a medication and as a taste enhancer of the food. In traditional remedies, coriander was used for the relief of gastrointestinal conditions. Turmeric shows different biological activities such as Anti-inflammatory, Anti-viral, Anti-oxidant, anti-cancer, Antibacterial, Antiarthritis, Anti-diabetic, Fennel shows carminative and stimulant activities as well as spasmolytic activity due to its volatile and nonvolatile compounds. Cardamom is used as a home remedy it helps cure various ailments like indigestion, nausea, headache, etc. Clove is a flavouring agent, antibacterial, stimulant, carminative, fragrant, and antiseptic. It's also used as an antiemetic and an anodyne. Dentists use clove oil to sterilize root canals and as an oral anesthetic. Cinnamon is used in coughs and colds, In brief, the information on medicinal herbs will be helpful to create more interest in this medicinal species by defining novel pharmacological and clinical applications and it may be helpful in developing new drug formulations in the future.

## References:

- Cragg GM, Newman DJ. Medicinal for the Millennia. Annals of the New York Academy of Sciences. 2001; 953:3-25. <https://doi.org/10.1111/j.1749-6632.2001.tb11356.x>
- Gamage K, Dissanayake C, Angoda W, Waliwita LC, A Review on Medicinal Uses of Zingiber officinale (Ginger), International Journal of Health Sciences and Research, 2020; 10(6).
- Potential health benefits and scientific review of ginger Najim A. Jabir Al-Awwadi College of Pharmacy, Thi-Qar University, Iraq. 2017; 9(7):111-116. <https://doi.org/10.5897/JPP2017.0459>
- Thyagaraju K, Divya BJ et al The role of allium sativum (garlic) in various diseases and its health benefits: a comprehensive review Int. J. Adv. Res. 5(8):592-602. <https://doi.org/10.21474/IJAR01/5094>
- Adaki S, Adaki R et.al. "Garlic: Review of literature" October 2014, Indian Journal of Cancer 2014; 51(4):577 <https://doi.org/10.4103/0019-509X.175383>
- Eiaz LCS, Woong and Eiaz A, Allium vegetables and stomach cancer risk in China. Experimental Oncology, 2003; 23:93.
- Hayes JE, Feeney EL, Allen AL. Do polymorphisms in chemosensory genes matter for human ingestive behavior? Food Qual Prefer. 2013; 30:202Y216. <https://doi.org/10.1016/j.foodqual.2013.05.013>
- Eriksson N, Wu S, Do C, et al. A genetic variant near olfactory receptor genes influences cilantro preference. Flavour. 2012; 1:22Y29. <https://doi.org/10.1186/2044-7248-1-22>

9. Knaapila A, Hwang LD, Lysenko A, et al. Genetic analysis of chemosensory traits in human twins. *Chem Senses*. 2012; 37:869Y881. <https://doi.org/10.1093/chemse/bjs070>
10. Laribi, B.; Kouki, K.; M'Hamdi, M.; Bettaieb, T. Coriander (*Coriandrum sativum* L.) and its bioactive constituents. *Fitoterapia*. 2015; 103:9-26. <https://doi.org/10.1016/j.fitote.2015.03.012>
11. Priyadarsini K.I. The chemistry of curcumin: From extraction to therapeutic agent. *Molecules*. 2014; 19:20091-20112. <https://doi.org/10.3390/molecules191220091>
12. Aggarwal BB, Kumar A and Bharti AC: Anticancer potential of curcumin. preclinical and clinical studies. *Anticancer Research*. 2003; 23(1/A):363-398
13. Rathore S, Mukim M, Curcumin: A Review for Health Benefits, *International Journal of Research and Review* 2020; 7(1).
14. Lestari M.L., Indrayanto G. Curcumin. *Profiles Drug Subst. Excip. Relat. Methodol*. 2014; 39:113-204. <https://doi.org/10.1016/B978-0-12-800173-8.00003-9>
15. Tanira, M.O.M., Shah, A.H., Mohsin, A., Ageel, A.M. and Qureshi, S. Pharmacological and toxicological investigations on *F. vulgare* dried fruit extract in experimental animals. *Phytother Res* 1996; 10:33-36. [https://doi.org/10.1002/\(SICI\)1099-1573\(199602\)10:1<33::AID-PTR769>3.0.CO;2-L](https://doi.org/10.1002/(SICI)1099-1573(199602)10:1<33::AID-PTR769>3.0.CO;2-L)
16. Raffo, A., Nicoli, S. and Leclercq, C. Quantification of estragole in fennel herbal teas: Implications on the assessment of dietary exposure to estragole. *Food Chem Toxicol* 2011; 49:70-375. <https://doi.org/10.1016/j.fct.2010.11.011>
17. Merghem M, Dahamna S, In-Vitro Antioxidant Activity and Total Phenolic Content of *Ruta montana* L. Extracts, *Journal of Drug Delivery and Therapeutics* 2010; 10 (2):69-75 <https://doi.org/10.22270/jddt.v10i2.3919>
18. Choi, E.M., Hwang, J.K. Anti-inflammatory, analgesic and antioxidant activities of the fruit of *Foeniculum vulgare*. *Fitoterapia* 2004; 75(6):557-65 <https://doi.org/10.1016/j.fitote.2004.05.005>
19. Mays Hadi Jebur, Ilham, A. Bnuyan, Amean, A. Yasri and Nada Khazal Kadhimi Hindi. Antimicrobial Effect of Seed Extracts, leaves and Crude oil of Cardamom (*Elettaria cardamomum*) against different types of Bacteria in Hilla City, Iraq; *World Journal of Pharmaceutical Research*; 2014; 3(3).
20. Bina Rani, Renu Saraswat et.al, Cardamom (*Elettaria cardamomum*): A Spice of Prominent Healthcare, *J. Biol. Chem. Research*. 2018; 35(1):194-199,
21. Cock IE, Cheesman M. (2018). Plants of the genus *Syzygium* (Myrtaceae): A review on ethnobotany, medicinal properties and phytochemistry. *Bioactive Compounds of Medicinal Plants*. Ed Goyal MR, Ayeleso A. Apple Academic Press, USA
22. Sofia PK, Prasad R, Vijay VK, Srivastava AK. Evaluation of antibacterial activity of Indian spices against common foodborne pathogens. *Int J Food Sci Technol*. 2007; 42(8):910-915. <https://doi.org/10.1111/j.1365-2621.2006.01308.x>
23. Dorman HJ, Deans SG. Antimicrobial agents from plants: antibacterial activity of plant volatile oils. *J Appl Microbiol*. 2000; 88(2):308-316. <https://doi.org/10.1046/j.1365-2672.2000.00969.x>
24. Burt SA, Reinders RD. Antibacterial activity of selected plant essential oils against *Escherichia coli* O157:H7. *Lett Appl Microbiol*. 2003; 36(3):162-167. <https://doi.org/10.1046/j.1472-765X.2003.01285.x>
25. Pérez-Conesa D, Mc Landsborough et al., Inhibition and inactivation of *Listeria monocytogenes* and *Escherichia coli* O157:H7 colony biofilms by micellar-encapsulated eugenol and carvacrol. *J Food Prot. IJCRT* 2006; 69(12):2947-2954. <https://doi.org/10.4315/0362-028X-69.12.2947>
26. Vangalapati M, Sree Satya N, Prakash S. Et al., A Review on Pharmacological Activities and Clinical effects of Cinnamon Species, *Research Journal of Pharmaceutical, Biological and Chemical Sciences*, ISSN: 0975-8585