



ISSN (E): 2320-3862
ISSN (P): 2394-0530
NAAS Rating: 3.53
JMPS 2018; 6(3): 116-122
© 2018 JMPS
Received: 22-03-2018
Accepted: 24-04-2018

Anupam KR Sachan
Dayanand Dinanath College,
Institute of Pharmacy,
Ramaipur, Kanpur Nagar,
Uttar Pradesh, India

Sunil Kumar
Dayanand Dinanath College,
Institute of Pharmacy,
Ramaipur, Kanpur Nagar,
Uttar Pradesh, India

Kiran Kumari
Dayanand Dinanath College,
Institute of Pharmacy,
Ramaipur, Kanpur Nagar,
Uttar Pradesh, India

Deepti Singh
Dayanand Dinanath College,
Institute of Pharmacy,
Ramaipur, Kanpur Nagar,
Uttar Pradesh, India

Correspondence
Anupam Kr. Sachan
Dayanand Dinanath College,
Institute of Pharmacy,
Ramaipur, Kanpur Nagar,
Uttar Pradesh, India

Medicinal uses of spices used in our traditional culture: World wide

Anupam KR Sachan, Sunil Kumar, Kiran Kumari and Deepti Singh

Abstract

From older times, spices had played a vital role in the lifestyle of people from certain parts of the world. Herbs and spices have been used for generations by humans as food and to treat ailments. Bio-molecules in the plants play a crucial role in health maintenance and promotion. They have served numerous roles through history, including as coloring agents, flavoring agents, preservatives, food additives and medicine. The active photochemical derived from these spices have provided the molecular basis for these actions. There are several medicinal uses of spices in our daily life, many spices are used in kitchen and have certain medicinal activity like purgative, laxative, expectorant, carminative, diuretic etc. Since ancient time and till today spices are used for many purposes medicinally. Spices such as turmeric, fenugreek, mustard, ginger, onion and garlic have a wide variety of bio functions and their additive or synergistic actions are likely to protect the human body against a variety of insults. Traditionally spices, as part of the diets, have holistic effects on human health.

Keywords: herbs and spices, food, medicine, health

Introduction

In whole world, India is the most recognized country for the spices and traditional medicine; these are having a wide range of physiological and pharmacological properties. A spice is a dried seed, fruit, root, bark or flower of a plant or a herb used in small quantities for flavor, color or as a preservative. Moreover, for people of the world, spices stimulate appetite and create visual appeals to food. All types of spices were use from the ancient time in our kitchen for daily so they fulfill the body requirements on routine basis. Many of these substances are also used in traditional medicines. Globalization has made these spices easily available, and increasing their popularity. This chapter reviews the traditional uses of selected spices. In addition to making food taste good, culinary spices have been used as food preservatives and for their health-enhancing properties for centuries. Spices are functional foods; those can be demonstrated to have a beneficial effect on certain target functions in the body beyond basic nutritional requirements. The aim of this work is to review the nutritional and health benefits of some traditional spices mostly used in India.

Cloves

Its botanical name *Syzygium aromaticum*, or *Eugenia aromaticum* or *Eugenia caryophyllata*, It is a precious and valuable spice of the world, the part used is basically the dried aromatic buds of flower of a tree in the family of Myrtaceae. Cloves flower buds are mainly found in Indonesia and it's used as a spice in cuisine all around world [1]. The name derives French "clou," (meaning "nail") as the buds vaguely similar small irregular nails in shape [2]. This spice is used in Chinese medicine, Ayurveda, and Western herbalism and dentistry, where the essential oil is used as an anodyne (painkiller) for dental emergencies [3]. Cloves action also reported as analgesic property, anesthetic action, antibacterial property, antiparasitic action, antidotal property, antioxidant action, antiperspirant action, antiseptic property, carminative action, deodorant, digestive disorders, rubefacient action, stimulant property, stomachic action [4, 5].

Cardamom

Cardamom (Zingiberaceae) is widely used spice and it is also used as flavouring agent. It contain two genera called *Elettaria* and *Amomum*. Green colour cardamom is well known as elaichi in Marathi, Hindi and Urdu in South Asia. In Telugu and Tamil it is well known as

elakkaya and elam respectively. All species of cardamom are used as kitchen cooking spices. It also helpful in flatulent indigestion and to stimulate the appetite in people with anorexia [6]. In Ayurveda it is well known for carminative property, diuretic action, cough relive, colds and cardiac stimulation. Traditionally it used against kidney and urinary disorders and also having gastrointestinal protective property. Cardamom oil having anti-inflammatory and antibacterial property [7]. In India, green cardamom (*A. subulatum*) have widely used to treat infections against teeth and gums, to overcome treat throat trouble, congestion of the lungs and pulmonary tuberculosis, asthma, heart disease, inflammation of the eyelids and digestive disorders. Nasal preparation for cold is prepared by mixing cardamom with neem and camphor [8]. Cardamom infusion used as a gargle to relieve sore throats. It is reported as an antidote for both snake and scorpion venom and also used for food poisoning. In Chinese it is also traditionally used to treat stomachache disorders, constipation problem, dysentery in children, and other digestion related problems. The pods of Cardamom, also effective when it is used as fried and mixed with mastic and milk, are effective against bladder problems [9]. Cardamom seeds are well known to be an aphrodisiac property.

Coriander

Coriandrum sativum L. (Umbelliferae) is originated to region of southwestern Asia and North Africa and known as cilantro, cilantro, Chinese parsley, Mexican parsley, Arab parsley, Dhania and Yuen sai. Traditionally it is used in infection related to digestive problem, respiratory and urinary systems and having stimulant action [10]. The coriander plant is highly recommended for anxiety and insomnia in Iranian folk medicine, very common in Mexican diet, usually consumed uncooked, the oil of coriander also having an antimicrobial property and as a natural fragrance in perfumery industry. Coriander also called as “Maadnousse” in Morocco and well recommended for urethritis, cystitis, urinary tract infection, urticaria, rash, burns, sore throat, vomiting, indigestion, nosebleed, cough, allergies, hay fever, dizziness and amebic dysentery [11-13].

Fenugreek

Fenugreek is a kind of seed, which are mainly used as kitchen spices in India, commonly known as maitray (Bangla, Gujarati), methi or mithi (Hindi, Nepali, Marathi, Urdu and Sanskrit). In Latin “fenugreek” or foenum-graecum is known for “Greek hay.” In medicines it is used as an aphrodisiac property, astringent, demulcent action, carminative, stomachic, diuretic, emmenagogue, emollient, expectorant, lactagogue, restorative, and tonic [14]. Fenugreek also used for a variety of health situations, including digestive disorders [15], bronchitis, tuberculosis infection, fevers, sore throats

problem, wounds healing, arthritis, abscesses, swollen glands, skin irritations reaction, loss of appetite, ulcers and menopausal symptoms, diabetes, as well as in the treatment of cancerous infection. Leaves infusion is used as a gargle for treatment of mouth ulcers. It also overcomes problem related to reduce blood sugar level and to lower blood pressure [16].

Kalonji

Kalonji mainly found in India every kitchen and having so many medicinal property. *Nigella sativa* is an annual flowering plant, native to southwest Asia, derivative of Latin niger meaning “black” having carminative, diaphoretic, digestive, diuretic, emmenagogue, excitant, lactagogue, laxative, expectorant, antipyretic, antihelminthic, resolvent, stimulant, sudorific, parasiticide, stomachic, property. It is also known as kalonji (Hindi), kezah (Hebrew), chernushka (Russian), çörek otu (Turkish), habbat albarakah (Arabic “seed of blessing”) or siyah daneh (Persian). Kalonji also effective in dog bites which are mad. It also effective in paralysis, facial palsy, migraine, amnesia related problem. Its powder if taken with water is effective in treating haemorrhoids [17]. Vinegar solution of boiled seed is very effective in inflammation and pain of gums and teeth. Its fine powder also effective in early stages of cataract problem. Black seed oil has also women’s beauty secret since ancient times. Black cumin and its oil having anti-parasitic activity and very effective in abscesses, hemorrhoids, orchitis and has been used to remove lice from the hair.

Cinnamon

Cinnamon is very commonly used spices in kitchen. (*Cinnamomum verum* or *C. zeylanicum*) is mainly present in India, Sri Lanka, Bangladesh, and Nepal [18]. The “cinnamon” names arise from Greek kinnám ō mon, itself ultimately from Phoenician. The botanical name for the spice, *Cinnamomum zeylanicum*, is derived from Sri Lanka’s former (colonial) name, Ceylon. In sinhala (Sri Lanka), it is also known as kurundu, Hindi as dachini, and in Gujarati as taj. In Malayalam cinnamon is called karuva or elavarngam. The (karuvappatta/elavarnngappatta) karuva dried skin has an important part of spicy curries. This spice is regarded as antipyretic, lowering in body temperature, antiseptic, astringent, inflammatory problem, carminative, diaphoretic, fungicidal, stimulant, and stomachic [19]. The powdered spice cinnamon bark in water is applied to overcome headaches and neuralgia. Cinnamon is combined with ginger to stimulate digestion & circulation [20]. In addition it is also used by different people of Kashmiri origin, cinnamon is used for treat infectious diseases. It regarded as a folk remedy for indurations (of spleen, breast, uterus, liver and stomach) and tumors (especially of the abdomen, liver and sinews) [21].

Spices	Uses	Benefits
Asafoetida (<i>Hing</i>)	It is used for seasoning food especially snacks and has medicinal uses.	A good remedy for whooping cough and stomach ache caused due to gas.
Bay leaf (<i>Tez Patta</i>)	It is used in cooking to add a specific flavour to food. It also has some medicinal properties.	Bay leaf oil possesses antifungal and anti bacterial.
Cardamom (<i>Elaichi</i>)	Mostly in all Indian and other sweet dishes it used to give a good flavour and smell. It is also used widely in pharmaceutical sector.	Helps to control bad breath and digestive disorder. A whole cardamom chewed is good for coping with diabetes.
Chilli (<i>Lal Mirch</i>)	It is a main ingredient used for adding hot flavour to the food.	The antioxidants present in chilli help to cope with cholesterol. It also helps burning calories.
Cinnamon (<i>Dalchini</i>)	It is used for mainly for seasoning food and preparing <i>masalas</i> It has medicinal uses too.	It supports natural production of insulin and reduces blood cholesterol.

Clove (<i>Laung</i>)	It is used as a cooking ingredient mainly for seasoning or preparing <i>Masalas</i> .	Clove oil is beneficial for coping with tooth ache and sore gums. It is also beneficial remedy for chest pains, fever, digestive problems, cough and cold.
Coriander (<i>Dhaniya</i>)	Coriander leaves as well as coriander seeds are used in cooking. It also has some medicinal uses.	It can be used externally on aching joints and rheumatism. It is also good for coping with soar throat, allergies, digestion problems, hay fever etc.
Cumin (<i>Zeera</i>)	It is used for cooking and it also possesses medicinal properties.	It is a good source of iron and keeps immune system healthy. Water boiled with cumin seeds is good for coping with dysentery.
Curry leaves (<i>Curry Patta</i>)	It is used as a main ingredient for seasoning in some countries. It has many medicinal uses.	These leaves are beneficial for reducing blood sugar. Each part of the plant provides some benefit or the other. The dried leaves are extensively used in herbal medicines.
Fenugreek (<i>Methi</i>)	It is mainly used as a green leafy vegetable and seeds are used for seasoning and preparing <i>Masalas</i> . It also has medicinal uses.	Fenugreek seed tea or sweet fudge is good for increasing breast milk. It also helpful for treating diabetes and lowering cholesterol
Garlic (<i>Lassan</i>)	It is used for cooking as well as for the medicinal purpose.	It is useful for coping with cough and cold. It also has antibiotic properties.
Ginger (<i>Adrak</i>)	It is used for giving a specific flavour to food and has many medicinal uses.	Helps to avoid digestive problems. It is beneficial for coping with cough and cold.
Mustard (<i>Rye</i>)	It is used for seasoning as well as green leafy vegetable. The use of mustard oil is extensive in India but it is banned in some countries.	Mustard oil is good for body massage and even for getting good hair. It consists of omega-3 fatty acids. It is an excellent source of iron, zinc, manganese, calcium, protein etc.
Nutmeg (<i>Jaiphal</i>)	It is used in powdered form for garnishing and also for masala preparation. It is used in soaps, perfumes and shampoos. It can also be used for medicinal purpose.	It is beneficial for the treatments of asthma, heart disorder and bad breath.
Pepper (<i>Kaali Mirch</i>)	It is extensively used in cooking, especially for garnishing. It has many medicinal uses too.	It helps coping with cold, cough, infections etc. It helps to deal with muscle pains and digestive problems.
Saffron (<i>Zaffran/Kesar</i>)	It is used for cooking as well as in beauty products. It is mainly used in sweet dishes. It has good medicinal properties.	It helps to cope with skin diseases. It is a good remedy for cough, cold and asthma.
Star anise (<i>Chakra Phool</i>)	It is used in cooking and for medicinal purpose.	Star anise oil is beneficial for rheumatism. It is helpful for digestion and avoiding bad breath.
Turmeric (<i>Haldi</i>)	It is used in cooking and skin care products. It has wide range medicinal uses.	It helps deal with skin problems. Turmeric powder can be used for healing cuts and wounds. It also makes coping with diabetes easier.

Garlic

Garlic is the oldest remedy used as early as 3000 BC for the treatment of intestinal disorders and is known for its fibrinolytic activity with lowering blood cholesterol. Garlic (*Allium sativum* L.) species mainly refer to the onion family, Alliaceae. This spice has also been used in folk medicine for diabetes and inflammation treatment. In Nepal, East Asia and the Middle East has been used to treat all manner of illnesses including fevers, diabetes, rheumatism, intestinal worms, colic, flatulence, dysentery, liver disorders, tuberculosis, facial paralysis, high blood pressure and bronchitis [22]. In Ayurvedic and Siddha medicine juice of garlic has been used to alleviate sinus problems. In Unani medicine, an prepared extract by the dried bulb is inhaled to promote abortion or taken to regulate menstruation. Unani physicians has also use garlic to treat paralysis, forgetfulness, tremor, colic pains, internal ulcers and fevers.

Ginger

It is also known as aadu (gujarati), shunti (Kannada), allam (Telugu), zanjabil (Arabic), inji (Tamil and Malayalam) and adrak (Hindi and Urdu). Ginger (*Zingiber officinale*) is common used as a spice in cooking throughout the world and specially used in kitchen. The ginger rhizome mainly diversify l used in Ayurvedic and traditional Chinese medicine to overcome a vast variety of gastrointestinal disorders, mainly nausea and vomiting associated with motion sickness and pregnancy, abdominal spasm, as well as respiratory and rheumatic disorders [23]. As a home, ginger is widely used for dyspepsia, flatulence, abdominal discomfort and nausea [24]. It

also used as astringent (an agent that causes shrinkage of mucous membranes or exposed tissues and that is often used internally to check discharge of blood serum or mucous secretions) [26].

Mint

The “mint” word generated from Greek word minthe, catargerised in Greek mythology as Minthe, a nymph who was appearing into a mint plant. Mentha (mint) has been a popular used spice and have a genus of about 25 species (and many hundreds of varieties) of flowering plants in the family Lamiaceae (mint family). The different types of mint including Mentha aquatic, water mint or marsh mint; Mentha arvensis corn mint, wild mint, Japanese peppermint, field mint or pudina; Mint leaves are also used in teas, beverages, jellies, syrups, candies, and ice creams. In Middle Eastern cuisine mint are used in lamb dishes. In British cuisine, mint sauce is popular with lamb. Mint is a necessary ingredient in Touareg tea, a popular tea in northern African and Arab countries. This plant is mainly used as a herbal agent in the treatment of loss of appetite, bronchitis, sinusitis, common cold fever, nausea and vomiting, and indigestion related problem [27].

Red chilli

Red chilli is the commonly used spice bins our daily life. Red chilli, plant specify genus Capsicum, which among the most popular consumed spices all around the worldwide. This name, chile, or chilli, arises from Nahuatl chilli via the Spanish word chile [28]. Red chili has one another application

used as an alternative medicine for the inflammation treatment ^[29], diabetes problem, and low back pain and also uses in to treat acute tonsillitis. capsicum plaster, that contains finely divided powdered capsicum and capsicum tincture solution, has been used in Korean hand acupuncture to reduce postoperative nausea, sore throat problem, vomiting ^[30].

Turmeric

Turmeric cultivation in India occupies 60% of the total area intended for spices and condiments. It is also named as kunyit (Indonesian and Malay), besar (Nepali) and haldi or pasupu in some Asian countries. Turmeric has appearance yellow colored spice arises from the rhizome of *Curcuma longa* plant. Turmeric also used as traditional medicine from ancient times in China and India ^[31]. It is called halodhi in Assanese. In medieval Europe, turmeric also known as Indian saffron, so this widely used for alternative far more costly saffron spice. The yellow powder which is obtained from rhizome of turmeric has been used in Asian cookery, different medicine, cosmetics products, and textile and fabric coloring for the last 2000 years ^[32]. As a traditional remedy, turmeric has also been quite extensively used for centuries to treat various disorders such as rheumatism, body ache ^[33], skin diseases, intestinal worms, diarrhea ^[34], intermittent fevers, hepatic diseases, urinary discharges, dyspepsia, inflammations, constipation, leukoderma, amenorrhea, dental diseases, digestive problem such as dyspepsia and acidity, indigestion, flatulence, ulcers, and colic inflammatory disorders such as arthritis, colitis and hepatitis ^[35, 36].

Caper:

The caper bush, are also called Flinders rose that is a perennial herb plant wick bears spiral, fleshy leaves and large white to pinkish flowers. This plant mainly best known for the edible buds of flower, often used as a seasoning, and the fruit (caper berries), both of which are usually consumed pickled. Other varieties of *Capparis* are also picked along with *C. spinosa* for their buds or fruits. Other parts of *Capparis* plants are used in the manufacture of medicines and cosmetics. *Capparis spinosa* is found in the wild in the Mediterranean, East Africa, Madagascar, South-Western and Central Asia, the Himalayas, the Pacific Islands, Indomalaya, and Australia ^[6]. It is present in almost all the circum-Mediterranean countries. When ready to pick, the bud are a dark olive green colour and size about of a fresh kernel of corn (*Zea mays*). These are picked and then pickled in salt, or a salt and vinegar solution, and drained. A high Intense flavor, described as being similar to black pepper or mustard, is appear as mustard oil (glucocapparin) is released from each caper bud ^[24]. This type of enzymatic reaction emphasis for the formation of rutin, also seen as crystallized white spots on the surfaces of any individual caper buds.

Alkanet:

Alkanet is the common name of several related plants in the borage family *Boraginaceae* Alkanet, *Alkanna tinctoria*, the source of a red dye; this is the plant most commonly called simply "alkanet". Alkanet is traditionally used in Indian food under the name "Ratan Jot", and lends its red colour to some versions of the curry dish Rogan Josh. In Australia alkanet is approved for use as a food colouring, but in the European Union it is not.

It has been used as colorant for lipstick ^[4] and rouge

(cosmetics). The colouring agent in *Alkanna tinctoria* root has been chemically isolated and named alkannin. In folklore medicine *Alkanna tinctoria* is also used to treat abscesses and inflammations ^[6].

Ajwain

Family *Apiaceae* or *Umbelliferae*, It originated in India. Both the leaves and the seed-like fruit (often mistakenly called seeds) of the plant are consumed by humans. The name "bishop's weed" also is a common name for other plants. The "seed" (i.e., the fruit) is often confused with lovage "seed". Ajwain's small, oval-shaped, seed-like fruits are pale brown schizocarps, which resemble the seeds of other plants in the *Apiaceae* family such as caraway, cumin and fennel. They have a bitter and pungent taste, with a flavor similar to anise and oregano. They smell almost exactly like thyme because they also contain thymol, but they are more aromatic and less subtle in taste, as well as being somewhat bitter and pungent. Even a small number of fruits tend to dominate the flavor of a dish. Ajwain is used in traditional Ayurvedic medicine primarily for stomach disorders such as indigestion, flatulence ^[7] diarrhea and colic ^[10].

In Siddha medicine, it is used as a cleanser, detox, and antacid. In general, the crushed fruits are applied externally as a poultice

Tamarind

Tamarindus indica is a leguminous tree in the family *Fabaceae* indigenous to tropical Africa. The genus *Tamarindus* is a monotypic taxon, having only a single species.

The tamarind tree produces pod-like fruit, which contain an edible pulp that is used in cuisines around the world. Other uses of the pulp include traditional medicine and metal polish. The wood can be used for woodworking, and tamarind seed oil can be extracted from the seeds. Because of the tamarind's many uses, cultivation has spread around the world in tropical and subtropical zones. The fruit has a fleshy, juicy, acidulous pulp. It is mature when the flesh is coloured brown or reddish brown. The tamarinds of Asia have longer pods (containing six to 12 seeds), whereas African and West Indian varieties have shorter pods (containing one to six seeds). The seeds are somewhat flattened, and a glossy brown. The fruit is best described as sweet and sour in taste, and is high in tartaric acid, sugar, B vitamins, and, unusually for a fruit, calcium.

Licium verum

Licium verum is a medium-sized evergreen tree native to northeast Vietnam and southwest China. A spice commonly called star anise, star anise seed, Chinese star anise, or badiam that closely resembles anise in flavor is obtained from the star-shaped pericarps of the fruit of *L. verum* which are harvested just before ripening. Star anise oil is a highly fragrant oil used in cooking, perfumery, soaps, toothpastes, mouthwashes, and skin creams. About 90% of the world's star anise crop is used for extraction of shikimic acid, a chemical intermediate used in the synthesis of oseltamivir (Tamiflu). It is used as a spice in preparation of biryani and masala chai all over the Indian subcontinent. It is widely used in Chinese cuisine, and in Malay and Indonesian cuisines. It is widely grown for commercial use in China, India, and most other countries in Asia. Star anise is an ingredient of the traditional five-spice powder of Chinese cooking. It is also a major ingredient in the making of, a Vietnamese noodle soup.

Star anise is the major source of the chemical compound shikimic acid, a primary precursor in the pharmaceutical synthesis of antiinfluenza drug oseltamivir (Tamiflu)^[4]. Shikimic acid is produced by most autotrophic organisms, and while it can be obtained in commercial quantities elsewhere, star anise remains the usual industrial source. In 2005, a temporary shortage of star anise was caused by its use in the production of Tamiflu. Later that year, a method for the production of shikimic acid using bacteria was discovered^[5].

Poppy seed

Poppy seed is an oilseed obtained from the poppy (*Papaver somniferum*). The tiny kidney-shaped seeds have been harvested from dried seed pods by various civilizations for thousands of years. It is still widely used in many countries, especially in Central Europe, where it is legally grown and sold in shops. The seeds are used, whole or ground, as an ingredient in many foods-especially in pastry and bread, and they are pressed to yield poppy seed oil. In a 100 gram amount, poppy seeds provide 525 Calories and are a rich source of thiamin, folate, and several essential minerals, including calcium, iron, magnesium, manganese, phosphorus and zinc (table). Poppy seeds are composed of 6% water, 28% carbohydrates, 42% fat, and 21% protein (table). In Indian cuisine white poppy seeds are added for thickness, texture and also give added flavor to the recipe. Commonly used in the preparation of korma, ground poppy seeds, along with coconut and other spices, are combined as a paste, to be added at the last stage of cooking. It is quite hard to grind them when raw, so they are normally toasted/broiled and water added when grinding to get the right consistency

In Indian traditional medicine Ayurveda soaked poppy seeds are ground into a fine paste with milk and applied on the skin as a moisturizer^[18].

Poppy seeds are pressed to form poppy seed oil, valuable commercial oil that has multiple culinary, industrial, and medicinal uses.

Pomegranate

The pomegranate (*Punica granatum*) is a fruit-bearing deciduous shrub or small tree in the family Lythraceae that grows between 5 and 8 m (16 and 26 ft) tall. The fruit is typically in season in the Northern Hemisphere from September to February^[2] and in the Southern Hemisphere from March to May. As intact arils or juice, pomegranates are used in baking, cooking, juice blends, meal garnishes, smoothies and alcoholic beverages, such as cocktails and wine. Pomegranate juice can be sweet or sour, but most fruits are moderate in taste, with sour notes from the acidic ellagitannins contained in the juice^[15]. It is well known popular drink in whole world.

In India's ancient Ayurveda system of traditional medicine, the pomegranate is frequently described as an ingredient in remedies.

Nigella sativa

An annual flowering plant in the family Ranunculaceae, native to south and southwest Asia. The seeds of *N. sativa* are used as a spice in Indian and Middle Eastern cuisines. The black seeds taste like a combination of onions, black pepper, and oregano. They have a pungent, bitter taste and smell^[6]. The dry-roasted seeds flavor curries, vegetables, and pulses. They can be used as a "pepper" in recipes with pod fruit,

vegetables, salads, and poultry. In some cultures, the black seeds are used to flavor bread products, and are used as part of the spice mixture *panch phoron* (meaning a mixture of five spices) and alone in many recipes in Bengali cuisine and most recognizably in *naan*^[8]. *Nigella* is also used in Armenian string cheese, a braided string cheese called *majdouleh* or *majdouli* in the Middle East.

Liquorice

Liquorice is the root of *Glycyrrhiza glabra* from which a sweet flavour can be extracted. The liquorice plant is an herbaceous perennial legume native to southern Europe and parts of Asia, such as India. It is not botanically related to anise, star anise, or fennel, which are sources of similar flavouring compounds. Liquorice flavours are used as candies or sweeteners, particularly in some European and Middle Eastern countries. Liquorice extracts have been used in herbalism and traditional medicine. Excessive consumption of liquorice (more than 2 mg/kg/day of pure glycyrrhizic acid, a liquorice component) may result in adverse effects such as hypokalemia, increased blood pressure, and muscle weakness^[6-7].

Liquorice flavour is found in a wide variety of candies or sweets. In most of these candies, the taste is reinforced by aniseed oil so the actual content of liquorice is very low. Liquorice confections are primarily purchased by consumers in the European Union^[17].

In the Netherlands, liquorice confectionery (*drop*) is one of the most popular forms of sweets. It is sold in many forms. Mixing it with mint, menthol, aniseed, or laurel is quite popular. Mixing it with ammonium chloride (*salmiak*) is also popular. A popular liquorice in the Netherlands is known as *zoute drop* (salty liquorice), but contains very little salt, i.e., sodium chloride^[21]. The salty taste is due to ammonium chloride. Strong, salty sweets are also popular in Nordic countries. In traditional Chinese medicine, liquorice (*G. uralensis*) is believed to "harmonize" the ingredients in a formula. Liquorice has been used in Ayurveda for rejuvenation and in the belief it may aid jaundice or other diseases. It is used as an expectorant in traditional medicine in Egypt^[25-27].

Conclusion

All the spices have a wide variety of bio-functions and their additive and synergistic actions that protect the human body. Traditionally, spices are the part of diet, having holistic approach. Because they tend to have strong flavors and are used in small quantities, spices tend to add few calories to food, even though many spices, especially those made from seeds, contain high portions of fat, protein and carbohydrate by weight. However, when used in larger quantity, spices can also contribute a substantial amount of minerals and other micronutrients, including iron, magnesium, calcium and many others, to the diet.

References

1. Duke JA, Bogenschutz-Godwin MJ, deCellier J and Duke PK. *Syzygium aromaticum* (L.) Merr. and L. M. Perry (Myrtaceae) Clavos, Clove, Clovetree, in CRC Handbook of Medicinal Spices. CRC Press, Washington DC, 2003, 281.
2. Debjit B, Kumar KP Sampath, Yadav A, Srivastava S, Paswan S, Dutta AS. Recent Trends in Indian Traditional Herbs *Syzygium aromaticum* and its Health Benefits.

- Journal of Pharmacognosy and Phytochemistry Vol. 1 No. 1 2012; 5(1): 6-9.
3. Daniel AN, Sartoretto SM, Schmidt G, Caparroz-Assef SM, Bersani-Amado CA, Cuman RKN. Anti-inflammatory and antinociceptive activities A of eugenol essential oil in experimental animal models. *Revista Brasileira de Farmacognosia*. 2009; 19: 212- 217.
 4. Bhat KS and Vivek K. Biocidal potential of clove oils against *Aede albopictus* – A comparative study. *African Journal of Biotechnology*. 2009; 8 (24):6933-6937, 15.
 5. Delaquis P.J., Stanich K., Girard B., and Mazza G. Antimicrobial activity of individual and mixed fractions of dill, cilantro, coriander and eucalyptus essential oils. *International Journal of Food Microbiology*. 2002; 74(1-2):101-109.
 6. Jafri MA, Farah, Javed K and Singh S. Evaluation of the gastric antiulcerogenic effect of large cardamom (fruits of *Amomum subulatum* Roxb). *J. Ethnopharmacol*. 2001; 75(2-3):89-94.
 7. Al-Zuhair H, el-Sayeh B, Ameen HA and al-Shoora H. Pharmacological studies of cardamom oil in animals. *Pharmacol. Res*. 1996; 34(1-2): 79-82
 8. Duke JA, Bogenschutz-Godwin MJ, deCellier J and Duke PK. *Elettaria cardamomum* Maton (Zingiberaceae) Cardamon, Malabar or Mysore cardamon, in *CRC Handbook of Medicinal Spices*, 2003, 120-138.
 9. Kapoor LD. *Handbook of Ayurvedic medicinal plants*. CRC Press, Boca Raton, 1990, 172.
 10. Gilani AH, Bashir S, Khan AU. Pharmacological basis for the use of *Borago officinalis* in gastrointestinal, respiratory and cardiovascular disorders. *J Ethnopharmacol* 2007; 114:393- 99.
 11. British pharmacopoeia, Introduction General Notices Monographs, medicinal and Pharmaceutical, British pharmacopoeia commission, London, 2003; Volume-1 (A-I); 542-543.
 12. Dhanapakiam P, Joseph J Mini, Ramaswamy VK, M. Moorthi and Senthil Kumar A. The cholesterol lowering property of coriander seeds (*Coriandrum sativum*): Mechanism of action. *Journal of Environmental Biology* 2008; 29(1):53-56.
 13. Karan Singh, Mohan Lal Jakhar and Dhirendrasingh: *Multitherapeutic medicinal and special plants*. 1st edition, Avishkar publishers, Jaipur, India. 2007; 32.
 14. Acharya SN, Thomas JE and Basu SK, Fenugreek, an alternative crop for semiarid regions of North America. *Crop Sci* 2008; 48: 841-53.
 15. Basu SK, Acharya SN, Thomas JE. Application of phosphate fertilizer and harvest management for important fenugreek (*Trigonella foenum-graecum* L.) seed and forage yield in a dark brown soil zone of Canada. *KMITL Sci Tech J* 2008; 8(1): 1 –7.
 16. Hardman R, and Fazli FRY. Methods of screening the genus *Trigonella* for steroidal saponin. *Planta Medica* 1972; 21: 131–138.
 17. Sachan AK, Rao ChV, Sachan NK: *Ethnobotanical survey of indigenous medicines practiced in Chambal valley of Uttar Pradesh*. *Bharatiya Vaigyanik Evam Audyogik Anusandhan Patrika (CSIR-NISCAIR)* 2016; 23(2) 132-135.
 18. Ballabh B, Chaurasia OP, Ahmed Z and Singh SB. Traditional medicinal plants of cold desert Ladakh-used against kidney and urinary disorders. *J Ethnopharmacol* 2008; 118(2): 331–339.
 19. Khan A, Safdar M, Khan AMM, Khattak KN and Anderson RA. Cinnamon improves glucose and lipids of people with type 2 diabetes. *Diabetes Care* 2013; 26 (12): 215- 218.
 20. Doli R Das, Sachan AK, Vishnoi G, Shuaib Mohd, Imtiaz Mohd. A Review on Surveillance of Herbal Medicines. *International Journal of Phytopharmacology* 2016; 7(2): 68-72.
 21. Bajpai M, Pande A, Tewari SK, Prakash D. Phenolic contents and antioxidant activity of some food and medicinal plants. *Int J Food Sci Nutr* 2005; 56(4): 287-291.
 22. Benavides GA, Squadrito GL, Mills RW, Patel HD, Isbell TS, Patel RP, Darley-Usmar VM, Doeller JE, Kraus DW. Hydrogen sulfide mediates the vasoactivity of garlic 2007; *PNAS*. 104: 17977-17982.
 23. Agrawal M, Walia S, Dhingra S, Khambay BPS. Insect growth inhibition antifeedant and antifungal activity of compounds isolated derived from *Zingiber officinale* Roscoe, ginger rhizome. *Pest Manag Sci* 2001; 57: 289-300.
 24. Kikuzaki H, Kobayashi H, Nakatani N. Constituents of Zingiberaceae, Diarylheptanoids from rhizomes of *Zingiber officinale*, *Phytochemistry* 1991; 30: 3947-3952.
 25. Phillips S, Hutchinson S and Ruggier R. *Zingiber officinale* does not affect gastric emptying rate. A randomised, placebo controlled, crossover trial. *Anaesthesia* 1993; 48: 393-395.
 26. Sachan AK, Doli R Das, Senah L Dohare, Shuaib, Mohd. *Asparagus racemosus* (Shatavari): An Overview. *International journal of pharmaceutical and chemical sciences* 2012; 1(3) 588-592.
 27. Muhammad N, Anwar G, Gilani H and Janssen JJ. Ginger attenuates acetylcholine-induced contraction and Ca²⁺ signalling in murine airway smooth muscle cells. *Can J Physiol Pharmacol* 2008; 86(5): 264-271.
 28. Maqsood S, Singh P, Samoon MH, Munir K. Emerging role of immunostimulants in combating the disease outbreak in aquaculture. *International Aquatic Research* 2011; 3: 147-163.
 29. Szallasi A. Piperine: Researchers discover new flavor in an ancient spice. *Trends Pharmacol. Sci* 2005; 26(9): 437-439.
 30. Ravindran PN, Nirmal Babu K, Sivaraman K. *Turmeric. The golden spice of life*. In: *Turmeric. The Genus Curcuma*. Boca Raton, FL, USA: CRC Press; 2007, 1-14.
 31. Chattopadhyay I, Biswas K, Bandyopadhyay U, Banerjee RK. *Turmeric and curcumin: Biological actions and medicinal applications*. *Curr Sci India* 2004; 87:44-53.
 32. Ammon HP, Anazodo MI, Safayhi H, Dhawan BN, Srimal RC. Curcumin. A potent inhibitor of leukotriene B₄ formation in rat peritoneal polymorphonuclear neutrophils (PMNL). *Planta Med* 1992; 58: 226.
 33. Ammon HP, Wahl MA. Pharmacology of *Curcuma longa*. *Planta Med* 1991; 57:1-7.
 34. Bernard GT, Esteban P, Christopher JS. *Turmerones: Isolation from turmeric and their structure determination*. *Chem Commun* 1982; 6: 363.
 35. Sachan AK, Doli R. Das, Kumar Mukesh. *Carum carvi*-An important medicinal plant. *Journal of Chemical and Pharmaceutical Research* 2016; 8(3): 529-533.
 36. Khajehdehi P. *Turmeric: Reemerging of a neglected Asian traditional remedy*. *J Nephropathol* 2012; 1(1): 17-22.

37. Sharma R and Lal D. Effect of dahi preparation on some water-soluble vitamins. *Indian J Dairy Sci* 1997; 50: 318-20.
38. Singh G, Kawatra A and Sehgal S. Nutritional composition of selected green leafy vegetables, herbs and carrots. *Plant Foods Human Nutr* 2001; 56: 359-64.
39. Sachan AK, Kumar A. Stability testing of herbal products. *Journal of Chemical Pharmaceutical Research* 2015; 7(12) 511-514.