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TRADITIONAL REMEDIES AT HOME: THE INDIAN CULINARY APOTHECARY

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ABSTRACT

The Indian kitchen is more than a place for culinary creations; it's a treasure trove of medicinal elements, a repository of natural remedies housed within everyday ingredients. Across generations, Indian households have revered spices, herbs, and ingredients not just for their culinary flavors but also for their therapeutic properties, turning the kitchen into a holistic medicine chest. Turmeric, a staple spice in Indian cuisine, is renowned for its anti-inflammatory and antioxidant properties. Its active compound, curcumin, has been used for centuries in traditional medicine to treat various ailments, from wounds to digestive issues. Similarly, ginger, often found in teas and dishes, aids digestion, relieves nausea, and possesses anti-inflammatory qualities. The aromatic cumin not only flavors dishes but also aids digestion and has been historically utilized for its antimicrobial properties. Fenugreek seeds, used in cooking and herbal preparations, have been associated with blood sugar regulation and cholesterol management. Additionally, the use of spices like cinnamon, cardamom, and cloves extends beyond taste enhancement; they contribute to wellness through their medicinal attributes. Beyond spices, the Indian kitchen features ingredients like holy basil (tulsi), known for its adaptogenic and antibacterial properties, and the aloe vera plant, revered for its healing and skin-soothing capabilities. Furthermore, the inclusion of ingredients such as curry leaves, garlic, and various lentils and legumes adds not only flavors but also nutritional and

medicinal value to meals. Indian kitchens, therefore, embody a fusion of culinary artistry and medicinal science. The holistic approach to food preparation integrates health and wellness into daily meals, emphasizing the significance of these natural remedies in maintaining well-being. This amalgamation of culinary and healing traditions underscores the profound role of the Indian kitchen as a repository of medicines within the home.

Keywords: Ayurveda, Herbal Medicine, Kitchen Medicine, Holistic health

INTRODUCTION:

The Indian kitchen stands as a vibrant mosaic of flavors, aromas, and textures, where every spice, herb, and ingredient not only contributes to the richness of culinary creations but also holds profound medicinal significance. Within the heart of an Indian household, this bustling space isn't just a realm of cooking; it's a repository of remedies, a treasury of natural medicines passed down through generations. Deeply ingrained in the fabric of Indian culture is the belief that food is not just sustenance; it's medicine. The array of spices that adorns the spice box or "masala dabba" in an Indian kitchen isn't merely for enhancing taste but serves as a holistic pharmacopoeia. Turmeric, with its vibrant hue and potent compound curcumin, isn't just a spice for curry but a revered remedy for its anti-inflammatory and antioxidant properties **[1]**.

Beyond turmeric, the shelves brim with an assortment of treasures: from the zesty ginger known for soothing digestive discomforts to the aromatic cumin celebrated for aiding digestion and offering antimicrobial benefits. Each spice, herb, or ingredient woven into the culinary tapestry carries not just flavors but centuries of wisdom in healing and wellness. The reverence for nature's bounty extends beyond spices to encompass herbs like holy basil (tulsi) and the aloe vera plant, each celebrated for their therapeutic virtues. Even commonplace ingredients like garlic, curry leaves, and lentils are valued not just for their taste but for their nutritional and medicinal prowess. The medicinal value of particular spice dependsupon the part of the plant used. Usage of specific plant part is recommended in Ayurveda for particular ailments **[3]**.

These are demonstrated to have certain target functions in the body beyond basic nutritional requirements **[2]**. Indian kitchen also stores nutritive materials like honey and ghee which also have medicinal importance Ayurveda. Cow ghee is called as Ayurvedic gold in some kinds of literature. Some of the Spices which are widely used in Indian kitchen are Ajwain,

Anise, Asafoetida, Bay leaves,Cardamom, Chilli, Cinnamon, Cloves, Coriander leaves, Coriander seeds, Cumin, Curry leaves, Fennel, Fenugreek, Garlic, Ginger, Honey, Jaggery, Kapok buds, Mint, Mustard seeds, Nigella saliva, Onion, Pepper, Sesame, Tamarind, Turmeric. This work aims to review the nutritional and medicinal benefits of traditional spices mostly used in Indian kitchen. This intertwining of culinary artistry and healing wisdom defines the essence of the Indian kitchen. It's a space where the alchemy of spices and the tradition of herbal remedies converge, creating meals that not only tantalize taste buds but also nurture and heal. The Indian kitchen, therefore, transcends its culinary role, emerging as a sanctuary of natural medicines within the household, preserving health and wellness through the art of cooking.

DESCRIPTION

1. Ajwain

It is known by its scientific name, *Trachyspermum ammi*, and it is a member of the Apiaceae family **[4]**. It is most commonly used in Indian cooking to flavour pastries and bread-like dishes like rotis, parathas (floury flatbreads), and samosa shells. It is also used to temper dals and pakoras and as a seasoning for potato curries. These are regarded as nutritional powerhouses since they are high in fibre, minerals, oil, and proteins, carbs, and fats **[4]**. It also contains iron, niacin, thiamine, calcium, potassium, sodium, and phosphorus.

2. Anise

It is referred to as *Pimpinella anisum* in botany and is a member of the Apiaceae family **[5]**. Anise is utilised in Indian cuisine to improve the flavour of the meat and is a necessary spice for making biryani and other spicy dishes on the Indian subcontinent. Confectioners use it in place of sweeteners. It gives the ingredients a well-balanced taste and a sweetened flavour. It can be used whole or ground into a powder. This contains relatively little salt, cholesterol, and saturated fat. It is also a very good source of iron, calcium, magnesium, potassium, vitamin C, dietary fibre, and vitamin C. Additionally, it contains manganese, zinc, copper, and phosphorus.

3. Asafoetida

Ferula asafetida is a member of the Umbelliferae family **[6]**. Asafoetida is commonly used in Indian savoury recipes to simulate the taste of onions, garlic, eggs, and even meat, hence adding a more robust flavour. It's a basic component in Indian cookery, frequently used in a range of vegetable dishes and lentil meals like dal with turmeric **[6]**. Iron, calcium, carbohydrates, dietary fibre, protein, magnesium, phosphorus, zinc, copper, manganese,

riboflavin, and niacin are generally found in asafoetida.

4. Bay leaves

Cinnamomum tamalabe, the scientific name for Indian bay leaf, is a member of the Lauraceae family **[7]**. The most common uses for this spice are in rice dishes like biryani and as an ingredient in hot items that are used to prepare food. Vitamins A, C, iron, potassium, magnesium, carbs, protein, fat, fibre, folates, niacin, pyridoxine, riboflavin, sodium, copper, manganese, phosphorus, selenium, and zinc are all abundant in these.

5. Cardamom

Elettaria cardamomum is the scientific name for it, and it is a member of the Zingiberaceae family **[8]**. It is referred to as the spice queen **[8]**. The rich aroma and flavour of cardamom enhance both savoury and sweet dishes across many culinary traditions. Use it sparingly; too much will soon overwhelm a dish. Vitamins A, C, iron, potassium, calcium, magnesium, carbs, protein, fat, fibre, folates, niacin, pyridoxine, riboflavin, sodium, copper, manganese, phosphorus, selenium, and zinc are all abundant in these.

6. Chilli

Its scientific name is *Capsicum frutescent*, and it is a member of the Solanaceae family **[9]**. You'll find chilli in almost every Indian meal. Even in non-spicy dishes, the use of chilli is a staple in Indian cooking, serving as both a flavouring and a foundation. There are different types even though it will seem generic **[9]**. In addition to this, there are numerous species of chillies in just India. Antiophthalmic factor, vitamin C, iron, potassium, calcium, magnesium, carbs, protein, fat, fibre, folates, niacin, pyridoxine, riboflavin, sodium, copper, manganese, phosphorus, selenium, and zinc are all abundant in these.

7. Cinnamon

Its scientific name is *Cinnamomum zelanicum* Blume, and it is a member of the Lauraceae family **[10]**. Cinnamon may serve as a often utilised spice in Indian cooking. You might add powdered cinnamon to the curry while the food is being cooked. The chef could further enhance the flavour of simply adding little amounts to the cooking oil of cinnamon. Cinnamon has a cosy and delicious flavour, and it's also favoured a spice used in sweet dishes. It consists of fat, potassium, carbs, protein, and fibre, iron, calcium, vitamin B6, and vitamin A, magnesium.

8. Clove

It is referred to as *Syzygium aromaticum* in science and is a member of the Myrtaceae family **[11]**. A key component of several dry masala powders used in Indian cooking, including Garam Masala, are cloves. They are

cooked with other whole spices (khada masala) and used whole in many recipes. It has calcium, iron, potassium, fibre, protein, sodium, and carbs.

9. Coriander leaves

It is referred to as *Coriandrum sativum* in science and is a member of the Umbelliferae family **[12]**. Typically, they worked in several Asian and Thai dinnerware. The smell of coriander leaves is strong. Even their fragrant, green leaves are primarily used to taste and decorate food. Related to the Cilantro family in a similar way, the Powder, dried seeds, and leaves are commonly used in Indian cooking. It contains fat,calcium, sodium, fibre, protein, and carbs potassium and iron.

10. Coriander seeds

The seeds are known as Dhaniya in Indian cooking and are a crucial component of the spices. Having an fragrant scent, the seeds can be found in both in ground and dried seed form **[13]**. In terms of nutrition, it contains fat, sodium, iron, calcium, fibre, protein, and carbs, potassium.

11. Cow Ghee

Ghee is a superior fat to use in cooking for a variety of reasons. It is a fantastic source of fat since, among other things, it is casein and lactose free **[14]**. People following paleo diets or suffering from food sensitivities. However, Beyond that, ghee adds more flavour to food than butter does because of its distinct nutty taste. It contains cholesterol, fat, and vitamin A.

12. Cumin

It is referred to as *Cuminum cyminum* in science and is a member of the Umbelliferae family **[15]**. Cumin is frequently used both whole and in spice blends to highlight a distinctive smokey flavour to Indian cuisine **[15]**. It was frequently recognised by its unusual ridged brown colour seeds and strong aroma. It has fat in it potassium, sodium, fibre, and carbs iron, calcium, proteins, vitamins A and C, magnesium, vitamin B6.

13. Curry leaves

It's scientifically called is *Murraya koenigii* that belongs to the family Rutaceae **[16]**. They are aromatic herbs utilized in South Indian cooking. Curry leaves, that softens once steamed and are used to flavour rice, chutneys, soups, stews, and even dals. To bring out their flavours, it's recommended that curry leaves may be cooked in oil first. It has calcium, vitamin A, magnesium, iron, folate, riboflavin, carbohydrates, fat, protein, vitamin D, thiamine, vitamin B6, zinc.

14. Fennel

It is scientifically known as *Foeniculum vulgare* and belongs to the family Umbelliferae **[17]**. Fennel is used extensively in Indian cooking. While it is mostly used in

seed form, some dishes do call for the seeds to be roasted and powdered. In India, these are routinely chewed upon after meals to aid in digestion after a rich meal while it also acts as a herbal mouth freshener. They help to overcome gas, cramps, acid indigestions, and many other digestive tract maladies **[17]**. Nutritionally it is a source of sodium, potassium, carbohydrates, fiber, protein, vitamin A, calcium, vitamin C, iron, magnesium.

15. Fenugreek

Fenugreek, scientifically *Trigonella foenumgraecum* is an annual plant in the family Fabaceae **[18]**. Fenugreek seeds are one of the staple spices used in Indian cooking, with a sweet, nutty flavour reminiscent of maple syrup and burnt sugar. It can be incredibly bitter when eaten raw, but when cooked and combined with aromatics and spices, it transforms and gives a sweetness and depth of flavour to saucy dishes **[18]**. It contains fat, sodium, potassium, carbohydrates, fiber, protein, vitamin A, vitamin C, calcium, iron, vitamin B6, magnesium.

16. Garlic

Its botanical name is *Allium sativum* and belongs to the family Amaryllidaceae [19]. Garlic plays a vital role in adding flavour to many Indian dishes and it takes ordinary dishes to next level. The aroma of roasted or fried garlic is irresistible. It adds overall taste and flavour to any non-vegetarian or even vegetarian dishes. It is an essential ingredient in dishes like biryani and chicken dishes. Garlic is enriched with Vitamin B1, B2, B3, B6, folate, Vitamin C, calcium, iron, magnesium, manganese, phosphorous, potassium, sodium and zinc **[19]**.

17. Ginger

It is a member of the Zingiberaceae family and is known by its botanical name, *Zingiber officinale* **[20]**. In India, ginger is a ubiquitous ingredient cuisine. It is primarily used in cooking as a spice. It is an excellent fusion of flavour. It is utilised in chutneys, pickles, and recipes for vegetarians. It is either cut finely or mashed into a paste to be used in curries with chicken or beef. It contains several vitamins, including Iron, potassium, vitamin B3 and B6, and vitamin C, Zinc, Folate, Magnesium, Phosphorus, calcium **[20]**.

18. Honey

Honey is a naturally occurring product made by honeybees (*Apis mellifera*), members of the Apidae family, from the nectar of flowers **[21]**. Since ancient times, honey has been one of the most valuable natural resources that humans have ever encountered. One of the foods that Indian cooks utilise the most frequently is honey. It is the greatest and most

traditional sugary treat, and it has many health advantages. It serves as a substitute for sugar. used in baking, cooking, and dessert preparation. It is devoid of fibre, fat, and protein. The primary ingredient is sugar, which is made up of fructose, glucose, maltose, and sucrose **[21]**. Honey has around 64 calories per tablespoon. It has total carbs, iron, and potassium.

19. Jaggery

Jaggery, a sugar-rich food and medicine made from sugarcane (*Saccharum officinarum* L.), belongs to Poaceae family Grasses **[22]**. Jaggery is a sweetener frequently used in Indian cuisine. It is a superior substitute for refined sugar. Numerous to make sweet meals, combine jaggery. It could be used to make confections similar to Pongal, kheer. Adds a dash of jaggery to hot dishes like rasam, sambar, and more gravies to enhance the taste. It has different nutrients, such as iron, calcium, and folate, magnesium, selenium, phosphorus, and manganese **[22]**. Carbohydrates are also present. It also consists of vitamins such as choline, B12, and B6, betaine. Potassium and sodium are also present.

20. Kapok buds

Jaggery, a sugar-rich food and medicine made from sugarcane (*Saccharum officinarum* L.), belongs to the to Poaceae family Grasses **[22]**. Jaggery is a sweetener frequently used in Indian cuisine. It is a superior substitute for refined sugar. Numerous to make sweet meals, combine jaggery. It could be used to make confections similar to Pongal, kheer. Adds a dash of jaggery to hot dishes like rasam, sambar, and more gravies to enhance the taste. It has different nutrients, such as iron, calcium, and folate, magnesium, selenium, phosphorus, and manganese **[22]**. Carbohydrates are also present. sugar, calories, and proteins. It also consists of vitamins such as choline, B12, and B6, betaine. Potassium and sodium are also present.

21. Mint

Mentha piperita is the botanical name for it, and it is a member of the Lamiaceae family **[24]**. Mint is used as paste, dried leaves, or fresh leaves. It's commonly used in Indian cooking for chutneys, salads, sauces, and tea. Most often, mint is added to lassie, sweets, and biryanis. Mint is one of those culinary herbs that gives everything it's added to an extra burst of freshness, from summertime drinks to Indian curries or chutneys. It is a fantastic source of copper, manganese, and vitamin C. It also contains minerals like calcium, iron, magnesium, and manganese as well as vitamins like beta carotene, folate, and

riboflavin, as well as vitamins A, B-6, C, E, and K.

22. Mustard seeds

Black mustard, or *Brassica nigra*, is an annual plant that is cultivated for its black or dark brown seeds, typically utilised as a seasoning **[25]**. In many Indian recipes, they are more frequently used as a seasoning than as a foundation flavor they provide a lot of vibrancy to rice or lentils. Meal that was originally fried with curry with a little oil foliage (an ideal combination). Because of that for this reason, mustard seeds are very healthful consumption, following your desire to highlight taste without increasing fat content. The taste of when crushed mustard is submerged in liquid to highlight the aromatic ingredients. It is typically used in salad dressings, spice rubs, and soups, dressings, and to incorporate an acidic element to sever wealthy.

23. *Nigella saliva*

Nigella sativa (caraway, black) also known as nigella, black cumin, kalojeera, kalonji, or kalanji, this annual blooming plant belonging to the Ranunculaceae family **[26]**. Flavour is added by the dry-roasted nigella seeds to pulses, veggies, and curries. The black seeds style is similar to or a blend of onions, oregano, and black pepper, and possess mustard seeds have the same bitterness to them. Nigella seeds are tiny black seeds with a strong flavour that spice up a lot of foods to curries from India. It is made up of fat, protein, and Ash, wetness, and everything else being total carbohydrates. The amount of fat and ash was more substantial than those listed in the literature.

24. Onion

It is a member of the Amaryllidaceae family and is known by the scientific name *Allium cepa* **[27]**. especially when it comes to Indian cooking, wherever practically every savoury dish begins with onions. You might slice them into cubes, finely sliced or reduced to a paste, it creates the foundation for our fillings, stir-fries, biryanis, and curries for anything—dosas, samosas, parathas, etc.Indians enjoy spice a little bit. They adore the look up their meal by the campfire and then up their ass. Onions complement the meal nicely. It is a powerful taste explosion. There is a flavonoid in them known as quercetin. They don't contain much sodium rich in vitamin C concentration and low in fat. There is an abundant supply of folic acid and dietary fibre. Furthermore, it a sufficient amount of folic acid and dietary fibre.

25. Pepper-

Piper nigrum, the formal name for black pepper, is a flowering vine that is a member of the Piperaceae family. In recipes, pepper is

used as an ingredient to taste and spice meats, seafood, and other veggies, stir-fries, soups, and salad dressings pasta together with additional items. Add a dash as well of avocado and black pepper to scrambled eggs. For a spicy twist, pair with bread, fruit, and dipping sauces. It includes important vitamins, such as vitamins. Together with vitamins A, E, and K minerals like iron, copper, and calcium zinc, phosphorus, manganese, and magnesium **[28]**.

26. Sesame

Scientifically known as *Sesamum indicum*, or benne, sesame is an upright annual plant in the Pedaliaceae family that has been cultivated since ancient times for its seeds, which are used as food and flavouring and from which a valuable oil is derived **[29]**. These seeds are well-known for their nutty crunch and sweet flavour, and they are frequently used in Indian cookery. They can be black, white, or brown in appearance, and they are also utilised to extract sesame oil. In south Indian cooking, sesame oil is typically used as a lubricant, preservative, taste enhancer, and tempering agent. Sesame oil is a good substitute for baking because it is almost flavourless and odourless. Three tablespoons (30 grammes) of them provide roughly 20% of the recommended daily intake of zinc.

27. Tamarind

Tamarindus indica is its scientific name, and it is a member of the Fabaceae family **[30]**. Similar to how lemon juice is popular in Western culture, concentrated tomato pulp is used as a flavouring in East Indian and Middle Eastern cuisine. It is used to season foods with bold flavours, like pickled fish, spicy dishes, and chutneys. Tamarind is often used to flavour soft drinks with a sweet syrup. In addition, it has 1 gramme of fat, 3 grammes of protein, and 6 grammes of fibre. It provides 287 calories in total, about all of which come from sugar. Actually, 69 grammes of carbohydrates in the form of sugar, or 17.5 teaspoons, may be found in just one cup of tamarind.

28. Turmeric

Curcuma longa, a flowering plant belonging to the Zingiberaceae family that produces ginger, is used in preparing. All Indian recipes typically call for always include the same component, such as a pinch of turmeric. Turmeric is regarded in India as a spice for healers. It's employed to improve the food's hue, flavour, and scent in most areas in Southern Asia. One spoonful of gramme of ground turmeric is 29 calories, about a two grammes of fibre, one gramme of protein, and six amounts of carbs in grammes. It also includes minerals like phosphorus,

manganese, and potassium. Magic is also included in turmeric nutrients.

CONCLUSION

All things considered, spices are diverse mixtures of both volatile and nonvolatile basic food additives. Each spice has a multitude of biological purposes and can be used as an additive. and cooperative measures that safeguard human body. India's diverse climate and geographical characteristics inherently have a large range of spices. Spices have traditionally been a part of food, adopting a comprehensive strategy. They are straight forward in charge of supplying the flavour, scent, taste and colour to the food items. Consequently, they are an essential component of any Indian kitchen. But the majority of these Indian spices have also been linked to numerous medicinal benefits and activities from the usual historical textbooks. The Ayurvedic medical system in India has given particular attention to All things considered, spices are varied blends of fundamental food additives that are both volatile and nonvolatile. Every spice can be added to food and has a variety of biological uses and collaborative actions that protect human body. India's varied weather and topography features are inherently broad in terms of spices. Traditionally, food has included spices implementing a detailed plan. They are simple to understand responsible for providing the taste and aroma. The food products' flavour and colour. As a result, they are a must-have in every Indian kitchen.

REFERENCES

[1] K. Srinivasan. Role of Spices Beyond Food Flavouring: Nutraceuticals with Multiple Health Effects. Food Reviews International. 2005; 21:167-188.

[2] Anupam KR Sachan, Sunil Kumar, Kiran Kumari and Deepti Singh. Medicinal uses of spices used in our traditional culture: Worldwide, Journal of Medicinal Plants Studies. 2018; 6(3): 116-122.

[3] Mradu Gupta. Pharmacological properties and traditional therapeutic uses of important Indian spices: A review. International Journal of Food Properties. 2010; 13: 1092–1116.

[4] Mohammad M. Zarshenas, Mahmoodreza Moein, Soliman Mohammadi Samani, Peyman Petramfar, An Overview on Ajwain (*Trachyspermum ammi*) Pharmacological Effects; Modern and Traditional, Journal of naturalremedies. 2014; 14 (1).

[5] BouchraSayed-Ahmad, Thierry Talou, ZeinabSaad, AkramHijazi,

OthmaneMerah. The Apiaceae: Ethnomedicinal family as source for industrial uses, Industrial Crops & Products. 2017; 109: 661–671.

[6] Poonam Mahendra and Shradha Bisht. Ferula asafoetida: Traditional uses and pharmacological activity. Pharmacogn Rev. 2012; 6(12): 141–146.

[7] M. Elmastas, I.Gulcin, O.Isildak, O.I.Kufervioglu, K.Ibaoglu and H.Y. Aboul-Enein . Radical Scavenging Activity and Antioxidant Capacity of Bay Leaf Extracts. Journal of the Iranian Chemical Society. 2006; 3: 258-266.

[8] Asma Saeed, Bushra Sultana, Farooq Anwar, Muhammad Mushtaq, Khalid M. Alkharfy and Anwarul Hassan Gilani. Antioxidant and Antimutagenic Potential of Seeds and Pods of Green Cardamom (*Elettaria cardamomum*). International Journal of Pharmacology. 2014; 10 (8): 461-469.

[9] Morrine A Omolo, Zen-Zi Wong, Amanda K Mergen, Jennifer C Hastings, Nina C Le, Holly A Reiland, Kyle A Case and David J Baumler. Antimicrobial Properties of Chili Peppers. J Infect Dis Ther. 2014; 2(4): 1-8.

[10] Imadhadi hameed, Huda jasimaltameme and Ghaidaa jihadi mohammed. Evaluation of Antifungal and Antibacterial Activityand Analysis of Bioactive Phytochemical Compounds of *Cinnamomum zeylanicum* (Cinnamon bark) using Gas Chromatography-Mass Spectrometry. Oriental journal of chemistry. 2016; 32(4): 1769-1788.

[11] Han X, Parker TL. Anti-inflammatory activity of clove (*Eugenia caryophyllata*) essential oil in human dermal fibroblasts. Pharm Biol. 2017; 55(1): 1619-1622.

[12] Silva F, Ferreira S, Queiroz JA, Domingues FC. Coriander (*Coriandrum sativum* L.) essential oil: its antibacterial activity and mode of action evaluated by flow cytometry. J Med Microbiol. 2011; 60(10): 1479-1486.

[13] Gray A M, Flatt P R. Insulin-releasing and insulin-like activity of the traditional anti-diabetic plant *Coriandrum sativum* (coriander). Br J Nutr. 1999; 81(3): 203.

[14] Rani R, Kansal VK. Effects of cow ghee (clarified butter oil) & soybean oil on carcinogen-metabolizing

enzymes in rats. Indian J Med Res. 2012; 136(3): 460-5.

[15] Allahghadri T, Rasooli I, Owlia P, Nadooshan M J, Ghazanfari T, Taghizadeh M, Astaneh SD. Antimicrobial property, antioxidant capacity and cytotoxicity of essential oil from cumin produced in Iran. J Food Sci. 2010; 75(2): 54-61.

[16] B. Dineshkumar, Analava Mitra, Manjunatha Mahadevappa. Antidiabetic and hypolipidemic effects of mahanimbine (carbazole alkaloid) from murrayakoenigii (rutaceae) leaves. International Journal of Phytomedicine. 2010;2: 22-30.

[17] Umamaheswari M, Chatterjee T K. In vitro antioxidant activities of the fractions of *Coccinia grandis* L. leaf extract. Afr J Tradit Complement Altern Med. 2007; 5(1): 61-73.

[18] S. Kaviarasan, G.H. Naik, R. Gangabhagirathi, C.V. Anuradha, K.I. Priyadarsini. In vitro studies on antiradical and antioxidant activities of fenugreek (*Trigonella foenumgraecum*) seeds. Food Chemistry. 2007; 109: 31–37.

[19] Jang H J, Lee H J, Yoon D K, Ji D S, Kim J H, Lee C H. Antioxidant and antimicrobial activities of fresh garlic and aged garlic by-products extracted with different solvents. Food Sci Biotechnol. 2017; 27(1): 219-225.

[20] Mashhadi N S, Ghiasvand R, Askari G, Hariri M, Darvishi L, Mofid MR. Anti-oxidative and anti-inflammatory effects of ginger in health and physical activity: review of current evidence. Int J Prev Med. 2013; 4(1): S36-42.

[21] Reza Yaghoobi, Afshin Kazerouni, and Orykazerouni. Evidence for Clinical Use of Honey in Wound Healing as an Anti-bacterial, Anti-inflammatory Anti- oxidant and Anti-viral Agent: A Review. Jundishapur J Nat Pharm Prod. 2013; 8(3): 100–104.

[22] M A Harish, Nayaka, U V. Sathisha, M P Manohar, K B Chandrashekar, Shylaja M Dharmesh. Cytoprotective and antioxidant activity studies of jaggery sugar. Food Chemistry. 115(1): 113-118.

[23] Ch. Ravi Kiran, Y. Madhavi and T. Raghava Rao. Evaluation of Phytochemicals and Antioxidant Activities of Ceibapentandra

(Kapok) Seed Oil. J Bioanal Biomed. 2012; 4(4): 68-73.

[24] Pramila D M, Marimuthu K, Kathiresan S, Khoo M L, Senthilkumar M, Sathya K. Phytochemical analysis and antimicrobial potential of methanolic leaf extract of peppermint (*Menthapi perita: Lamiaceae*). Journal of Medicinal Plants Research. 2012; 6(2): 331-335.

[25] Yian Hoon Lee, Candy Choo & Viduranga Y. Waisundara. Determination of the Total Antioxidant Capacity and Quantification of Phenolic Compounds of Different Solvent Extracts of Black Mustard Seeds (Brassica nigra). International Journal of Food Properties. 2015; 8(11).

[26] Lalitha Priyanka Dwarampudi, Dhanabal Palaniswamy, Muruganantham Nithyanantham, and P. S. Raghu. Antipsoriatic activity and cytotoxicity of ethanolic extract of Nigella saliva seeds. Pharmacogn Mag. 2012; 8(32): 268–272.

[27] Chitrashenoy, M B Patil, Ravi kumar and swati patil. Preliminary phytochemical investigation and wound healing activity of *allium cepa* linn (Lilliaceae). International Journal of Pharmacy and Pharmaceutical Sciences. 2009; 2(2).

[28] Prashant B. Shamkuwar, Sadhana R. Shahi, Suvarna T. Jadhav. Evaluation of antidiarrhoeal effect of Black pepper (*Piper nigrum* L.). Asian Journal of Plant Science and Research. 2012; 2(1): 48-53.

[29] Bing-Lan Liu and Pei-Shiuan Chiang. Production of Hydrolysate with Antioxidative Activity and Functional Properties by Enzymatic Hydrolysis of Defatted Sesame (*Sesamum indicum* L). International Journal of Applied Science and Engineering. 2008; 6(2): 73-83

[30] J H Doughari. Antimicrobial Activity of *Tamarindus indica* Linn. Tropical Journal of Pharmaceutical Research. 2006; 5 (2): 597-603.