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SPICE UP YOUR CONSTITUTION: THE AYURVEDIC GUIDE TO KITCHEN HERBS

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ABSTRACT

The Indian kitchen is a treasure trove of spices that add elegance, flavour and taste to meals. India, the largest producer of spices due to its diverse climatic conditions, offers spices that hold significant medicinal value in alternative medicine systems, including Ayurveda. These spices serve as simple home remedies for managing various disorders and diseases. This review explores the effect of spices commonly used as Indian kitchen ingredients based on *Prakruti* of person. The objective is to study the medicinal value of spices used in the Indian kitchen, as described in the latest studies as per Ayurveda. Ayurvedic texts were meticulously analysed, and information on spices was systematically collected. Research on the pharmacological actions of the active principles of these spices was examined through various journals. Additionally, the effects of these spices on different doshas in humans were detailed based on their nature.

Keywords: Spices, *Prakruti*, *Dosha*

INTRODUCTION

In the Indian kitchen cabinet, alongside staple nutritional items, various spices are stored, which add elegance and aroma to food. The word "spice" originates from the old French word "*spice*", to which the Latin word "*spec*" is the root. Spices include dried seeds, fruits, roots, bark, or flowers and have been used for

thousands of years to improve food quality, taste, and nutrition. They are mainly used to season a food dish during its preparation and play a vital role in the Indian diet. They are also used in cosmetics and perfumes. A variety of spices used in Indian kitchens are described in Ayurveda. Besides enhancing flavour and colour, they have medicinal properties that treat various diseases. Ayurveda, the ancient science of life, emphasises the importance of food and nutrition. It highlights *Aahara* (food) through concepts like *Ahara Varga*[1] (food categories), *Rasapanchaka* (properties), *Aahara Vidhi Vidhana*[2] (dietary guidelines), *Ashta Aahara Vidhi Vishesha Aayatana* (eight food factors), *Nitya Sevaniya Aahara* (daily consumables), *Rutu Anusara Aahara* (seasonal diet), and diet according to *Prakruti* (body constitution) and *Vikruti* (disease).

Classical Ayurvedic texts explain *Aahara Dravya* (food substances) by *Rasa* (taste), *Guna* (qualities), *Veerya* (potency), *Vipaka* (final transformation), and *Karma* (functions). Ayurveda recognises six tastes, which include *Madhura* (sweet), *Amla* (sour), *Lavana* (salty), *Katu* (pungent), *Tikta* (bitter), and *Kashaya* (astringent). *Veerya* indicates potency, either *Ushna* (hot) or *Sheeta* (cold). *Vipaka* refers to biotransformation, categorised into *Madhura* (sweet), *Amla* (sour), and *Katu* (pungent). Karma relates to the effects on the body, comprising three *doshas* (*Vata*, *Pitta* and *Kapha*), *Dhatus* (tissues: *Rasa* - lymph, *Rakta* - blood, *Mamsa* - muscle, *Meda* - fat, *Asthi* - bone, *Majja* - marrow, *Shukra* - reproductive system), and *Malas* (wastes: *Sweda* - sweat, *Mutra* - urine, *Purisha* - faeces). This article aims to evaluate the effect of essential spices used in the Indian kitchen according to their *Rasapanchak* based on different *prakruti* of a person according to Ayurveda texts and journals.

Material and method

This review systematically analysed Ayurvedic texts to collect information on various spices. We examined research on the pharmacological actions of the active compounds in these spices through numerous academic journals. Additionally, we detailed the effects of these spices on different doshas - *Vata*, *Pitta*, and *Kapha* - in humans based on their inherent properties. This review article covers commonly used spices in Indian kitchens, including ajwain, cumin, cinnamon, clove, curry leaves, anise, garlic, ginger, fennel, and mustard seed.

DISCUSSION

Review of each spice separately, including pharmacological activity according to Modern Scientific review and as per Ayurvedic literature review, is as follows:

1. ***Ajwain***: Scientifically known as *Trachyspermum ammi*, it belongs to the *Apiaceae* family and is a staple in Indian kitchens. They are commonly used for flavouring and tempering dishes. The significant component is thymol (39.1%), followed by p-cymene (30.8%), γ-terpinene (23.2%), β-pinene (1.7%), and terpinene-4-ol (0.8%): oleic acid, p-cymene, palmitic acid, xylene. Ajwain's volatile oil, rich in thymol, has a broad fungi toxic spectrum, inhibiting the mycelial growth of fungi such as Aspergillus niger, Aspergillus flavus, Aspergillus oryzae, Aspergillus ochraceus, Fusarium moniliforme, Fusarium graminearum, Penicillium citrinum, Penicillium viridicatum, Penicillium maturity, and Curvularia lunata. The volatile oil and acetone extract of ajwain are effective natural antioxidants, outperforming synthetic antioxidants like BHA and BHT[3]. Ajwain is also rich in protein, carbohydrates, fats, fibre, essential oils, minerals, calcium, potassium, sodium, phosphorus, thiamine, iron, and niacin. According to Ayurveda, ushna in Guna pacifies *Vata* and *Kapha doshas*. However, for individuals with pitta *prakruti*, excessive consumption of ajwain can aggravate *pitta*, leading to increased sensations of burning and hotness.
2. **Cumin**: Scientifically known as *Cuminum cyminum*, it belongs to the family *Umbelliferae*. It is often used whole or in spice blends to impart a distinctive smoky flavour to Indian dishes. Cumin fruits contain 2.5% to 4.5% essential oil. Identification of the following these key compo-

nents: α-pinene (0.5%), myrcene (0.3%), limonene (0.5%), 1-8-cineole (0.2%), p-menth-3-en-7-ol (0.7%), p-mentha-1, 3-dien-7-ol (5.6%), caryophyllene (0.8%), β-bisabolene (0.9%), β-pinene (13.0%), p-cymene (8.5%), β-phellandrene (0.3%), D-terpinene (29.5%), cuminic aldehyde (32.4%), cuminyl alcohol (2.8%), and β-farnesene (1.1%), along with smaller amounts of α-phellandrene, α-terpinene, cis and trans sabinene, myrtenol, α-terpineol, and phellandral are found in cumin. Besides volatile oils, cumin has nonvolatile components like tannins, oleoresin, mucilage, gum, proteins, and malates. This concludes that cumin has strong antioxidant potential. Its essential oil contains high levels of antioxidant compounds with significant activity[4]. According to Ayurveda, cumin's *ushna (*hot) quality helps to subside *Vata* and *Kapha doshas*. Thus, individuals with a *pitta prakruti* are advised to take it in moderation.

3. **Cinnamon** is scientifically known as *Cinnamomum zeylanicum* Blume and belongs to the Lauraceae family. It is used to enhance the flavour and has a warm and sweet flavour. It contains fat, potassium, carbohydrates, fibre, protein, vitamin A, calcium, iron, vitamin B6, and magnesium. Many in-vitro and in-vivo evidence suggests that it possesses antimicrobial, antiparasitic, antioxidant, and free radical scavenging properties. Additionally, cinnamon has shown beneficial cardiovascular effects by lowering blood pressure. It also appears to reduce blood glucose levels through several mechanisms, including reducing intestinal glucose absorption by inhibiting enzymes, stimulating cellular glucose uptake and glycogen synthesis, promoting insulin release, and enhancing insulin receptor activity.[5] According to Ayurveda, it is *ushna* in nature and *Madhura* in *rasa,* which decreases its hotness and subsides all *dosha.*
4. **Clove**: Scientifically known as *Syzygium aromaticum,* it belongs to the Myrtaceae family. It is a crucial ingredient in Indian cuisine, often combined with other whole spices (*khada masala*). Clove oil contains several phytoconstituents, including essential oil, eugenal acetate, and caryophyllene, with eugenol being a significant phenolic compound. It exhibits antimicrobial, antiviral, anti-inflammatory, hepatoprotective, antistress, antinociceptive, and anaesthetic properties. Additionally, clove's larvicidal activity is a new application in combating dengue. It also contains sodium, carbohydrates, fibre, protein, calcium, iron, and potassium.[6] According to Ayurveda, its cold nature pacifies *Pitta*, while its *Tikta* (bitter) and *Katu* (pungent) tastes stabilise excessive *Kapha dosha*. Therefore, it is recommended for individuals with *Pitta* and *Kapha prakruti*.
5. **Curry leaves**, scientifically known as *Murraya koenigii* from the *Rutaceae* family, are aromatic herbs prominently used in South Indian cuisine. The primary constituents of this plant include caryophyllene, terpene, menthol, menthone, carvomenthone, citral, and linalyl acetate. These compounds contribute to the distinctive flavour of curry leaves and impart several significant pharmacological activities. Notable effects include cardioprotective properties, anti-diabetic and cholesterol-lowering benefits, antimicrobial and antiulcer activities, antioxidative properties, cytotoxic effects, antidiarrheal properties, and enhanced phagocytic activity. [7] According to Ayurveda, it is k*1542ashaya* (astringent) and *tikta* (bitter) in taste and cold, which helps to subside *Kapha* and *Pitta doshas*.
6. **Anise**: Botanically, it is known as *Pimpinella anisum* and belongs to the *Apiaceae* family. Seeds contain essential compounds such as estragole, p-anisaldehyde, anise alcohol, acetophenone, pinene, and limonene, with anethole being the crucial volatile oil providing its sweet and aromatic flavour. It has antioxidant, antibacterial, antifungal, anticonvulsant, anti-inflammatory, analgesic, gastro-protective, antidiabetic, and antiviral properties. Additional benefits include stimulant, carminative, expectorant, insecticidal, digestive, antispasmodic, antirheumatic, antiseptic, antiepileptic, antihysteric, and heart-

strengthening effects, as well as easing hormonal problems and improving hair and skin health. Nutritionally, they are rich in B-complex vitamins (pyridoxine, niacin, riboflavin, and thiamin), minerals (including calcium, copper, potassium, iron, manganese, magnesium, and zinc), and antioxidant vitamins C and A.[8] According to Ayurveda it pacifies the *Kapha* and *Vata doshas* due to its nature.

7. **Garlic**: Botanically known as *Allium sativum*, it belongs to the Amaryllidaceae family—Garlic's active compound, allicin, forms when raw garlic is crushed, activating the enzyme allinase on allin. Studies show garlic can reduce total cholesterol by about 10% and improve HDL/LDL ratios. It lowers blood pressure by 5-7% and inhibits platelet aggregation, enhancing fibrinolytic activity and reducing clot formation. *Allium sativum* (garlic) is a significant medicinal plant with immunomodulatory effects. Using Q-Sepharose chromatography, three immunomodulatory proteins (QR-1, QR-2, and a third) were isolated from raw garlic extract. These proteins demonstrate mitogenic activity on human peripheral blood lymphocytes, murine splenocytes, and thymocytes. Identified as lectins or agglutinins, ASA II and ASA I, QR-1 and QR-2 show potent mitogenic activity, suggesting their potential in therapeutic immunomodulation[9].According to Ayurveda, it is hot and thus subsides *Vata* and *Kapha dosha* but can increase *Pitta dosha*.
8. **Ginger**: *Zingiber officinale* belongs to the family *Zingiberaceae.* Ginger is rich in active compounds, particularly phenolics and terpenes. The main phenolic compounds are gingerols, schools, and parasols, with primary polyphenols in fresh ginger, including 6-gingerol, 8-gingerol, and 10-gingerol. Additional phenolics include 6-dehydrogingerdione, zingerone, quercetin, and gingerenone-A. Key terpene components in ginger essential oils are β-bisabolene, α-curcumene, zingiberene, α-farnesene, and β-sesquiphellandrene. Ginger exhibits numerous health benefits, including anti-inflammatory, hypolipidemic, anti-atherosclerotic, antiemetic, anti-ulcer, antiplatelet, antipyretic, antioxidant, antibacterial, antifungal, antitumor, antiretroviral, and analgesic properties.[10] According to Ayurveda, it is hot, thus subsiding *Vata* and *Kapha dosha* but can increase *Pitta dosha*.
9. **Fennel**: *Foeniculum vulgare*, commonly known as fennel, belongs to the *Umbelliferae* family. Widely used in Indian cuisine, fennel is primarily utilised in seed form. In India, fennel seeds are often chewed after meals to aid digestion and act as a natural mouth freshener. Fennel seeds are a rich source of volatile oils, with fenchone and trans-anethole as the major compounds, along with limonene, camphene, and alpha-pinene. They are known to alleviate gas, cramps, acid indigestion, and various other digestive issues. Nutritionally, fennel seeds are rich in sodium, potassium, carbohydrates, fibre, protein, vitamin A, calcium, vitamin C, iron, and magnesium[11]. According to Ayurveda, it is cold, thus subsiding *Pitta dosha*.
10. **Mustard seeds**: *Brassica nigra* belongs to the *Cruciferae* family. It is one of our kitchen's essential herbs, rich in oil and protein, and contains numerous bioactive compounds, including glucosinolates and phenolics. These compounds enhance mustard's quality as a food source and offer significant health benefits. Phenolics such as sinapine and sinapic acid are well-known antioxidants and exhibit anticancer properties. When heated, sinapic acid decarboxylates into canola, a phenolic derivative with antioxidant and anticancer benefits. Extracting these valuable phenolic compounds from mustard highlights their importance[12]. Ayurveda says it is hot, thus subsiding *Vata and Pitta dosha*.

CONCLUSION

India's diverse climate and geography naturally produce various spices essential to the Indian diet. These spices are renowned for their aroma, flavour, and numerous health benefits, making them indispensable in every Indian kitchen. Historically, spices have

been recognised for their therapeutic properties in traditional texts, especially Ayurveda, which emphasises their medicinal benefits. Scientific studies confirm that many Indian spices possess significant therapeutic properties, such as digestives, analgesics, hepatoprotectives, antidiabetics, antimicrobials, and antioxidants. However, excessive consumption can lead to side effects, particularly for individuals with a *Pitta* (hot) constitution, as most herbs are *ushna* (hot). Thus, consuming spices in moderation and according to one's constitution is essential.

REFERENCES

1. Vagbhata, Ashtanga Hridaya, Hindi Commentary by Dr. Harishchandra Simha Kushwaha, Sutra sthana, Chapter 6, Varanasi, Chaukhamba Orientalia, 1st edition, pg: 242-345.
2. Charak samhita of Agnivesha, elaborated by Charaka & Dridhabala, Chakrapanidutta commentary, Vimana Sthana, Chapter 1, Verse 24, pg:236.
3. Singh G, Maurya S, Catalan C, De Lampasona MP. Chemical constituents and antifungal and antioxidative effects of ajwain essential oil and its acetone extract. Journal of agricultural and food chemistry. 2004 Jun 2;52(11):3292-6.
4. Nadeem M, Riaz A. Cumin (Cuminum cyminum) as a potential source of antioxidants. Pakistan Journal of Food Sciences. 2012;22(2):101-7.
5. Ranasinghe P, Pigera S, Premakumara GS, Galappaththy P, Constantine GR, Katulanda P. Medicinal properties of 'true cinnamon (Cinnamomum zeylanicum): a systematic review. BMC complementary and alternative medicine. 2013 Dec;13:1-0.
6. Ayushi KU, Danish SM, Mohammad PU. A review on biological and therapeutic uses of Syzygium aromaticum Linn. (Clove): Based on phytochemistry and pharmacological evidence. International Journal of Botany Studies. 2020;5(4):33-9.
7. Batool S, Khera RA, Hanif MA, Ayub MA, Memon S. Curry leaf. InMedicinal Plants of South Asia 2020 Jan 1 (pp. 179-190). Elsevier.
8. Sun W, Shahrajabian MH, Cheng Q. Anise (Pimpinella anisum L.) is a dominant spice and traditional medicinal herb used for both food and medicinal purposes. Cogent Biology. 2019 Jan 1;5(1):1673688.
9. Londhe VP, Gavasane AT, Nipate SS, Bandawane DD, Chaudhari PD. Role of garlic (Allium sativum) in various diseases: An overview. Angiogenesis. 2011;12(13):129-34.
10. Kumar Gupta S, Sharma A. Medicinal properties of Zingiber officinale Roscoe-A review. J. Pharm. Biol. Sci. 2014;9:124-9.
11. Javed R, Hanif MA, Ayub MA, Rehman R. Fennel. InMedicinal Plants of South Asia 2020 Jan 1 (pp. 241-256).
12. Grygier A. Mustard seeds as a bioactive component of food. Food Reviews International. 2023 Aug 25;39(7):4088-101.

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