International Journal of Botany Studies
www.botanyjournals.com
ISSN: 2455-541X
Received: 17-05-2021, Accepted: 01-06-2021, Published: 16-06-2021
Volume 6, Issue 3, 2021, Page No. 721-723

Coriandrum sativum in the times of Covid-19

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Abstract
Herbal medicine is that the oldest sort of medicine known to mankind. Plants generally produce many secondary metabolites which are bio-synthetically derived from primary metabolites and constitute an important source of many pharmaceutical drugs. The phytochemical screening of coriander showed that it contained volatile oil, tannins, Terpenoids, reducing sugars, alkaloids, phenolics, flavonoids, fatty acids, sterols and glycosides. It also contained high nutritional values including proteins, oils, carbohydrates, fibers and wide selection of minerals, trace elements and vitamins. The previous pharmacological studies done on it revealed that it possessed anxiolytic, antidepressant, sedative-hypnotic, anticonvulsant, memory enhancement, improvement of orofacial dyskinesia, neuroprotective, antibacterial, antifungal, anthelmintic, insecticidal, antioxidant, cardiovascular, detoxification, anti-inflammatory and many other pharmacological effects. The current review gives an overview on the multiple usage of Coriandrum sativum that makes it very useful in this time of Covid-19.

Keywords: *Coriandrum sativum*, antifungal, neuroprotective, antioxidant, anti-inflammatory, covid-19

Introduction

Plant Profile

Synonyms: Coriandropsis syriaca H. Wolff, Coriandrum globosum Salisb, Coriandrum majus Gouan, Selinum coriandrum Krause.

Taxonomic classification

Kingdom: Plantae; Subkingdom: Tracheobionta; Superdivision: Spermatophyta; Division: Magnoliophyta; Class: Magnoliopsida; Subclass: Rosidae; Order: Apiales; Family: Apiaceae; Genus: Coriandrum L.; Species: Coriandrum sativum L

Common names

Arabic: kuzbara, kuzbura; Chinese: yuan Sui, hu Sui; English: coriander, cilantro, collender, Chinese parsley; French: coriander, coriandre cultivé; German: Koriander, Wanzendill, Schwindelkorn; Greek: koriannon, korion; Hindi: dhania, dhanya; Italian: coriandolo, coriandro; Japanese: koendoro; Portuguese: coentro, coriandro; Sanskrit: dhanayaka, kusthumbari; Spanish: coriandro, cilantro, cilandrio, cilantro; Swedish: coriander

Distribution

Coriandrum sativum probably originated from Eastern Mediterranean and it had been spread as a spice plant to India, China, Russia, Central Europe, and Morocco, and has been cultivated since human antiquity. However, now it is found worldwide.

Description

It is an upright short-lived herb growing 1-2 m. Stems and leaves: The stems are branched and glabrous, hollow, having longitudinal grooves. They are pale green in color with purplish or pinkish patches. The leaves are deeply divided (i.e. bi-Pinnatisect), and are serrated, ferny in appearance. The upper surfaces are dark green in color, while undersides are paler green or greyish-green. The stems and leaves give odor when crushed. **Flowers and Fruit**: The flowers are white and are in large numbers while individual flowers are small (2-4 mm across), have five incurved petals and five stamens. Flowering occurs mostly during spring and summer. The fruit are green to greyish-brown in color as it matures and forms a capsule. It consists of two one-seeded structures that split apart when the fruit is mature. Each of these are, 2-4 mm long, hairless and has five prominent yellowish-colored ribs. There are many sorts of coriander which differ within the fruit size and oil yield.
Parts used: Fruit and fresh leaves

Traditional Uses

The use of coriander dated back to around 1550 BC, and it had been one among the oldest spice crops within the world. Medicinally, it had been used as stimulant, aromatic and carminative. They are chiefly used medicinally as flavouring agent to cover the pungent taste and also for their proper griping tendencies. The fruit is an ingredient of pickling spices, as flavor of commercial foods, particularly, instant soups and dishes like cakes, breads and pastries, alcoholic beverages etc. The fruit volatile oil was a standard ingredient in creams, detergents, surfactants, emulsifiers, lotions, and perfumes.

Traditional medicinal uses

1. Seeds are applied locally to alleviate swelling and pains.
2. Paste of green coriander is employed for headache.
3. Externally, powdered green coriander is employed to alleviate burning sensation and pain in diseases like inflammation caused by erysipelas and lymphadenopathy.
4. Decoction of green coriander is employed in stomatitis.
5. Nasal drops of green coriander act as a haemostat and thus stop bleeding in epistaxis.

6. Juice or decoction of green coriander is employed in conjunctivitis.
7. The seeds are included in many prescriptions as carminative and for the treatment of fever, diarrhoea, vomiting and indigestion.
8. Coriander is employed internally as tonics.
9. It is additionally used for syncope and amnesia.
10. Fresh juice of leaves was used as gargle in pharyngitis and stomatitis.
11. Paste of leaves are locally applied for swellings and boils. Physicochemical characteristics: Total ash: less than 6 per cent, acid insoluble ash: less than 1.5 per cent, water-soluble extractive: less than 19 per cent, alcohol soluble extractive: less than 10 per cent and volatile oil: more than 0.3% v/w

Chemical Constituents

kcal, protein 21.93 and 12.37 g, total lipid (fat) 4.78 and 17.77 g, carbohydrate 52.10 and 54.99 g, fiber 10.40 and 41.9 g, calcium 1246 and 709 mg, iron 42.46 and 16.32 mg, phosphorus 481 and 409 mg, magnesium 694 and 330 mg, potassium 4466 and 1267mg, sodium 211 and 35 mg, zinc 4.72 and 4.70 mg, vitamin C 566.7 and 21 mg, thiamin 1.252 and 0.239 mg, riboflavin 1.500 and 0.290 mg, niacin 10.707 and 2.130 mg, vitamin B-120.00 and 0.00 µg, vitamin A, RAE 293 and 0.00 µg, vitamin A, IU 5850 IU and 0 IU and vitamin D (D2 + D3) 0.00 and 0.00 µg, respectively.The phytochemical screening of plant showed the presence of essential oil, tannins, terpenoids, reducing sugars, alkaloids, phenolics, flavonoids, fatty acids, sterols and glycosides.

The most important constituents of coriander fruits were the essential oil and fatty oil. The essential oil content of dried coriander fruits varies between 0.03 and 2.6%, while the fatty oil content varies between 9.9 and 27.7%. The variations in the oil constituents of Coriandrum sativum leaves and seeds may be due to the variations in the cultivar not due to geographic divergence and ecological conditions. Many isocoumarins were isolated from the aerial parts of Coriandrum sativum, including coriandrone A, coriandrone B, isocoumarins, coriandrin and dihydrocoriandrin. Caffeic acid, protocatechinic acid, and glycitin were characterized as the major polyphenolics of coriander aerial parts. And many flavonoids including caffeic acid, chlorogenic, quercetin and rutin. However, the total polyphenolic content of the seeds was found to be 12.2 gallic acid equivalents (GAE)/g while total flavanoid content was found to be 12.6 quercetin equivalents/g. The amount of flavonoids in 70% ethanol extract was found to be 44.5 µg and that of the total phenols was 133.74 µg gallic acid equivalents per mg of the hydro-alcohol extract of Coriandrum sativum leaves.

Pharmacological Effects

Due to all the phytochemicals presents there are a lot of pharmalogical effects that Coriandrum sativum show, which are as below-

- Anxiolytic effect
- Antidepressant effect
- Sedative-hypnotic effect
- Anticonvulsant effect
- Effect on memory
- Antibacterial, antifungal, anthelminthic and insecticidal effect
- Antioxidant effect
- Hypolipidemic effect
- Anti-inflammatory and analgesic effect
- Gastrointestinal effect
- Detoxification effect

Discussion

As in these times of covid-19 patients and their families are not at the risk of physical health issues as well as maintaining mental wellbeing is a great challenge too. All the symptoms that covid-19 shows are- fever, headache, diarrhea, malaise, body ache, weakness, cough, cold, loss of taste, loss of smell, sore throat, breathing difficulties, deranged lipid profiles. According to the pharmacological effects based on the chemicals presents and the traditional medicinal uses we see that it works on overall every symptom of Covid-19. Not only the physical parameters but also the psychological benefits of the drug make it useful for consumption in day to day life. We can take it as decoction, as a spice in daily food, as paste of fresh leaves for local application.

Conclusion

Hence in the present times it is advisable to consume Coriandrum sativum in daily routine by healthy individuals to remain healthy and patients to take benefits of its properties and become healthy.

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