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A CONCEPTUAL REVIEW – CHANDRASHUR (LEPIDIUMSATIVUM)

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ABSTRACT
Chandrashoor is the seed of the Garden Cress plant. Garden Cress is an annual herb in the mustard family and is grown throughout India for its densely nutritious leaves and seeds. The leaves are commonly eaten in salads and ground into a pesto-like paste for bread. As a folk remedy, the entire plant is crushed and used to make infusions for a range of nutritional needs and to fend off many different ailments. Chandrashoor seeds, also known as haloon or halam, are a source of protein, dietary fiber, minerals, amino acids, Omega 3 fatty acids and antioxidants. In this article the Garden cress plant is described according to ancient view of Ayurveda as well as modern science.

KEYWORDS: dietary fiber, minerals, amino acids, Omega 3.

INTRODUCTION

Chandrashuris an Ayurvedic medicinal plant native to Ethiopia, native to India. Halim seeds are an essential nutritional plant of India used since ancient times. With the scientific name Lepidium Sativum.

Halim seeds fall under 'functional foods' which provides nutrition to the body and promote overall well being. The tiny seeds gives a pack punch of benefits which cannot be underrated. It can be munch by adding them to soup, salads or stews.

Sanskrit Synonyms

Chandrika, Charmaharini, Pashumehankarika, Nandini, Karavi, Bhadra, Suvasara, Vasapushpa, Raktabeeja.

Regional Name

Latin name –Lepidiunsativum.
English name – Aliv seeds, garden cress, garden pepper cress.
Hindi name – Chansoor, Chandrashoor.
Sanskrit name – Chandrika, Bhadra, Nadini, Karvi.
Bengali name – Halimshaak.
Kannada name – Alavibeeja.
Gujarati name – Asheliyo.
Tamil name – Alivirai
Telugu name – Adeli
Assamese name – Halim
Kashmiri name – Alian
Malayalam name – Asali
Punjabi name – Halium
Oriya name – Hidambasafa
Farsi name – Sipandan
Arbian name – Habburshad
Spanish name – Lepido
French name – cresson de fontaine
Urdu name – Halim
German name – Gartenkresse
Russian name – Kress-salat
Italian name –Agretto
Indonesian name – Alim
Persian name – Haleh

Plant

Synonyms- Arabischinensis, Cardamonsativum, Crucifera nasturtium, Lepiasativa, Lepidiumhortense, Lepidiumsativum var. crispum, Lepidiumsativum subsp. sativum, Lepidiumsativum var. spinescens, Lepidiumsativum subsp. spinescens, Lepidiumspinescens, Nasturtium crispum, Nasturtium sativum, Nasturtium spinescens, Thlaspi nasturtium, Thlaspisativum and Thlaspidiumsativum

Cultivation and collection cultivation and collection

Maincharacteristics for cultivation of chandrasoor characteristics for cultivation of chandrasoor characteristics for cultivation of chandrasoor 1. Animals cannot graze standing crop of chandrassor.
2. If irrigation is possible one of two times, then good yield can be obtained.
3. Chandrasoor can be cultivated in different types of soil, it can tolerate light acidity.
4. Its crop is not affected by insect.
5. It does not require more fertilizer.

6. It is a crop which needs less capital and comparatively good yield means benefit is more.
7. It is useful drug in the treatment of burn, digestion and urinary tract infections.
8. The growth of chandrasoor increases rapidly so weeds cannot develop. Thus weeds are selfcontrolled in the fields.
9. Chandrasoor uses in ayurvedic medicine like chandrasoormodak, chandrasooryauogu, and chandrasoorkheer.

Cultivation

Lepidiumsativam (Cress) is an easily grown plant with few requirements. It can be broadcast after the winter frosts or throughout the years in temperate climates. However Bontelou and Boutelon were already recommending sowing in shallow furrows which enables surplus plants to be tinned out and facilitates hoeing. Sowing has to be repeated every ten to twenty days so that there is no storage of young shoots and new leaves for salads. The leaves at earlier sowings begin to get tough and at no longer usable. The seed sprouts four or six days after sowing depending on the season and the leaves are ready for consumption after two or three weeks. The usual form of cultivation continues to be described with 15 to 20 cm between rows and the use of irrigation in the summers since they are lightly rooted seeding which can dry up in a few days. Its growth is very rapid and harvesting can begin in the same month as sowing; with yields reaching 6 tones per hectare13. Its cultivation is done in the season of rabbi crops. It is grown by spraying in the properly prepared field. It can also be cultivated in weak soil of water cannel capability14. After plaguing 3-4 times, seeds are grown in the field of 8-10 kg/ hectare. It is useful if irrigation is done one or two times15.

Collection of seeds

The crop is ready within a period of 90 Collection: -120 days. The cutting of crop started when the crops seems to be direct yellowish. This dried yellowish plant is cut with the help of hand and equipments and the material is dried for 2-3 days. It is packed in bags after cleaning and drying in the light shade. It is cultivated 14 to 16 quintal/ hectare quantity.

Macroscopic Characters

It is an erect annual herb Macroscopic Characters: up to 80 cm tall, more or less glaucous; stem terete or finely striate, profusely branched, glabrous.

Leaves are alternate, irregularly pinnate, up to 12 cm × 9 cm; petiole up to 4 cm long; leaflets 5–11, in outline ovate or obovate, pinnatisect, the ultimate lobes usually irregularly toothed, sparsely hairy above, glabrous below, leaflets of higher leaves gradually becoming linear, upper leaves usually simple and linear, sometimes lobed or with teeth.

Inflorescence a terminal or axillary raceme 1–3 cm long, accrescent to 25 cm when fruiting. Flowers bisexual, regular, 4-merous; pedicel 1.5–4.5 mm long, ascending; sepals ovate, 1–2 mm long; petals spatulate with short claw, up to 3 mm long, white or pale pink; stamens 6, anthers usually purplish; ovary superior, flattened, apex emarginate, style up to 0.5 mm long, stigma capitate. Fruit a round or ovate, flattened silique 4–6 mm × 3–5.5 mm, pale green to yellowish, margins wing-like, apex emarginate, dehiscing by 2 valves, usually 2-seeded.

Seeds ovoid, flattened, 2–3 mm long, pale brown to almost black. Seedling withepigeal germination; cotyledons 3- foliolate, leaflets spatulate, lateral ones smaller than central one. Other species are L. comperstre and L. ruderale, which also have edible leaves.

Common cress with regard to the anatomy of leaf, steam and root has been divided into three botanical varieties - vulgare, crispum and latifolium.

The letter in the most mesomorphic, crispum is the most xeromorphic and vulgare is intermediate. Cress and its relatives species display a spicy aroma and a refreshing peppery pungent taste lasting only a few seconds.

Microscopic Characters

The transverse section of s Microscopic Character seed showed presence of testa, tegmen, alleurone layer, endosperm and embryo.

Testa was thick, 1-2 layered and appeared yellowish brown whereas; tegmen layer was attached to inner side of testa layer and appeared as single layer.

Endosperm was composed of thick walled polygonal cells.

Embryo appeared as innermost structure surrounded by endosperm cells. The cells of embryo were small in size and polygonal in shape. In normal seed, the outer cover testa was present and the inner layer tegmen is attached to inner side of testa layer.

Transverse section showed distinct endosperm layer from embryo provided with aleurone layer. Small embryo occurs in groves, consisting shield shaped cotyledon known as scutellum.

Nutritional value

Raw cress is 89% water, 6% carbohydrates (including 1% dietary fiber), 3% protein and less than 1% fat (table). In a 100-gram (3+1⁄2-ounce) reference quantity, raw cress supplies 134 kilojoules (32 kilocalories) of food energy and numerous nutrients in significant content, including vitamin K (516% of the Daily Value, DV), vitamin C (83% DV) and vitamin A (43% DV). Among dietary minerals, manganese levels are high (26% DV) while several others, including potassium and magnesium, are in moderate content (table).

Nutritional value per 100 g (3.5 oz)

Energ	134 kJ (32 kcal)
Carbohydrates	5.5 g
Sugars	4.4 g
Dietary fiber	1.1 g
Fat	0.7 g
Protein	2.6 g
Vitamins	Quantity%DV†
Vitamin A equiv.	43%346 µg
beta-Carotene	38%4150 µg
lutein zeaxanthin	12500 µg
Thiamine (B1)	7%0.08 mg
Riboflavin (B2)	22%0.26 mg
Niacin (B3)	7%1 mg
Pantothenic acid (B5)	5%0.247 mg
Vitamin B6	19%0.247 mg
Folate (B9)	20%80 µg
Vitamin C	83%69 mg
Vitamin E	5%0.7 mg
Vitamin K	516%541.9 µg
Minerals	Quantity%DV†
Calcium	8%81 mg
Iron	10%1.3 mg
Magnesium	11%38 mg
Manganese	26%0.553 mg
Phosphorus	11%76 mg
Potassium	13%606 mg
Other constituents	Quantity
Water	89.4 g

Units
µg = micrograms • mg = milligrams IU = International units
†Percentages are roughly approximated using US recommendations for adults.

Chemical constituents
Chemical constituents absorbed/100 g): 122±0.70, 131±3.26 and 123±1.68 . The preliminary phytochemical analysis of Lepidiumsativum showed that it contained cardiac glycoside, alkaloids, phenolic, flavonoids, cardiotonic glycosides, coumarins, glucosinolates, carbohydrates, proteins and amino-acids, mucilage, resins, saponins, sterols, tannins, volatile oils, triterpene, sinapic acid and uric acid.

Ayurvedic properties
Whole plant – Laghu, Rooksha,Teekshna .
Seeds – Snigdha ,Pichhila.
Rasa – Katu (Pungent)
Vipak – Katu
Veerya – Ushna
Effect onTridoshas–Balances Kapha and Vata.
Part Used– Seeds
Dosage – Powder 1 – 3 gm.

Formulations
ChaturbeejaChurna
VataVidhwansRas
Dhanvanthararishtam

Traditional uses
The seeds of Lepidiumsativum were used as an aperient, diuretic, tonic, demulcent, carminative, galatogogue, emmenagogue, to cure throat diseases, uterine tumour, nasal polyps and breast cancer.

Seeds were supplemented in the diet of lactating women to increase the milk secretion during the postnatal period. Seeds also applied as a poultice to pains, hurts, sprains, in the treatment of bacterial and fungal infections.

The seeds were also used for the treatment of fracture healing in Saudi traditional medicine.

In Unani system of medicine, seeds and leaves were used as diuretics, aperient and aphrodisiac, and were recommended in inflammation, bronchitis, rheumatism and muscular pain.

In Turkish folk medicine, Lepidiumsativum was used as to enhance digestion, as carminative and appetizer.

The plant was eaten and seed oil was used in treating dysentery, diarrhea and migraine. The mucilage in the outer seed was used as a substitute for tragacanth and gum Arabic

Therapeutic uses
For hair problem
Halim seeds help manage hair loss. According to nutritionist RujutaDivekar, mixing Halim seeds with milk, especially warm milk, and drinking the concoction will do wonders for your hair.

In pregnancy
Halim seeds encourage the production of red blood cells and also help in improving the levels of haemoglobin in the body since just a tablespoon of Halim seeds contain around 12 mg of iron. This is especially significant since you need iron during your pregnancy. The abundance of calcium in aliv/Halim seeds helps strengthen the baby's teeth and bones.

In weight loss
It is advisable to consume Halim seeds for weight loss. They are rich in protein and hence can help you avoid hunger pangs or overeating, thereby assisting in weight management. These seeds also allow one to maintain the muscle mass of the body.

Obesity is a huge problem worldwide. Though Halim or garden cress seed is high energy and high-fat (it provides 454 Kcal and 24.5 gm fat per 100g seeds), they are still beneficial since.

- Halim seeds are an excellent source of fibre (7.6g per 100g of seeds), so they take more time to be ingested and digested. This automatically reduces the food intake.
- Halim seeds are loaded with antioxidants.

- Optimum blood glucose level is maintained by consuming Halim seeds.

Irregular menses
Consuming Halim seeds for periods is one of the ways to battle period-related issues. Halim seeds contain phytochemicals that tend to imitate estrogen, which helps in managing irregular periods. It is a natural way to egulariz irregular menstrual cycles by egularizing hormones.

Increases height
It would help if you took Halim seeds for height increase since they are known to promote the production of growth hormones.

For healthy skin
Halim makes our skin glow since it contains antioxidants and various vital nutrients for skin.

For lactating mother
Being rich in iron and protein, Halim seeds provide nutrition to lactating mothers. Halim is one of the most common kinds of galactagogues, which are foods used to induce, maintain and increase breast milk production.

Improves immunity
Since Halim seeds are loaded with folic acid, flavonoids and vitamins C, A and E, they help improve immunity. Its antimicrobial properties help prevent cold, fever, and sore throat.

Improves bowel movements
The high-fibre content of Halim seeds helps improve bowel movements and hence help manage bloating, constipation and gas.