



Coriander Cultivation in India

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INTRODUCTION

The *Coriandrum* genus includes *Coriandrum sativum* L. (cultivated) and *Coriandrum torquatum* (wild) species having a diploid chromosome ($2n = 22$) belonging to the family *Umbelliferae* with compound umbel inflorescence. It is used as a dual-purpose crop (seed and green leaves) grown the whole year by adopting good agronomical practices and according to the climatic conditions. The seeds and leaves possess a unique fragrance and taste, hence are used to flavor the food in different ways. It is commonly used in cooking as a seed spice, and it is also a good source of phenolics and flavonoids, pharmaceutical and medicinal roles. Coriander crop suffers, from different diseases which is one of the limiting factors in its production.

It is commonly known as cilantro or dhania or Chinese parsley and has originated in the Mediterranean region. It is probably one of the first spices used by mankind, having been known as early as 5000 BC. Globally, it is cultivated in India, Malaysia, UAE, Singapore, the United Kingdom, South Africa, and Indonesia. India is the largest producer, consumer, and exporter of coriander (Saxena and Gandhi, 2015).

Scientific classification

Kingdom: Plantae

Clade: Tracheophytes

Clade: Angiosperms

Order: Apiales

Family: Apiaceae

Genus: *Coriandrum*

Species: *C. sativum*

Coriander is native to regions spanning from Southern Europe and Northern Africa to Southwestern Asia.

Biology - It is a soft plant growing to 50 cm (20 in) tall. The leaves are variable in shape, broadly lobed at the base of the plant, and slender and feathery higher on the flowering stems. The flowers are borne in small umbels, white or very pale pink, asymmetrical, with the petals pointing away from the center of the umbel longer (5–6 mm or $\frac{3}{16}$ – $\frac{1}{4}$ in) than those pointing toward it (only 1–3 mm or $\frac{1}{16}$ – $\frac{1}{8}$ in long). The fruit is a globular, dry schizocarp 3–5 mm ($\frac{1}{8}$ – $\frac{3}{16}$ in) in diameter. Pollen size is approximately 33 μ m (0.0013 in).

Nutritional value- Coriander or cilantro is a wonderful source of dietary fiber, manganese, iron, and magnesium as well. In addition, coriander leaves are rich in Vitamin C, Vitamin K, and protein. They also contain small amounts of calcium, phosphorous, potassium, thiamin, niacin, and carotene.

The health benefits of coriander leaves:

1. Coriander lowers bad cholesterol (LDL) and increases the levels of good cholesterol. (HDL).
2. A very good food for the digestive system, coriander promotes liver functions and bowel movements.
3. Coriander is good for diabetes patients. It can stimulate insulin

secretion and lower blood sugar levels.

4. Vitamin K in it is good for the treatment of Alzheimer's disease.
5. The fat-soluble vitamin and antioxidant- Vitamin A, protects from lung and cavity cancers.
6. Coriander contains anti-inflammatory properties. This is why it is good against inflammatory diseases such as arthritis.
7. Coriander's antiseptic properties help to cure mouth ulcers.
8. Coriander is good for the eyes. Antioxidants in coriander prevent eye diseases. It's a good remedy in the treatment of conjunctivitis.
9. Coriander seeds are especially good for the menstrual flow.
10. It's a very good herb to promote the nervous system. It can stimulate memory.
11. Coriander helps those suffering from anemia. Coriander contains high amounts of iron, which is essential for curing anemia.

CORIANDER SEEDS NUTRITION IN 100g

Calories	Net weight	% Daily value
Total fat	0.5 g	1
Sodium	46 mg	2
Total carbohydrate	3.7 g	1
Dietary fiber	2.8 g	10
Sugar	0.9 g	-
Protein	2.1 g	4
Calcium	67.0 mg	5
Iron	1.77 mg	10
Potassium	521 mg	11

Package and practices:

Climate: Coriander is a tropical crop and requires a frost-free climate, particularly at the time of flowering and seed formation. Dry and moderately cool climate increases yield as well as the quality of the produce. Coriander grows well if there is more than 200 mm of rainfall during the growing season.

Soil: Well-drained silt or loamy soils are suited for cultivation. For rainfed cultivation, the soil should be clay in nature and the pH should be 6 – 8. Coriander performs well at a temperature range of 20 – 25 °C.

Land preparation: Prepare the main field to a fine tilth and form beds and channels (for irrigated crops). Sow the split seeds at a spacing of 20 x 15 cm. The seeds will germinate in about 8-15 days. Presowing seed hardening treatment with Potassium Dihydrogen Phosphate @ 10g/lit of water for 16 hours is to be done for a rainfed crop. Seeds are to be treated with *Azospirillum* @ 3 packets/ha. Seed treatment with *Trichoderma viride* @ 4 g/kg of seed has to be done to control wilt disease.

Variety:

- Sadhana (CS-4)
- Sindhu (CS-2)
- Sudha (LCC-128)
- Swathi (CS-6)
- APHU Dhanial-1 (LCC-170)
- Suguna (LCC-236)
- Suruchi (LCC-234)
- Susthira (LCC-219)

Sowing time: For the vegetable purpose, the optimum time for sowing is the first week of October, and when grown for seed purposes, complete sowing in the last week of October to the first week of November.

Spacing: Row to row distance of 30 cm and plant to plant spacing of 15 cm.

Fertilizer: When a crop is grown for seed purposes, apply Nitrogen@30kg/acre i.e., 65kg/acre in two doses, half at sowing time and remaining at the time of flower initiation. To attain fast growth 15-20 days after

germination, take a spray of Triacantanol hormone@20ml/10Ltr.

Irrigation: 1st irrigation should be given immediately after sowing and the second on the third day and subsequent irrigations at 6 to 10 days intervals. In the rainy season, crop hardly requires any irrigation.

Weed: Coriander has a weak ability to resist weeds, especially in the early phases of plant growth. During this period many sprouting weeds not only manage to rise but much stronger, resulting in the death of weak crops. Especially dangerous are the weeds for coriander couch grass, sow thistle, *Cynodon*, *Ostrets*, and others.

Weed management: Thus, it could be concluded that weeds in coriander should be controlled by pre-emergence application pendimethalin 1.0 kg/ha followed by one HW at 45 DAS.

Pests and diseases:

Powdery Mildew:

White, powdery patches on young parts of stems, leaves, and buds. Affected leaves are reduced in size and distorted.

Spray: sulphur powder @ 25 kg per hectare and kerathne @ 0.1%

Wilt: drooping of the terminal portions. Discoloration of the vascular system of the root is observed. Severe infection in the early-stage results in total failure of the crop.

Spray: seed treatment by Bavistin @ 2.0 gm per kg seed.

Stem gall: The disease appears in the form of tumor-like swellings of leaf veins, leaf stalks, peduncles, stems as well as fruits. Badly affected plants may be killed. In the presence of excessive soil moisture, especially under shaded conditions.

Spray: seed treatment and foliar spray by hexaconazole 5% SC @ 0.5%, spray of *azoxystrobin* 23% SC.

Blight Disease:

Dark brown spots appear on the stem and leaves of infected plants and emerging umbels with young flowers get killed and reduced seed production.

Spray: Bavistin @0.1% and copper oxychloride @ 0.3%

Pests:

Aphid: *Cavariella aegopodii*

Management: Azadirachtin 5.0ml/lit and Monocrotophos 1.6 ml/liter at 10 to 15 days interval.

Harvesting: Coriander can be harvested when the plant has become six inches tall. At this

height, the leaves of the herb will be tender and least bitter. The stems tend to be more pungent as compared to the leaves. Cut the gentle stems at the soil level.

Yield:

Rainfed condition- 12.0 to 14.3 quintals per hectare

Irrigated condition- 12.0 to 17.5 quintals.