

Scientific Cultivation of Parsley

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Important points of parsley:

Botanical name: *Petroselinum crispum* Mill.

Family: Apiaceae/Umbelliferae

Chromosome no.: $2n=2x=22$

Edible portion: Tripinnate rosette leaves and petioles

Origin place: Sardinia (Linnaeus) and Mediterranean region (De Condole)

Inflorescence type: Compound Umbel

Type of fruit: Schizocarp

Type of pollination: Cross

Propagation: Seeds

Other names: Break stone or Rock parsley

Introduction:

It is a bright green biennial herb, often used as salad, spice or garnish. Parsley belongs to the Dicotyledoneae group of vegetable classification. It is a shallow rooted (30-60 cm) leafy vegetable crop. Protandary condition was observed in parsley. It grows to about 30cm and produces long stalks of tiny greenish yellow flowers which should be cut off when they appear.

Importance: Both the leaves and stems of parsley are edible and widely used in cooking for their fresh, mild flavor and bright green color.

Parsley is a common garnish and is also used in salads, soups, sauces, and as a flavoring agent. It is a rich source of Vitamin-A, Vitamin-C and Iron (Fe). It comes under major leafy salad vegetable crops. It contains calcium 390 mg/100g, Iron 17.9 mg/100g, Vitamin-C 281mg/100g, fiber 1.8g/100g and moisture content 74.6g/100g. Parsley contains various bioactive compounds, including essential oils (such as myristicin), flavonoids, carotenoids (lutein and zeaxanthin), vitamins (such as vitamin K, vitamin C, and vitamin A), and minerals (including potassium, calcium, and iron), which contribute to its flavor and

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potential health benefits. One of the compounds of the essential oil is **apiol**.

Health benefits of parsley: Parsley is a popular herb that is commonly used as a garnish in many dishes, but it also offers a range of health benefits due to its nutritional content and potential medicinal properties. Some of the key health benefits of parsley include:

- 1. Nutrient-Rich:** Parsley is a good source of essential vitamins and minerals, including vitamin K, vitamin C, vitamin A, vitamin E, folate, and iron. It also contains small amounts of calcium, potassium, and magnesium.
- 2. Antioxidant Properties:** Parsley contains antioxidants like flavonoids, carotenoids (such as lutein and zeaxanthin), and vitamin C, which help protect cells from damage caused by free radicals and may reduce the risk of chronic diseases.
- 3. Anti-Inflammatory:** The compounds in parsley, such as myristicin and volatile oils, have anti-inflammatory properties that may help reduce inflammation in the body. This could potentially benefit conditions like arthritis.
- 4. Heart Health:** Parsley may support heart health by helping to lower blood pressure due to its potassium content
- and its potential to improve blood vessel function.
- 5. Immune Support:** The vitamin C in parsley is essential for a healthy immune system, as it helps the body fight off infections and aids in wound healing.
- 6. Bone Health:** Parsley is a good source of vitamin K, which is important for bone health. It helps in calcium absorption and bone mineralization, potentially reducing the risk of osteoporosis.
- 7. Digestive Health:** Parsley contains dietary fiber, which can support healthy digestion and regular bowel movements. It may also help reduce bloating and flatulence.
- 8. Fresh Breath:** Chewing on parsley leaves can help freshen your breath due to its natural deodorizing properties.
- 9. Antimicrobial:** Some studies suggest that parsley may have antimicrobial properties and could help inhibit the growth of harmful bacteria.
- 10. Kidney Health:** Parsley has a diuretic effect, which may help increase urine production and potentially aid in the elimination of waste products from the body. However, people with kidney problems should use parsley cautiously

and consult with a healthcare professional.

Botanical description: Parsley, scientifically known as *Petroselinum crispum*, is a biennial herb belonging to the Apiaceae family, which is also known as the carrot or parsley family. Parsley plants typically grow to a height of 1 to 2 feet (30 to 60 cm) and have bright green, deeply divided leaves. The leaves are compound, meaning they are divided into smaller leaflets arranged along a central stem. The stems of parsley are usually green and slightly grooved. Parsley has a taproot system, with a single main root that extends deep into the soil, anchoring the plant and absorbing water and nutrients. This root system helps parsley tolerate drought conditions. In the second year of growth, parsley plants produce umbrella-shaped clusters of small, greenish-yellow flowers. These flowers are typical of plants in the Apiaceae family and are pollinated by insects. After flowering and pollination, parsley plants produce seeds. The seeds are small and brown and are typically harvested for culinary use or for growing new parsley plants. Parsley seeds can take a few weeks to germinate. Parsley is a biennial plant, which means it has a two-year life cycle. In its first year, it primarily produces vegetative growth, including leaves and roots. During the second year, it produces flowers and seeds before completing its life cycle.

Two forms of parsley are used as herbs:

There are two main varieties of parsley: curly leaf parsley (*Petroselinum crispum* var. *crispum*), known for its tightly curled leaves and decorative appearance, and flat-leaf parsley (*Petroselinum crispum* var. *neapolitanum* or Italian parsley), known for its flat, serrated leaves and stronger flavor.

Root parsley:

It is grown as a root vegetable (*Petroselinum crispum* var. *tuberosum*). This type of parsley produces much thicker roots than types cultivated for their leaves. Root parsley is very common in Central and Eastern European cuisine, Used in soups and stews.

Soil and Climate: It is a winter hardy leafy vegetable crop which flourishes well both in temperate as well as in tropical climate. It prefers comparatively heavy and acidic soil. Parsley prefers an open, sunny and well-drained position. It requires an ordinary, good and well worked soil but a moist and partially shaded position is the best. Parsley prefers partial to full sun. It can tolerate some shade, especially in hot climates, but it may not grow as vigorously in low-light conditions.

Temperature: It can tolerate to low temperature. Parsley grows best between 22 to 30°C, optimum being 21°C. It required the monthly mean temperature is optimum 15-17°C, maximum 20-22°C and minimum 5-7°C.

Common varieties: Varieties divided in to two groups;

❖ **Curled leaves group:** Mass curled, Bravour and Curlina (These varieties are known by moss curly leaves, have great demand in market).

❖ **Broad leaves group:** Plain leaved, Giant Italian and Humburg (Tall plants, course and tough stem, leaves resemble those of celery shoots). Humburg variety of parsley are rich in vitamin-C (90 mg/100g).

Sowing time of nursery: In general sowing time: September to October month.

Seed rate: 250-300 g/ha for transplanting and 3.25 kg/ha for Direct sown. Seeds are small in size and slowly germinate. Seed germination is difficult and inconsistent and may require 3-6 weeks. Furanocoumarins in seed coat may be responsible. Soaking of seeds in water for 24 hours before sowing shortens the germination period.

Fertilizer requirements: 15 t/ha FYM, 60:40:30 NPK kg/ha. Apply full P, K and half N at planting and remaining N in 2 equal splits doses at one month interval each.

Transplanting: Seedlings are ready for transplanting within 45-60 days (1.5-2 month) when they attain 10-15 cm height.

Spacing: Seedling are transplanting in the main field with the distance of 45 cm X 10 cm or 60 cm X 45 cm.

Diseases:

Early blight (*Cercospora apii*), Late blight (*Septoria apii*), Bacterial leaf spot, Fusarium yellow, Phoma root rot, Bacterial soft rot and Pink rot are attack in parsley.

Insect and Pest:

Green caterpillar, Army Worms and Aphid are the major insect pest of parsley.

Harvesting: Parsley leaves are ready for use about 3 months after seeding. Harvest the outer and large sized leaves. The inner leaves grow continue and mature for subsequent harvesting, so the crop continues to give leaf cuttings for several months. Leaves are harvested at 65 days after transplanting and seeds are harvested at 185 days after transplanting.

Average yield: 100-125 q/ha can be obtained.

Seed yield: 800-1500 kg/ha can be obtained.