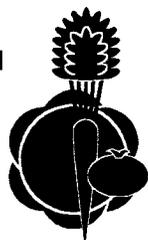


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# CILANTRO PRODUCTION IN CALIFORNIA

*FRANKLIN F. LAEMMLEN, University of California Cooperative Extension Farm Advisor, Santa Barbara County; RICHARD SMITH, University of California Cooperative Extension Farm Advisor, San Benito County*

## PRODUCTION AREAS AND SEASONS

Cilantro (*Coriandrum sativium*), also known as Mexican or Chinese parsley and coriander, is grown primarily along the Central Coast of California. Ventura, Santa Barbara, San Luis Obispo, and Monterey Counties have the largest production. Santa Cruz, San Benito, and Santa Clara Counties have limited acreage. Winter production takes place in Riverside, Fresno, and Stanislaus Counties. In the coastal counties production is year-round with the main harvest from March through mid-November. Growers in the Coachella Valley (Riverside County) and the San Joaquin Valley (Fresno and Stanislaus Counties) plant a winter crop in late September to November for harvest from November through March. Cilantro is often used as a rotation crop; however, some growers produce several crops in succession in one year.

Yields vary greatly. Annual coastal production averages from 9 to 11 tons per acre (20–25 metric tons/ha), while annual Coachella Valley production averages from 30 to 35 tons per acre (67–79 metric tons/ha). Most cilantro is sold in bunches to be used as a fresh herb, and some is sold in bulk for processing.

## CILANTRO ACREAGE AND VALUE

Year	Acreage	Average yield (tons/acre)	Gross value/acre
1996	3,519	11.33	\$4,577
1995	2,826	11.18	\$4,551

SOURCE: *California Agricultural Commissioner's Report Data* (Sacramento: California Department of Food and Agriculture, 1995–1996).

## CLIMATIC REQUIREMENTS

Cilantro can be grown under a wide range of climatic conditions. During the summer, 40 to 45 days are usually required to bring the crop to harvest. Hot weather causes cilantro to bolt to seed very quickly, and development of foliage nearly ceases. Temperatures between 50° and 85°F (10° and 30°C) provide optimum growing conditions. Cilantro tolerates a light frost.

## VARIETIES AND PLANTING TECHNIQUES

**Varieties.** Four varieties of cilantro currently dominate Central Coast production: Santos, Long Standing, Slo Bolt, and Leisure. All four are used for spring, summer, and fall production, while Santos is the most common variety grown during the winter months. A new cultivar, Pecos, shows promise for spring production.

**Planting.** Cilantro is grown on 38- to 40-inch (97–102 cm) raised beds with two lines per bed. Due to the use of precision planters or scatter shoes for planting, seedlines may vary from 2 to 5 inches (5–13 cm) in width. Depending on seedline width and desired plant population, 25 to 100 pounds per acre (28–112 kg/ha) of seed are used. Seeds are placed at a depth of 0.25 to 0.50 inch (0.64–1.27 cm). Two to four plants per square inch (6.45 square cm) of seedline are considered a good stand.

## SOILS

Cilantro will tolerate a wide range of soil types as long as tilth, nutrient levels, and moisture are maintained.

## IRRIGATION

Virtually all growers use sprinkler irrigation to germinate the seed. As soon as seedlings are established, irrigation is switched to furrow or drip tape. During the summer months with no rainfall, approximately 6 to 12 inches (15–31 cm) of water (depending on soil type) are needed to bring the crop to harvest.

## FERTILIZATION

On the Central Coast, 100 to 120 pounds per acre (112–135 kg/ha) of nitrogen, 100 to 120 pounds per acre (112–135 kg/ha) of phosphorus, and 100 to 115 pounds per acre (112–129 kg/ha) of potassium are used to produce a crop of cilantro. These nutrients are applied in approximately three equal applications: one preplant and two side-dressings. If a grower intends to maintain the crop for a second harvest, an additional 50 gallons per acre (467 l/ha) of 20-percent ammonium nitrate (AN20) are applied after the first harvest.

## **INTEGRATED PEST MANAGEMENT**

Since cilantro is a minor crop, there are few chemicals which can be used for pest control.

**Weeds.** There are no herbicides registered for use on cilantro. It is important to rotate the crop into clean fields. Weeding costs can be very high, especially if planting has been done with a scatter shoe. In addition, picking weeds out of harvested cilantro bunches is slow and increases costs. Mechanical cultivation and hand-hoeing are the principal means of controlling weeds. Irrigation, cultivation, flaming, and fumigation prior to planting can help reduce weed populations.

**Insects and Nematodes.** Beet armyworm (*Spodoptera exigua*), cabbage looper (*Trichoplusia ni*), and green peach aphid (*Myzus persicae*) sometimes cause economic damage. As few insecticides are registered for use on cilantro, check with your local agricultural commissioner's office for sanctioned materials.

Cilantro is susceptible to root-knot nematodes (*Meloidogyne* spp.) and stubby-root nematode (*Paratrichodorus* sp.). Rotation away from infested fields is recommended.

**Diseases.** Cilantro is a fairly disease-free crop in California. Bacterial leaf spot (*Pseudomonas syringae* pv. *coriandricola*) can be a serious problem. The bacterium is seedborne and water-splashed to the foliage of seedlings. Rain or sprinkler irrigation spreads the bacteria which cause watersoak lesions on foliage. The lesions develop a purplish margin with a tan, necrotic center. Clean seed and furrow or drip irrigation to maintain dry foliage are the most effective means of control.

Carrot motley dwarf virus can infect cilantro. It is aphid-borne and usually found in fields near carrots.

## **HARVESTING AND HANDLING**

Planting schedules are coordinated to harvest 1 to 1.5 acres (0.4–0.6 ha) per week. Harvesting may be done in three ways. The most common method is to cut the foliage 1.5 to 2 inches (4–5 cm) above the crown. Foliage from several plants is bunched together with a rubber band or twist tie. Another method is to cut the whole plant just below the soil, with several plants bunched together as described above. Finally, cilantro that has been planted in 5-acre blocks may be bulk harvested using a mower. In this instance, the foliage is conveyed to bulk bins for transport to a processing facility. The conventional fresh pack is a 10-pound (4.5-kg) box packed with 30 bunches of cilantro. Occasionally, 60-bunch boxes are packed for special orders.

## **POSTHARVEST HANDLING**

Fresh cilantro is usually hydrocooled or iced as soon as it is received at a storage facility. Boxes are held at 33° to 35°F (0.6° to 1.7°C) while waiting for shipment. In these conditions, cilantro should have a shelf life of at least 14 days. Exposure to ethylene shortens shelf life by increasing decay and yellowing. Modified-atmosphere packaging with 5 to 10 percent carbon dioxide can extend shelf life at storage temperatures of from 40° to 50°F (4° to 10°C).

## **MARKETING**

California ships cilantro to all parts of the United States every month of the year. Some product is also exported to Mexico. Records from the Los Angeles terminal market indicate that the price for 10 pounds of cilantro (30 bunches) ranges from \$2.50 to \$13.50, depending on supply and season.