Fennel, Sweet Anise

*Foeniculum vulgare* or *F. officinale* (usually called common or wild fennel) and *Foeniculum vulgare dulce* (called Florence or sweet fennel or finocchio) are members of the Apiaceae (parsley) family.

Fennel is a tall, hardy, aromatic perennial of the parsley family native to southern Europe and the Mediterranean area, especially near the sea. It is distinguished by its finely divided, feathery green foliage and its golden-yellow flowers. It looks something like celery and is often confused with dill. The spice, fennel “seed,” is really the dried fruit of the common fennel.

There are several varieties of fennel. Both common and sweet fennels are grown for their seed and their essential oils. The seed is used as a spice in cooking and the essential oil is used in condiments, soaps, creams, perfumes, and liqueurs. Sweet fennel (Florence or finoccchio fennel) is also grown for the thickened bulb-like base of the leaf stems (often called anise), a 3- or 4-inch-wide structure that grows just above the ground. Fennel plants grown for this purpose grow only 2 to 3 feet tall. Seeding types will grow 4 to 5 feet tall.

Many varieties (cultivars) of finoccchio fennel have been developed to suit different locations and climates. Varieties also differ in bulb shape, size, firmness, and time to maturity. In 1990, Indiana researchers conducted a variety trial with 16 fennel cultivars. Plants were spaced in single rows 3 feet apart. The researchers found that the Zefa fino variety had the highest yield of bulbs (452 lb per 1,000 square feet), the largest bulb circumference (8.1 inches), and the latest flowering dates. No other cultivar even came close in terms of yield or lateness of flowering.

**Market Information**

**Current production and yield.** India, the People’s Republic of China, Egypt, Argentina, Indonesia, and Pakistan make up the world’s main fennel production areas. In California, fennel is grown in Monterey, San Luis Obispo, Santa Barbara, and Santa Cruz counties.

**Use.** The fresh leaves and tender leaf stems of sweet fennel are used as a boiled vegetable, and are sometimes served raw in salads or with other vegetables. The flavor of fennel is like that of anise or licorice. Unlike dill, fennel foliage cannot be dried. It is too sappy for successful drying, and by the time it has dried most of its flavor has been lost. Treat the flower heads as you would dill; sun-dry them for a few days, shake the seeds loose, and store the seeds in airtight containers.

Fennel is a pungent herb, slightly similar to dill when fresh, but not at all similar when dry. Varieties vary in their suitability for cooking — the best is Florence sweet fennel, if the bulb is needed. For foliage and seeds, the best fennel is found in the Mediterranean. Although fennel grows wild in California, the climate is probably a little too moist here. Fennel is very good for digestion, and that is why it is often used with pork and in sausages in Italy. It is also the favorite herb with suckling pig and...
wild boar, dishes dating back to Roman times when fennel was used a great deal. For centuries, fennel has been used as a flavoring for drinks. One example, sack, is mentioned in William Shakespeare's *The Tempest*.

Use fresh leaves, tender stems, and young flower heads raw in salads, or use the bulb in stews and with chicken, fish, pork, beef, or cheese. Complementary wines are dry whites or Italian reds, depending on the dish.

**Culture**

**Climatic requirements.** Cool weather is best for the growth of fennel. Temperatures of 70° to 75°F are preferred. Seeds germinate best at soil temperatures of 61° to 64°F.

The plant has a tendency to bolt (flower prematurely) in warm summer weather. If you are growing fennel for the bulb, select a variety that will grow for a long time before bolting in order to produce more well-developed bulbs.

**Propagation and care.** Propagate by seed in spring or autumn. Plant in medium to light well-drained soil in a sunny location. Fennel thrives on well-drained loam soil. It grows well in mild temperate climates. For the seeding types of fennel, drill seed ½ inch deep in rows 1½ to 3 feet apart. Thin to 6 to 12 inches’ spacing when the plants are 3 to 4 inches tall.

Fennel is generally grown as an annual or biennial. Seed yields are low the first year, but increase the second year. Typically, the seeds mature in the fall of the second season. The umbels do not mature evenly, so multiple harvests will maximize yield. When the fruiting umbels turn brown, they are ready for harvest and should be cut promptly to prevent shattering. Machine harvesting, drying, and threshing may be possible, but will probably cause too much shattering loss and mixing of mature and immature seed.

Bulb anise should be thinned to 10 to 14 inches’ spacing when grown on 40-inch beds with double rows 12 inches apart. Anise prefers acid soils, pH 5 to 6.8. The edible leaf base becomes fully mature in about 80 days but it is edible as soon as it begins to fatten.

Fennel prefers frequent irrigation for rapid growth. Moisture stress causes the basal stalk to split.

**Pest and weed problems.** Fennel competes poorly with weeds. Aphids can cause severe damage.

**Harvest and postharvest handling.** Harvesting, cleaning, trimming, and packing of the bulb (or finnocio fennel) is done by hand. Care must be taken to ensure a high-quality fresh pack. The foliage should be dark green and fresh in appearance, and the stalk and bulb a lighter greenish white. Harvest just before flowering. According to Morales, commercial growers remove the top foliage by cutting or “topping.” The rest of the plant, including the bulbs, roots, and some foliage, is transferred from the field to a storage location where the roots are removed. Finally, the fennel bulb, with some foliage, is cleaned of soil, washed, and stored.

After harvest store the bulbs at 32° to 36°F. At the retail level, the bulbs are sold individually and may be wrapped in plastic. Market demand and price are based on bulb size, shape, and visual appearance. The bulb should be firm and free from insects and discoloration.

When the fennel is to be sold as an herb, use only the highest-quality plant material for the fresh market. Some of the detailed postharvest handling information provided for basil in this publication also applies to fennel and other herbs.
Sources

Seed
W. Atlee Burpee & Co., 300 Park Avenue, Warminster, PA 18974
Johnny’s Selected Seeds, Foss Hill Road, Albion, ME 04910
Le Jardin du Gourmet, P.O. Box 75, St. Johnsbury Center, VT 05863
Park Seed Co., Cokesbury Road, Greenwood, SC 29647-0001
Seeds Blum, Idaho City Stage, Boise, ID 83706
Shepherd’s Garden Seeds, Shipping Office, 30 Irene Street, Torrington, CT 06790
Taylor’s Herb Gardens, 1525 Lone Oak Road, Vista, CA 92084

More information


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