



Revised May 2020

## Fennel in the Garden

*Ken Adams and Dan Drost*

### Summary

Fennel contributes a fragrant licorice flavor to Mediterranean and Italian cooking and fennel seed is commonly used as a seasoning in sausage. Varieties of common fennel (*Foeniculum vulgare*) are grown for seed and plants have an appearance similar to dill. Florence fennel (*Foeniculum vulgare* var. *azoricum*) is a cool season annual grown for its tender anise flavored stalks and bulbous base. The thick stalks may be eaten raw or cooked, Florence fennel leaves are fine-leaved fronds, and both fennel pollen and seeds are used in cooking. Florence fennel is sometimes mislabeled as anise. Both common and Florence fennel are native to the Mediterranean region.

### Varieties

Few varieties of common fennel are available to the home gardener. Wild fennel types typically have bitter seeds and lack licorice flavor. Two commonly grown Florence fennel varieties are 'Zefa Fino' and 'Orion Hybrid'. Both varieties have a compact form and produce thick leafstalks, softball size bulbous bases, and are resistant to bolting (going to flower). Consult specialty seed catalogs, nurseries or local garden centers for available fennel varieties.

### How to Grow

**Soil:** Florence fennel prefers full sun and loamy soil, rich in organic matter with a pH of 6.5 to 8. Soil should be well drained and moist to prevent bolting and splitting of stalks. Most soils in Utah are suitable for growing fennel but plants benefit from added compost.



**Soil Preparation and Fertility:** Before planting, determine fertilizer needs with a soil test and then follow the fertilization recommendations given. If fertilizer are needed, work the fertilizer into the top 6 inches of soil. If you fertilize with compost, apply no more than 1 inch of well-composted organic matter per 100 square feet of garden area.

**Planting and Spacing:** Started fennel plants indoors 4-6 weeks before the frost-free date for the area and then transplanted into the garden. It is best to direct seed fennel into the garden. Plant seeds 1/4 inch deep when soil temperatures are between 50-75 °F. Space seeds 4-6 inches apart in the row with rows 18 inches apart. Seeds usually germinate in 7-10 days. After plants begin to bulb, thin Florence fennel to 8-12 inches apart. For a continuous supply of bulbs plant 3-4 feet of row every 3-4 weeks. Florence fennel grows best in cooler temperatures, becomes woody and may bolt when temperatures become hot. Florence fennel typically matures in 60 to 90 days depending on variety planted.

Some gardeners mound soil around the swollen bases to keep the bases from turning green and developing a stronger flavor.

**Fertilization:** When bulbs develop, apply 3 tablespoons of a nitrogen based fertilizer (21-0-0) for every 10 feet of row. Fennel requires moderate amounts of nitrogen but has low phosphorus and potassium requirements. The soil test determines phosphorus and potassium needs.

**Water:** Water requirement vary with soil type. Water Florence fennel regularly and do not allow the soil to dry out between irrigation events. Common fennel is more drought tolerant than Florence fennel, however, allowing common fennel to wilt will negatively affect seed production. Drip irrigation helps maintain moist soil conditions while conserving water. Apply 1 to 2 inches of water per week throughout the growing season depending on soil type. Fluctuations between dry and wet soils may cause stems to split.

## Problems

**Weeds:** Control weeds when plants are young. Mulch plants with straw or lawn clippings to prevent weed growth and help maintain cool and moist soil conditions.

**Bolting:** Florence fennel is susceptible to bolting if growth is stressed by lack of water or damage occurs to plants or roots. Hot summer temperatures and long days accelerate bolting so select newer “slow bolting” varieties.

**Pests and Diseases:** Fennel is generally resistant to most common diseases. Insects including aphids, thrips, and cabbage moth larva may cause leaf damage resulting in smaller bulbs. Control of insects is best achieved through proper application of insecticidal soaps or other appropriate insecticides. Always apply insecticides according to label directions.

## Harvesting and Storage

Leaves of common or Florence fennel may be used at any stage of growth as a seasoning or garnish. Common fennel seed may be consumed green or allowed to ripen and dry. Fennel seed is easily harvested from umbel-shaped seed heads. To harvest seed, cut the seed heads after they have turned brown and store in a paper bag to allow seeds to fully dry. Store the dried seeds in a moisture proof container. Florence fennel should be harvested when the bulbous base is less than 4



inches across and firm to the touch. Fennel pollen is prized by chefs for its intense anise flavor and may be harvested from flower blooms by shaking flower heads into a plastic bag.

## Productivity (Florence types)

Plant 3 to 4 foot long rows, every 3 to 4 weeks to ensure a continuous supply. Recommended serving size is 1/2 cup raw fennel (1 bulb) for two people.

## Nutrition

Fennel seed is high in calcium and magnesium. Florence fennel bulb is high in potassium and low in calories. It is also a good source of vitamin C and dietary fiber.

## History

Fennel was prized by the ancient Greeks and Romans who used it as medicine, food, and insect repellent. A fennel tea was believed to give courage to the warriors prior to battle. According to Greek mythology, Prometheus used a giant stalk of fennel to carry fire from Olympus to earth. Emperor Charlemagne required the cultivation of fennel on all imperial farms.

## Frequently Asked Questions

*My fennel seems to grow mostly leaves and the bulbs are very small. What am I doing wrong?*

Make sure you are growing Florence fennel and not common fennel which doesn't bulb. Florence fennel grows best under shorter days and cooler temperatures. Plants maturing during summer heat generally do not develop well.

Plants that are water or nutrient stressed produce small bulbous bases as well.

## References

Bubel, N. 1988. The New Seed-Starter's Handbook. Pennsylvania: Rodale Press. pg. 264.

Smith, Edward C. 2000. The Vegetable Gardener's Bible. USA, Storey Books. pg. 235.

Toogood, A. ed. 1999. The American Horticultural Society Plant Propagation. New York: DK Publishing. pg. 302.

Weiss, E. A. 2002. Spice Crops. New York: CABI Publishing. pgs. 291-295.

In its programs and activities, Utah State University does not discriminate based on race, color, religion, sex, national origin, age, genetic information, sexual orientation or gender identity/ expression, disability, status as a protected veteran, or any other status protected by University policy or local, state, or federal law. The following individuals have been designated to handle inquiries regarding non-discrimination policies: Executive Director of the Office of Equity, Alison Adams-Perlac, alison.adams-perlac@usu.edu, Title IX Coordinator, Hilary Renshaw, hilary.renshaw@usu.edu, Old Main Rm. 161, 435-797-1266. For further information on notice of non-discrimination: U.S. Department of Education, Office for Civil Rights, 303-844-5695, OCR.Denver@ed.gov. Issued in furtherance of Cooperative Extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Kenneth L. White, Vice President for Extension and Agriculture, Utah State University.