

Fava Bean

Vicia faba L. is a member of the Fabaceae (pea) family.

Fava beans are related to vetch, a determinate plant with erect, coarse stems, large leaves, and no climbing tendrils. It is a bushy plant, 2 to 7 feet tall, with white or purplish flowers born in clusters on short stalks. Large-seeded varieties bear 1 or 2 pods at each node and small-seeded types produce 2 to 5 pods. The pods are up to 18 inches long and contain from 3 to 12 large beans. There are about 15 pods per stalk on the large types, and 60 pods on plants of the small-seeded varieties. The bean is similar in size to the Lima bean.

Other names. The fava bean is also called horse bean, broad bean, Windsor bean, English dwarf bean, tick bean, pigeon bean, bell bean, haba bean, feve bean, and silkworm bean.

Market Information

For the past several years, fresh fava beans have been listed in the San Francisco Wholesale Fruit and Vegetable Report only during the months of April and May.

Current production. In North America, Canada is the largest producer of fava beans. Minnesota and the Great Lakes states grow small acreages. In California, fava beans are grown as a seed crop along the coast from Lompoc to Salinas and in the northern Sacramento Valley. In other parts of the state they are grown primarily as a cover crop or for green manure.

Use. Fava beans are used as a green or dry vegetable and as a coffee extender when roasted and ground. As a food, the beans are hulled, boiled, and prepared in the same way as lima beans. Young, fresh fava beans can be cooked without hulling. The plant is also used as livestock and poultry feed and as a cover crop.

Nutrition. The dry beans are about 24 percent protein, 2 percent fat, and 50 percent carbohydrate, and have 700 calories per cup.

Culture

Climatic requirements. The fava bean is a cool-season annual legume. Optimal growing temperatures range from 70° to 80°F. The plant resists frost dam-



Mature fava beans, ready for harvest.
(Photo: Sakata Seed America, Inc.)

age at least to 21°F, but does poorly in the summer heat of interior valleys, especially during flower and pod set. In San Joaquin County, November plantings have tolerated winter frost well, and seed from those plantings have been harvestable in April.

Propagation and care. In California, fava beans are planted for vegetable use in February and March. As cover crops, they are planted from September to November. When grown for seed production, the crop takes 4 to 5 months to mature. The seeds should be planted 1 to 2 inches deep (large varieties) into well-prepared soil, 3 to 5 inches apart. Germination takes 7 to 14 days. The sprouted seeds are thinned to 8 to 10 inches apart if practical. Allow 2 to 3 feet between rows for seed production.

For cover crops, one plant per square foot is recommended. This is equivalent to 195 pounds of seed per acre for large-seeded varieties and 79 pounds of seed per acre for the small-seeded varieties.

Plants do best on well-drained heavy silt or clay loams, but will also do well on adequately moistened sandy soils. Fava beans are relatively tolerant to boron (up to 10 ppm in irrigation water). Fava beans do not need nitrogen fertilizer if the plants are properly nodulated. Inoculation with commercially available legume-type bacteria is recommended. Yields of 1 to 2 tons of cleaned seed per acre can be expected.

Fava bean is attractive as a green manure crop because it produces a large amount of biomass. Twenty to forty tons of green forage worked into each acre of soil enhances the tilth of many clay and sandy soils. Fava bean adds a large amount of nitrogen to the soil, and that benefits orchards or high-nitrogen-consuming annual crops. Green manure yields were determined in several research trials throughout the state have ranged from 4.9 tons per acre to 34 tons per acre.

Seed production. California research has shown small-seeded varieties such as Bell and Foul to yield around 2,400 pounds per acre. Large-seeded varieties—Burpee, Pismo, and Italy—yield around 1,900 pounds of seed per acre.

The nutrient composition of fava bean green material is about ½ pound of nitrogen for every 100 pounds of material turned under. A green material yield of 20 tons per acre would be equivalent to approximately 200 pounds of nitrogen.

Pests and diseases. Fava beans are susceptible to aphid and bean weevil. Ladybird beetles and some small parasitic wasps can be effective in controlling aphids. Little is known about diseases affecting fava beans under California conditions. Chocolate spot (*Botrytis fabae*), a fungus disease that causes brown spotting under moist conditions, has been identified in the northern San Joaquin Valley. Viruslike diseases and powdery mildew have been observed on fava beans. Fava beans are a preferred host of black aphids, and may serve as a bridging host for virus diseases that the aphid transmits to other legumes or susceptible crops.

Harvest and postharvest practices. Select the pods when they are green and thick and have a glossy sheen. These pods should be well filled with large beans. The raw beans can then be kept in the refrigerator for a day or two.

Swathing should begin when the lowest two bunches of pods begin blackening or when most seeds easily detach from the hilum. At this stage the moisture content of the beans is from 35 to 45 percent.

Favism

Favism is an inherited disorder particularly noted among persons of southern European heritage. It is an enzyme deficiency expressed when fava beans, especially in raw or partially cooked form, are eaten. Symptoms include acute toxic hepatitis as well as symptoms similar to those of influenza. Males are more commonly affected than females; mortality from favism is almost entirely confined to children. Fava plant pollen in the respiratory tract also affects these people.

Sources

Seed

Harmony Farm Supply, P.O. Box 460, Graton, CA 95444

Lockhart Seeds, Inc., P.O. Box 136, Stockton, CA 95201

Mellinger's, 2310 W. South Range Rd., North Lima, OH 44452-9731

Seeds Blüm, Idaho City Stage, Boise, ID 83706

More information

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