

Fava Bean

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Family:	Fabaceae
Subfamily:	Faboideae
Genus & species:	<i>Vicia faba</i>
Common names:	Fava, faba, broad bean, horse bean, field bean, windsor bean

Biogeography:

Fava beans, one of the oldest domesticated food legumes, have been cultivated for at least 5,000 years. Their exact geographical origin is unknown, although Central Asia and the Mediterranean region have been proposed as possible centres. Existing wild species are similar in appearance to the cultivated plant, but genetic analyses have shown that the wild types have a different number of chromosomes. Field trials to cross the wild and cultivated species have been unsuccessful.



Vicia faba (Photos by S. Loss)

According to the United Nations Food and Agriculture Organization (FAO), China is currently the world's leading producer, accounting for approximately 60% of the total. Other important production regions are northern Europe, the Mediterranean, the Nile Valley, Ethiopia, Central and East Asia, Oceania and the Americas.

Botanical features:



Fava is an annual herbaceous plant with coarse hollow stems that can reach heights of two metres. It has large pinnate leaves, consisting of two to six leaflets. It is mainly pollinated by bumblebees. White flowers with purple markings form in clusters of one to five, and one to four pods usually develop from each flower cluster. Up to 30 cm in length, each pod contains from three to twelve seeds. The plant also has a thick tap root up to one metre long with numerous lateral roots.

Fava beans need a cool season for best growth and are usually planted as a winter annual in subtropical or warm temperate areas. They can tolerate a wide range of soil types and pH, but grow best in loamy soils. They need moderate amounts of water. Depending on growing conditions, it takes about four or five months for the pods to mature enough for the seeds to be harvested.

General:

Fava beans were cultivated by the Egyptians, Greeks and Romans. In ancient Rome, they were used in funeral rites. It is said that Pythagoras, the famous Roman philosopher and mathematician, forbade the eating of fava beans because they contained the souls of the dead. They were also used as tokens for voting, with a white bean indicating a 'yes' and a black for 'no.' This may explain the origin of the slang term 'bean counter' for an accountant.

Favas were the only bean known in Europe prior to voyages to the so-called 'New World' and were a staple food during Medieval times. The beanstalk that the legendary Jack climbed in search of the giant was almost certainly that of a fava.

Uses:

Fava beans are commonly eaten for breakfast in the Middle East, the Mediterranean region, China and Ethiopia. They are used in soups and stews, and a paste made of ground beans is deep-fried with vegetables and spices (known as 'falafel' in Lebanon).

In India, the seeds are roasted and eaten like peanuts. Fava beans are also roasted and ground for use as a coffee extender.

Fava is also used as cover crop and for animal forage. The plants are large and produce large amounts of biomass that can be tilled back into the soil as green manure.

Straw from the plants is used in brick-making and as fuel in parts of Sudan and Ethiopia.

Research is ongoing on the potential use of fava beans as a treatment in Parkinson's disease. People with Parkinson's disease are unable to manufacture **dopamine**, which serves as a chemical messenger in the brain and helps regulate important motor and cognitive functions. Fava beans are a source of **levodopa**, a precursor of dopamine. When taken orally, levodopa is absorbed into the blood stream and carried to the brain where it is converted into dopamine.

Human health benefits & concerns:

Fava beans contain between 20% and 40% protein, depending on the variety and the environmental conditions under which they are grown. As with most legumes, they are low fat and a good source of dietary fibre and B-complex vitamins.

Fava beans can cause problems for a small percentage of people. **Favism** is an inherited condition in which a person lacks an enzyme called glucose-6-phosphate dehydrogenase (G6PD). This rare deficiency occurs mostly among people of Mediterranean, African, and Southeast Asian descent. The condition helps serve as a defence against malaria by reducing the amount of oxygen in red blood cells. However, for people with favism, eating undercooked fava beans or breathing fava bean pollen can lead to a serious anaemic condition.

Fava beans are also higher than most beans in complex carbohydrates called **oligosaccharides**, which may cause gas and abdominal pains.

References:

Holden, K., 'Fava Beans, Levodopa, and Parkinson's Disease' at <http://www.scienzavegetariana.it/nutrizione/favabeans.html>

Zohary, D. & Hopf, M., 2000. *Domestication of Plants in the Old World: The origin and spread of cultivated plants in West Africa, Europe and the Nile Valley*. Oxford University Press Inc., New York.

<http://encyclopedia.thefreedictionary.com/fava%20bean>

<http://www.hort.purdue.edu/newcrop/cropfactsheets/fababean.html>



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