GLORIOUS BEANS

EXPLORATIONS BY THE VISUAL TRAINING STUDENTS OF BEN NICHOLSON
ILLINOIS INSTITUTE OF TECHNOLOGY











Vicia faba (Genus)


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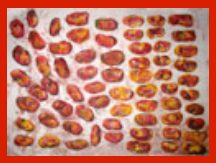
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Common Names

Common names for Vicia faba include habas, broad beans, faba bean, horse bean, English bean, English dwarf bean, Windsor bean, tick bean, cold bean, pigeon bean, bell bean, and silkworm bean.

Visual Characteristics

There are many varieties of fava beans, each variety possessing a distinctive seed. Some seeds are small and green, similar to lima beans; some seeds are quite beefy and bronzed. My variety, the seed found in most American markets, is the Broad Windsor, a square-shouldered, thick, prolate oval, approximately 1" high x 3/4" wide x 1/4 thick. The matte, undulating surface of the seed is smooth and dry to the touch. The coloring of the seed coat is mottled: the underlying tone is a greenish putty color, over which varying hues of bronze, yellow ochre, terra cotta, and even hints of magenta can be found. When the seed coat is removed, the revealed endosperm is a bright, creamy, waxy yellow color.
The distinctive chocolate brown hilum, or umbilicus scar, is found at the end of the seed, in contrast to the New World Phasaeolus varieties, which sport their hilums on their bellies.

Growing Characteristics

Vicia faba is a member of the vetch family, a group of leguminous plants, by and large climbing herbs, cultivated for forage and soil improvement. Generally, the fava is an erect, large-leaved, single-stalked plant, two to seven feet tall, which assumes a full, bushy appearance at maturity. In the home garden, the tall, upright plants are often sown densely, as the plants physically support each other in this pattern, obviating the need for staking. Clusters of fragrant purple or white flowers on short stalks develop at the axil of the plant, which is the angle between the upper side of a leaf or stem and the supporting stem or branch. The seedpods that ripen from the fertilized flowers are numerous: there can be 15-60 pods found on each plant, each pod containing 3-12 beans, depending on variety.
Germination of the seed takes 7-14 days; the plant matures in four to five months, depending on planting date.
Favas prefer fertile, well-drained heavy silt or clay barns and cool growing temperatures (40-70 F). They are typically planted in the fall and winter in moderate climates and are harvested the following spring. Fava beans are quite frost hardy, yet are able to survive drought well.
Fava beans are a major crop worldwide. They have been cultivated for millennia; therefore one can find varieties to suit any climatic zone, from the dry, desert conditions of Morocco to the cooler climes of Canada.
The plants are susceptible to several viruses, powdery mildew, and Chocolate Spot, a fungus disease, all of which can cause leaf and pod loss. Black aphids and bean weevils are common pests of the fava, but can be controlled organically with ladybugs and parasitic wasps; pesticides containing rotenone, malathion or diazinon are also effective.
History of the Plant
Cultivation of the fava bean is so ancient and widespread that there are no longer any wild varieties of the bean. Favas were first domesticated in the Middle East in the Neolithic era. Evidence of fava beans has been found at an archeological site in Israel that was carbon dated to 7000 BC ("Gardener's Guide", ch. 2).
From the Middle East, fava propagation spread throughout the Mediterranean basin. Favas have been found in Egyptian tombs dating back 4000 years and in archeological sites from the fifth millennium BC in Spain. From the Mediterranean, fava beans spread to the Far East with the silk and spice trades:
Vicia faba have been cultivated in the Far East for at least two thousand years. Travelers to the New World brought fava beans along with them as sustenance and crop seed, cultivating favas in Massachusetts as early as 1602 ("Gardener's Guide", ch. 2).

Literary References

• The sixth century Greek philosopher Pythagoras is known for his injunction against the eating of fava beans: "Avoid fava beans." Pythagoras was never quite clear about why one should avoid favas—but later philosophers have tried to clarify Pythagoras's statement, most notably the
• Ornhics, who claimed that Pythagoras made the proscription based on the belief that the beans contained the souls of the





dead, and also
• Aristotle, who said Pythagoras forbade favas because: “either because they have the shape of testicles, or because they resemble the gates of hell, for they alone have no hinges, or again because they spoil, or because they resemble the nature of the universe, or because of oligarchy, for they are used for drawing lots” (Parsons).
• Diogenes thought one should abstain from favas “since they are full of wind and take part in the soul” (Parsons).
• The fava bean was the only bean available in the Old World until the introduction of the New World Phasacolus species in the I 500s. So anytime a bean is mentioned in early literature, you can be sure it was a fava bean.
• A new generation’s curiosity in fava beans was piqued with the famous line spoken by Hannibal Lecter in the movie “Silence of the Lambs”:
“A census taker once tried to test me. I ate his liver with some fava beans and a nice Chianti.”

Pharmacology

Medicine
Favism
Throughout history, people have died from the ingestion of fava beans, which has engendered famous proscriptions concerning the eating of the bean. Research undertaken after WW I found that certain populations, most notably those surrounding the Mediterranean basin, were deficient in the G6PD enzyme, which assists in oxygenating red blood cells. In approximately 20% of the G6PD deficient population a severe hemolytic reaction involving the destruction of kidney tissue will ensue if fava beans are eaten.
Recent research indicates that the G6PD deficiency is actually a heritable defense against malaria, an important natural adaptation in that geographical area. The reason the population with the deficiency react to fava beans with such deadly consequences is that natural chemicals in the bean act as an anti-malarial medication by lowering the oxygen carrying capacity of their red blood cells, therefore magnifying the antimalarial effects the population already possesses with their deficiency (Parsons). In effect, the body is starved for oxygen, and tissue destruction and death are the result of the starvation.
Fava Beans and Levadopa
Fava beans contain levadopa, the same chemical in prescription drugs used to treat Parkinson’s disease. The young plants and beans seem to contain the highest concentration of levadopa.
Some medical studies have shown that eating fava beans can help control the symptoms of Parkinson’s; in fact, some studies find that the effects of fava levadopa last longer than the prescription variety. There may be “helping” chemicals in the bean that act synergistically with the levadopa.
However, there are some caveats involved with the substitution of fava beans for levadopa:
• The concentration of levadopa in fava beans is unpredictable.
• Some people have an allergic reaction to raw fava beans.
• MAOI medications plus levadopa can equal fatal high blood pressure.
• If a person has undiagnosed favism, they may suffer kidney failure from eating fava beans.
Many people with Parkinson’s can benefit from eating fava beans; however, it should be discussed with a doctor first (Holden).
Other
Some people display intestinal insult after ingesting raw fava beans, which is an indication of an allergy. Logically, this sensitized group should avoid the uncooked beans.

Food Use

All parts of the fava plant are edible. The seeds are high in protein, vitamins, and minerals, and have been a cornerstone of human nutrition for thousands of years. The beans may be eaten fresh and green, or dried for future use. Properly dried beans will keep for three years.
Many people enjoy the leaves of the fava plant, preparing them similarly to spinach.

Nutritional Values

Serving Size: One cup of fava beans

Calories 80	
Total Fat 0.5 g	1% Daily Value
Sodium 55 mg	2% Daily Value
Potassium 270 mg	8% Daily Value
Total Carbohydrates 13 g Dietary Fiber 5g	4% Daily Value
Sugar2g	18% Daily Value
Protein 6g	

Fava beans are an excellent source of magnesium, manganese, vitamin C, and folate. (USDA)

Recipes

Fava Bean Puree
This classic fava bean presentation is a combination of recipes from Julia

Child's "The Way to Cook", and Julee Rosso and Sheila Lukins'"The New Basics Cookbook".

Wash, sort, and then soak 1-½ cups of dried fava beans in ten cups of water overnight. The next day drain, peel, and rinse the beans; cover with water and simmer for 2 to 2- 1/2 hours until tender. Drain.

For six servings, puree 3 cups of cooked favas in a food processor. Puree I or 2 large cloves of garlic and sauté briefly in 2 tablespoons of butter; stir into the beans. Add 2 more tablespoons of butter to the bean puree, % cup of whipping cream, and salt and pepper to taste. Serve immediately.

Miscellaneous

Fava bean plants are legumes; therefore they fix nitrogen into the soil, enhancing its richness. In fact, if the temperature is under 60 F, favas will fix more nitrogen in two months than any other crop (DeBoer). In addition, farmers often grow favas as biomass and plow them back into the soil at maturity, enriching the tilth of sandy or clay type soils. The bean makes an excellent cover crop and is a protein-rich addition to alfalfa silage, making a mass known as favalage.

Fava beans grow well without the use of agricultural chemicals, the seed is inexpensive, and very little processing of the harvested bean is required. The fava bean is positioned to make great inroads in American agriculture.

Authored By

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