



Campaign for School Gardening



Crop Sheet: French Beans

Description

Latin name: Phaseolus vulgaris

Phaseolus = from Greek name for a kind of bean 'phaselos', vulgaris = common.

There are two types of French beans 'climbing' (pole beans) and 'bush' beans. They are closely related to runner beans which are more popular in Britain than French beans. French beans are annuals but runner beans can live for several years. They are in the legume (pea & bean) family.

Legumes fix nitrogen in soil by bacteria in their root nodules, thus are important for improving nitrogen supply in the soil. Nitrogen is essential for forming proteins needed for plant growth, especially leafy growth. The roots of peas and beans need to be left in the soil and dug in to add the nitrogen. In crop rotation, brassicas (cabbage family) are planted the following season after legume crops, as they are leafy crops that benefit from the extra nitrogen in the soil. French beans fix less nitrogen than peas and broad beans and the bacteria associated with their roots are not found in all soils. Therefore they need more fertile soil than other legumes. Remember that most of the nitrogen fixed by peas and beans goes into stem and leaves so the benefit from these must wait until they have been recycled through the compost bin.

The climbing beans have a twining stem and need something to clamber up like a cane wigwam. Dwarf beans do not need support as they only grow to a low bushy plant. The flowers can be white, pale yellow, pink or violet, and these develop into green, yellow or purple edible pods.

History

In Central and South America, these beans have been grown as a crop for thousands of years. Archaeologists working in Peru have dated bean remains to about 5000BC.

Beans have formed part of the classical American Indian food plant triangle that includes beans, sweetcorn (maize) and pumpkins.

French beans were introduced to Europe in the sixteenth century by Spanish and Portuguese explorers. They also introduced these beans to Africa.

Interesting Facts About Beans

French beans (and their related varieties) are the most widely cultivated bean in the world, although they are less grown in Britain as the climate is too cool for many forms of this crop. There are many other varieties of this type of bean including cannellini, kidney, flageolet (half-ripe pods, beans eaten like peas) & haricot (dried) beans.

Famous bean dishes include the French 'cassoulet', 'salad niçoise', Mexican 'chilli con carne' and 'baked beans' (haricots in a tomato sauce).

Fresh pods are cooked by plunging in boiling water for a few minutes, with yellow and purple pods turning a more greenish shade when cooked. Dried beans need to be soaked for several hours and then boiled until soft.



(Sources: 'RHS Fruit & Vegetable Gardening' by Michael Pollock; 'Food Plants of the World' by Ben-Erik van Wyk and 'The New Oxford Book of Food Plants' by J.C. Vaughan & C.A. Geissler). (Photographs: Taken by & copyright RHS/ Open Future growit project. Thanks to Chyngton and St John the Baptist schools).



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Growing conditions

French beans are sensitive to frost and cannot be grown outside until late May - June. Beans prefer light, fertile, well-drained soils. Add organic matter, such as compost, to improve soil structure.



When to grow

French beans can be started off in pots in a greenhouse or on a school windowsill in April (after the Easter break). These can then be planted out in May (protect with bottle cloches or fleece if risk of frost). The main outside sowing period is May and June; sow in early July before the summer break to have a crop to return to in September. Sow for haricot and other dried beans in early June and the dried beans can be gathered in the autumn term, for use as seed next year or for use as haricot beans. As these beans are self-fertile they come true to

type from seed and you can easily save seed for future years as long as you don't grow each different types right next to each other.

How to grow

Indoors (April - May): Sow one seed at a depth of 2.5cm in a small 8cm pot. Place in a greenhouse or on a sunny windowsill. Keep well watered. Once plants are about 8cm high, plant outside allowing 20-30cm between plants and rows. Protect with cloches/fleeces if risk of frost.

Outside (May - July): Sow seeds 5cm deep, 10cm apart, in rows 30 - 45cm apart. Cover with fleece if cool weather is expected. The bush types may not need supporting, but short twigs can be used to help keep the beans off the soil. Bush types can be intercropped with taller crops such as sweetcorn (see photograph above).

Climbing varieties will need twiggy sticks, wigwams or netting to scramble up. If planting around a wigwam plant one plant at the base of every cane. Keep well watered, especially during periods of prolonged dry weather.

Harvesting

Begin picking the pods when they are 10cm long. Pods are ready when they snap easily and before the beans can be seen through the pod. By picking regularly you can crop plants for up to seven weeks. Once all the pods have been harvested, water the plants and feed with a liquid fertiliser. This way you can get a second cropping of smaller, yet worthwhile pods. Shell dry beans when the pods are dry and papery and store the beans somewhere cool and dry before cooking. Be sure to cook thoroughly as undercooked dry beans can cause digestive upsets. In schools it may be best just to save the dry beans for growing next year, rather than cooking with them as they can take at least an hour to cook properly.



Pest and Disease Problems

Slugs, black bean aphids and red spider mites are the main pests attacking French beans.

Diseases include: Foot and root rot and sclerotinia rots of the pods and stems. Avoid diseases by using a different site for your beans each year. (Refer to RHS website gardening advice for examples of pests and diseases).

Varieties to try: Climbing: 'Cobra', 'Hunter', 'Kingston Gold'; 'Trionfo Violetto (purple)'. Dwarf Bush: 'The Prince', 'Purple Teepee', 'Cropper Teepee' 'Mont D'or', 'Purple Queen'.

(Sources: RHS Fruit & Vegetable Gardening by Michael Pollock & RHS Website 'Grow Your Own Veg': www.rhs.org.uk/vegetables/crops/index.asp)