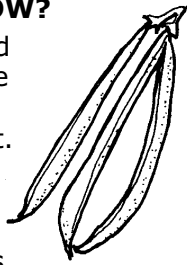


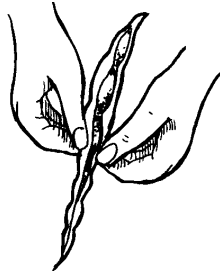
# SNAP BEANS Science Page

## DID YOU KNOW?

Snap beans and dry beans come from the same species of plant. Different varieties are harvested at different stages of growth.



Snap bean varieties are harvested when the pods are young and tender.



Dry bean varieties are harvested when the bean pods are dry and the seeds are hard.

## ORIGINS

Snap beans come from a plant that is native to Central and South America. People were growing beans in Peru over 7,500 years ago — before they were growing corn or making pottery.

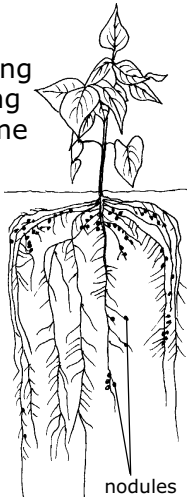


threshing bean pods for their seeds

## CLASSIFYING BEANS

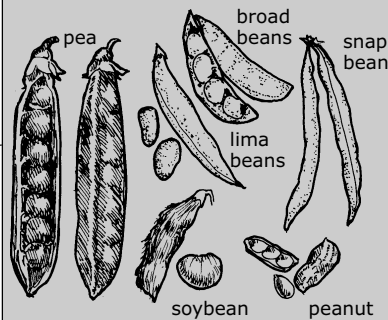
Snap beans, also called green or string beans, belong to the Legume family.

Many legumes have root nodules where special bacteria, called Rhizobia, live. These bacteria can take nitrogen from the air and change it into a form that plants can use.



nodules

### FAMILY Fabaceae (Legume family)



There are about 18,000 species in the legume family, which includes peas as well as many other vegetables that have seeds in pods.

### GENUS

*Phaseolus*

In Latin this means "small boat."



The bean pod is shaped like a little boat.

### SPECIES

*vulgaris*

means "common."

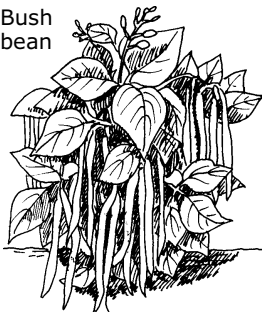
This bean species is commonly grown, both as a snap bean and a dry bean.



## THE SNAP BEAN PLANT

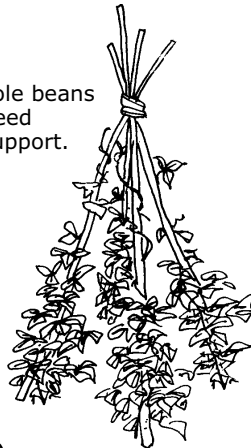
There are two main types of snap beans - bush beans and pole beans.

Bush bean

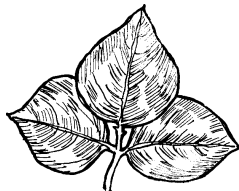
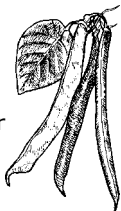


The small flowers are white, red, or purple.

Pole beans need support.



The pods come in green, yellow, purple, or red.



The leaves have three leaflets. Leaflets are rounded at the stem ends and pointed at the tips.

## GROWING AND HARVESTING SNAP BEANS

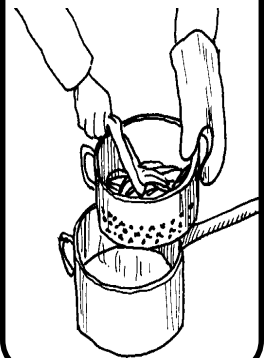
Snap beans are very easy to grow. Do not plant until all danger of frost has passed and the soil is warm. They like full sun and well-drained soil. Keep well-watered.

Snap beans are ready to pick when they are the width of a pencil and the pods snap when you break them.



## USES

Snap beans are used in stir fry, stews, and soups. You can also steam them and eat them right away, or add them to a salad.





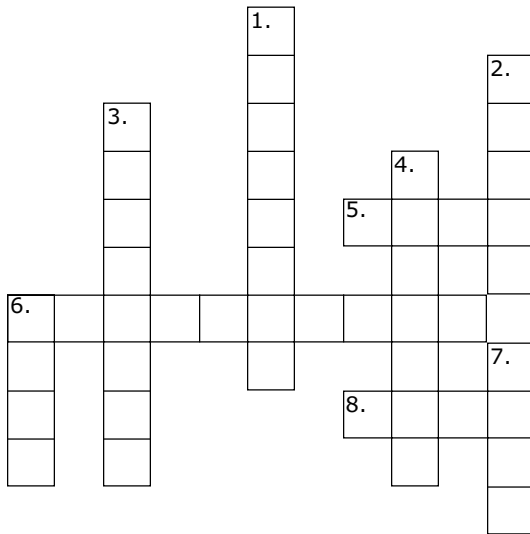
## CROSSWORD PUZZLE

### Across

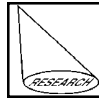
- \_\_\_\_\_ beans need support.
- Beans belong to the genus \_\_\_\_\_.
- People in \_\_\_\_\_ were growing beans as early as 7,500 years ago.

### Down

- Rhizobia bacteria can take \_\_\_\_\_ from the air and change it to a form plants can use.
- A bean leaf has \_\_\_\_\_ leaflets.
- Green beans belong to the species \_\_\_\_\_.
- Many beans have root \_\_\_\_\_ where special bacteria live.
- All legumes have their seeds in \_\_\_\_\_.
- There are two types of snap beans, pole beans and \_\_\_\_\_ beans.



**Crossword puzzle answers:** Across: 5. pole; 6. Phaseolus; 8. Peru. Down: 1. nitrogen; 2. three; 3. vulgaris; 4. nodules; 6. pods; 7. bush.



## SPOTLIGHT ON RESEARCH

### Is it possible to raise the calcium level of snap beans?

Snap beans are a good source of calcium. Calcium is very important for building strong bones. Many people, especially children, eat lots of snap beans. Because of this, researchers wanted to find out if it is possible to raise the calcium levels in beans.

First, they did experiments in the field to find out if there are differences in the amount of calcium in different varieties of snap beans. To do this, they raised 64 different varieties in plots at two different locations. They harvested the beans and analyzed the calcium content of each variety. They discovered that some varieties were much higher in calcium than others. That showed that there must be genes that determine the calcium content of beans. Through breeding, it should be possible to improve the calcium content of many varieties of snap beans. They also learned that the amount of calcium in snap beans decreases as the beans mature. Thinner snap beans have more calcium than older beans. This research is important because it could lead to the development of snap beans with a higher calcium content. Snap beans with extra calcium would provide children with another good source, besides milk, of that important mineral.

Source: Grusak, M.A., Quintana, J.M., Harrison, H.C., Nienhuis, J., and Palta, J.P. (1996). Variation in calcium concentration among sixty S1 families and four cultivars of snap bean (*Phaseolus vulgaris* L.). *Journal of the American Horticultural Society*. 121 (5), 789-793.



## JOKE

Knock, Knock. Who's there?  
Bean. Bean who?  
Bean to any good movies lately?



## SNAP BEAN SALAD

Yield: 4-6 servings

### Ingredients

- \* 1 kg (2 lbs) snap beans
- \* 2 tablespoons oil
- \* 3 tablespoons vinegar
- \* 1-2 cloves garlic, minced
- \* salt and pepper to taste
- \* 2 tablespoons each of fresh basil, parsley, and oregano, minced (optional)

### Instructions

- Trim the stems from the beans.
- Cook the beans by steaming until they are bright green (about 5 minutes). Drain beans.
- Combine the oil, vinegar, garlic, herbs, salt, and pepper in a jar with a tight fitting lid. Place the lid on the jar and shake until well blended.
- Pour the dressing over the beans and toss.

