

TOMATOES Science Page

DID YOU KNOW?

Spanish explorers brought tomato seeds to Europe in the early 1500's. At that time, most Europeans thought tomatoes were toxic, and would not even taste them. Italians were the first Europeans to use tomatoes as a key ingredient in their cooking.



ORIGINS

Tomatoes are native to the Andes Mountains in South America.

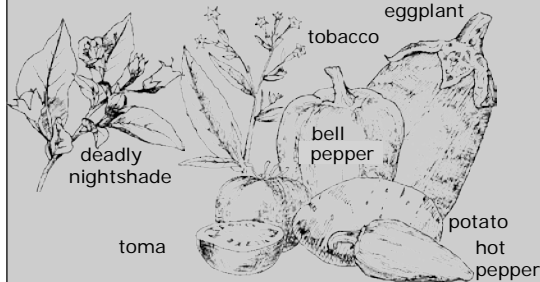


By the time the Spanish arrived in Mexico, the native Mexicans were growing and eating tomatoes. The name "tomato" comes from the Mexican word "tomatl."

CLASSIFYING TOMATOES

FAMILY
Solanaceae
(Nightshade family)

There are about 3,000 species in this family.



This family includes many poisonous species, such as deadly nightshade, as well as many edible species.

GENUS
Lycopersicon

In Greek this means "wolf peach."

Scientists gave tomatoes this genus name at the time when most people thought they were poisonous.



This wild tomato is one of several species found in this genus in Ecuador and Peru.

SPECIES
esculentum

means "something that can be eaten."



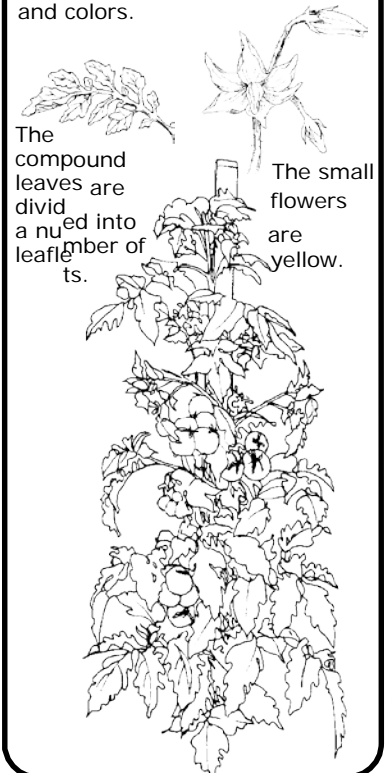
Scientists gave tomatoes this species name after people realized that they were not poisonous.

THE TOMATO PLANT

There are more varieties of tomatoes than of any other vegetable.



Some varieties are bushy, with fruit produced at the tips of branches. Other varieties are more like vines. The fruits come in many shapes, sizes, and colors.



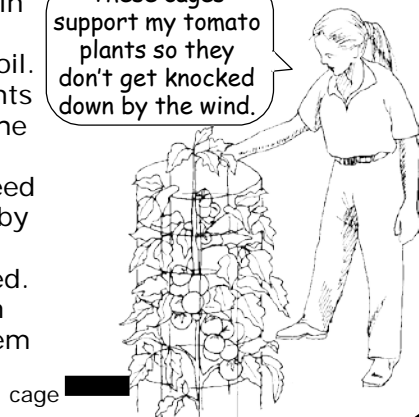
The compound leaves are divided into a number of leaflets.

The small flowers are yellow.

GROWING AND HARVESTING TOMATOES

Tomatoes thrive in full sun in well drained, fertile soil. Set out transplants one week after the last frost date. Most varieties need to be supported by stakes or cages. Keep well watered. Once fruits begin to ripen, pick them daily.

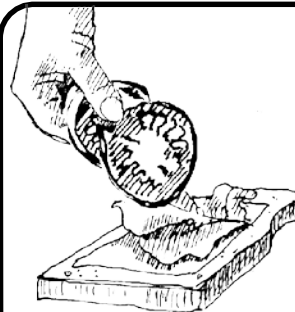
These cages support my tomato plants so they don't get knocked down by the wind.



cage

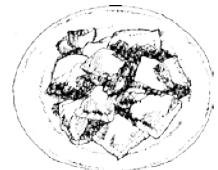
USES

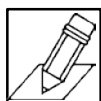
Most tomato varieties can be used for both fresh eating and cooking. However, Italian paste tomatoes are best for cooking into sauces. Large beefsteaks are good for slicing.



tomato slices

ravioli with tomato sauce

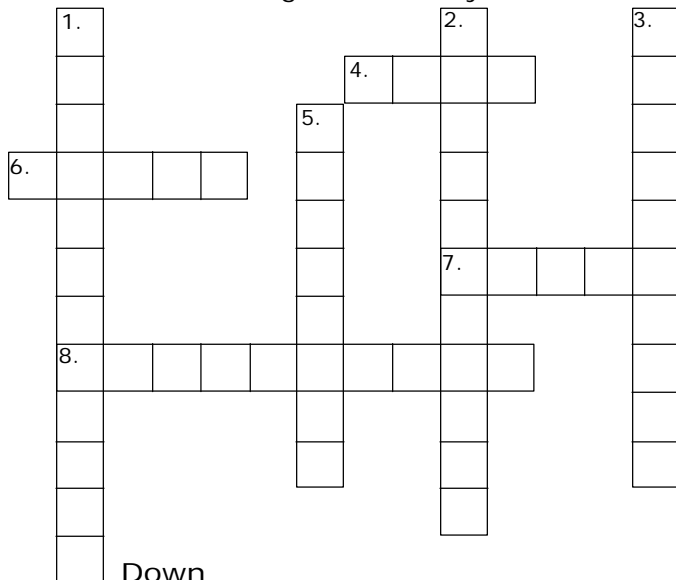




CROSSWORD PUZZLE

Across

4. Tomatoes are _____-season crops.
6. Tomatoes are native to _____America.
7. A type of tomato that is good for cooking.
8. Tomatoes belong to this family.



Down

1. Genus name for tomato.
2. Set out tomato _____one week after the last frost date.
3. Species name for tomato.
5. A vegetable in the same family as tomatoes.



RIDDLE

How do you fix a broken pizza?



SPOTLIGHT ON RESEARCH

Are wild relatives of crop plants useful?

In 1962, two young plant explorers were studying wild potatoes in Peru. Wild species of many important crops in the Solanaceae family are native to the Andean region. Botanists look for these wild relatives because they may have important traits, such as disease resistance, which can be incorporated into cultivated plants.

Eating lunch on a rocky mountain slope, the two plant explorers picked some fruits from a wild tomato plant that was growing nearby. The fruits were green and only the size of marbles, but very sweet. The botanists saved the seeds, and later mailed them to a well-known geneticist named Charles Rick.

When Rick grew the seeds, he realized that the plants were a species new to scientists. The tiny fruits of this wild species were very high in sugar — almost twice as high as that found in most garden tomatoes. After ten years of cross-breeding the wild species with the common tomato, Rick was able to produce new varieties of tomatoes that have the desirable features of both species. They were large and red, and very sweet. The scraggly wild tomato plant with the marble-sized, green tomatoes found on that rocky mountain slope proved to be very useful!

Source: Vietmeyer, N. (Ed.) with Advisory Panel from the National Research Council. (1989) Lost crops of the Incas: little known plants of the Andes with promise for worldwide cultivation. National Academy Press, Washington, D.C.

Answer: with tomato paste!



GAZPACHO

Yield: 6 servings

Ingredients

- * 6 large tomatoes
- * 1 large cucumber, peeled, seeded, and finely diced
- * 1 large bell pepper, finely chopped
- * 1 medium-sized red onion, minced
- * 3 tablespoons red wine vinegar
- * 2 tablespoons olive oil
- * juice of 1/2 lemon
- * 2 to 3 tablespoons chopped fresh parsley to taste**
- * 2 tablespoons chopped fresh basil or 2 teaspoons dried basil**
- * salt and freshly ground pepper to taste
- * hot sauce to taste

**Variation: Use 3 to 4 tablespoons of cilantro instead of parsley and basil.



Instructions

1. Peel the tomatoes by submerging them in boiling water for 15 seconds. Remove to a strainer and rinse under cold water. The skins should slip right off.
2. Core the tomatoes and gently squeeze out the seeds, which are discarded. Chop half of the tomatoes coarsely and puree the other half in a blender. Combine the puree and chopped tomatoes in a large mixing bowl.
3. Blend the remaining ingredients with the tomatoes. Cover and refrigerate. Serve chilled.