



# Champaign County Juvenile Detention Center Master Gardener Community Garden

## Tomatoes Lesson

---

### Time

15 – 30 minutes

### Overview

The tomato is the most popular vegetable grown in the garden in America. This lesson explores the tomato plant. This lesson could be done as a separate lesson on tomatoes or a part of lesson discussing the major components of salsa. The activity would vary depending on the way the lesson is done.

### Objectives

Students will:

- Discover the history of tomatoes.
- Identify different types of tomatoes and how to plant, care for, and harvest them.
- Learn about the nutritional value of tomatoes.
- Learn about some uses of tomatoes in different cuisines, particularly in Mexican salsa.

### Supplies

For separate tomato lesson:

- Different varieties/colors of tomatoes
- Tomato plants for planting

For salsa lesson:

- Ingredients for salsa: onion, cilantro, peppers, salt, black pepper, cumin powder, lemon juice and any other spices/ingredients you wish
- Cut all ingredients beforehand

### Snack

- Salsa
- Tortilla chips
- Juice/water

### Activity

This could be one of two activities:

Planting, harvesting, and tending tomato plants

Salsa making

## Sources

<http://www.urbanext.illinois.edu>

<http://www.weekendgardener.net>

# Tomatoes

**DO:** Begin by introducing yourself and the other Master Gardeners by first names.

**SAY:** Good afternoon. We are a group of Master Gardeners of Champaign County here to provide a gardening program today at JDC. In the fall and winter months we come every other week to give a lesson on plants, eating right, and taking care of the planet. In the spring and summer we work together with you to plant and maintain a vegetable and flower garden in the outside rec area. (depending on time... I became interested in gardening because... Does anyone else have gardening experience or a relative who gardens?)

Today's lesson will be... I am... with other volunteers... (introduce themselves).  
(Participants may introduce themselves also.)

Today we are going to talk about the most popular garden plant in the United States, the tomato.

Tomatoes are the most popular garden vegetable in America. The tomato belongs to the *Solanaceae* or nightshade family of which some plants can be poisonous. For this reason for many years, tomatoes (then called "love apples") were considered poisonous and were grown solely for their ornamental value.

The tomato is native to Central and South America and the southern states of North America. There is evidence that it was first domesticated by the Aztecs. The tomato plant is a tender, warm-season perennial that is grown as an annual in summer gardens all over the continental United States. Spring and fall freezes limit the outdoor growing season.

Tomatoes are usually easy to grow and a few plants provide an adequate harvest for most families. The quality of fruit picked in the garden when fully ripe far surpasses anything available on the market, even in season.

## Heirloom Tomatoes

A particularly large number of heirloom tomato varieties are available today, mainly because tomatoes normally do not cross-pollinate. Seed saved from fruits of non-hybrid varieties produce plants fairly identical to the parent plant. Many of the odder colors and types that have resurfaced lately have their origins in these older, self-saved varieties.

The plant type is usually large, sprawling and late compared to current commercial varieties. Disease resistance may also be suspect. If, however, the gardener wants to try a few truly weird or tasty types, these usually mature some fruits almost anywhere except in the shortest-season areas. Specialty seed houses and exchanges are a source of the widest variety of heirloom tomatoes imaginable.

## **When to Plant**

Buying transplants or starting seeds indoor early, gets tomatoes off to the best start in the garden when warm weather finally arrives and it saves several weeks in growing time. Some gardeners transplant their tomatoes soon after the soil is prepared for spring gardening, when there is a high risk of damage from freezing.

Be prepared to cover early set plants overnight to protect them from frost. For best results with very early plantings, consider black plastic mulch and floating row covers for heat accumulation and frost protection. For best results, with minimal risk, plant when the soil is warm, soon after the frost-free date for your area.

## **Spacing and Depth**

The space required depends upon the growth pattern of the variety and method of culture. Space dwarf plants 12 inches apart in the row, staked plants 15 to 24 inches apart and trellised or ground bed plants 24 to 36 inches apart.

Some particularly vigorous indeterminate varieties may need 4 feet between plants and 5 to 6 feet between rows to allow comfortable harvest room.

## **Care**

Apply starter fertilizer when transplanting. Hoe or cultivate shallowly to keep down weeds without damaging roots. Mulching is recommended, especially for gardeners who wish to maintain their plants for full season harvest. Black plastic or organic materials are suitable for mulching.

Water the plants thoroughly and regularly during prolonged dry periods. Plants confined in containers may need daily or even more frequent watering. About 14 days after transplanting, you may want to consider using a tomato cage or stake to support the tomato vine. Secure the plant to the stake using a loose knot that won't strangle the plant.

A tomato cage should be at least 48 inches (1.2 m) tall, or even taller (some tomato plants grow more than six feet tall). Carefully pull leaves and secondary stems inside the cage as the plant grows.

If you choose to use chemical fertilizer, follow package directions. Many gardeners use only half the recommended concentration per gallon, but fertilize twice as often. You should begin to see fruit about 45 to 90 days after transplanting.

## **Harvesting**

Tomatoes should be firm and fully colored. They are of highest quality when they ripen on healthy vines and daily summer temperatures average about 75°F. When temperatures are high (air temperature of 90°F or more), the softening process is accelerated and color development is retarded, reducing quality. For this reason, during hot summer weather, pick your tomatoes every day or two, harvest the fruits when color has started to develop and ripen them further indoors (at 70 to 75°F).

On the day before a killing freeze is expected, harvest all green mature fruit that is desired for later use in the fall. Wrap the tomatoes individually in paper and store at 60 to 65°F. They continue to ripen slowly over the next several weeks. Whole plants may be uprooted and hung in sheltered locations, where fruit continues to ripen.

### **Common Problems**

**Tomato hornworms** are large (2 to 3 inch long when fully grown), green caterpillars with white stripes on the body. A horn protrudes from the top rear end of the worm. Tomato hornworms feed on the leaves and fruit. Several worms on one plant can quickly defoliate it and ruin developing fruit. Because their green coloring so closely resembles tomato foliage and stems, they are difficult to see. Handpick in cooler parts of the day or use suggested biological insecticides. If you see hornworms with small, white cocoons protruding, leave them alone. These structures are the pupae of parasitic insects that help control the hornworm population and the individual wearing them is already doomed.

**Verticillium** and **fusarium wilts** are soil borne diseases that cause yellowing of the leaves, wilting and premature death of plants. These diseases persist in gardens where susceptible plants are grown. Once they build up, the only practical control is the use of resistant (VF) varieties.

**Blossom-end rot** is a dry, leathery brown rot of the blossom end of the fruit that is common in some seasons on tomatoes. It is caused by the combination of a localized calcium deficiency in the developing fruit and wide fluctuations of soil moisture. The problem is especially bad in hot weather. Mulching and uniform watering help to prevent blossom-end rot. Once the blackened ends appear, affected fruits cannot be saved. They are best removed and destroyed so that healthy fruit setting later can develop more quickly.

### **Nutritional Value and Health Benefits**

Nutritionists have always known tomatoes were good for you, now there is research-based information as to why. Tomatoes are packed with vitamin C, potassium, fiber and vitamin A. Tomatoes are also a source of lycopene. Research suggests that lycopene may play a role in the fight against cancer, especially prostate cancer. Although lycopene is available in all ripe tomatoes, a greater supply is more useful to the body in cooked tomatoes.

### **Preparation**

Tomatoes are, of course, delicious raw, sautéed, grilled, stewed, and added to many preparations. Tomatoes can be preserved for later use by canning, freezing, and drying

### **Recipes**

Here are some popular tomato recipes. **Can you think of any others?**

**Fresh Garden Salsa**

Fresh diced tomatoes, combined with fresh onions, peppers and herbs such as cilantro make a delicious fresh salsa. Serve with traditional tortilla chips or use as a side dish with grilled meat

**Fried Green Tomatoes**

Fried green tomatoes are a southern tradition made famous by the movie of the same name. They are so popular in the south that gardeners plant extra slicing tomatoes to be harvested green for this recipe.

**Grilled Tomato Kebabs**

Small tomatoes such as cherry, current or pear tomatoes are best eaten raw or briefly cooked. They are perfect for skewering and grilling because they do not fall apart, unless overcooked. If you are using wooden skewers, soak them for 30 minutes in cold water before using.