



Growing Tomatoes in Your Garden

UCCE Stanislaus County

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Growing tomatoes can be a fun and healthy activity. This guide is designed to help home gardeners choose tomatoes that will flourish in Stanislaus County.

TYPES OF TOMATOES

Tomatoes have two distinct growth habits: determinate (D) and indeterminate (I). Determinates have a bushy appearance and bear most of their fruit early in the season. Indeterminates produce vine-like plants that set fruit throughout the growing season. Most home gardeners like to begin their garden with a few determinate types and then add indeterminates later to keep tomato supplies going until frost.

TOMATO VARIETIES

Tomatoes are classified in many ways. Early tomatoes such as 'Early girl' (D) set fruit at lower night temperatures and are the first fruits of the season. Large tomatoes like 'Beefsteak' (I) have fruits that can weigh a pound or more. Cherry tomatoes (I) are bite size fruits that grow all season long. Heirloom tomatoes such as 'Brandywine' (I) are old seed varieties that are extremely flavorful, but they often have trouble setting fruit. Using a few of each variety ensures a stable crop of flavorful

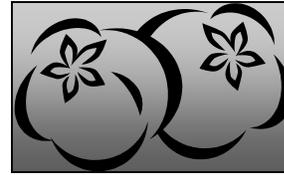
TOMATO CARE

When using seed, plant 5-7 weeks ahead of the last frost date in a greenhouse or indoor sunny location. Transplants should be planted in full sun and kept moist until well established.

Tomato transplants are often leggy and sprawling. Bury the tomato plant, leaving just a few leaves visible above the ground. Add a 3-4" layer of mulch around the plant to help lessen the effect of Central Valley temperature fluctuations.

Healthy transplants do not require fertilizer until flowers and fruit begin to set. Use a fertilizer low in nitrogen, as too much of this element can cause lush green growth instead of tomato production. Support tomato transplants using cages, stakes or a trellis.

When watering, it is important to realize that tomatoes root deeply. In order to ensure the entire root system is adequately moistened, construct a basin (see drawing below) around the plant to hold water.



Pull weeds near tomato plants, because they compete for water, nutrients and sunlight.

In sandy soils, water drains quickly and needs to be replenished frequently. In heavier soils, water takes longer to reach greater depths. If using drip irrigation with 1 gallon/hr emitters, determine how deeply water reaches by testing it on a bare patch of ground. Dig to find if water has reached at least 2-3 feet.

If not, set the emitter for a longer period of time. Do the same for soaker hoses. For a regular hose, set water on low for an hour and investigate water depth. Remember, a tomato plant that is watered properly will be resistant to pests and diseases, as well as able to withstand Central Valley summer temperatures.

PESTS

Insects such as whitefly, aphids, stinkbugs and tomato worms can be controlled by sticky traps, hand picking or by knocking off pests with a spray of water. Application of an insecticidal soap will kill most pests. Follow directions and

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do not apply during high temperatures, as leaf damage can occur.

Root Knot Nematodes

These microscopic pests affect the roots of tomatoes and other vegetable crops, and are common in Stanislaus county. Pulling out the plant reveals a gnarled and knotted root system. If garden soil contains high populations of nematodes, many vegetable crops will not thrive. For complete information on nematode control, see Nematode Pest Note on the website below.

Wilt diseases

These diseases produce yellowing, discoloration and dead tissue in tomato plants. The fungi that cause these diseases lives in the soil.

Tobacco mosaic virus

The effects of this virus are leaves with a fern-like appearance. Tobacco mosaic virus is caused by handling tomato plants after smoking, something garden centers control by ensuring their employees wash hands thoroughly after smoking.

Nematodes, wilt diseases and tobacco mosaic can be difficult to control and usually result in plant death. However, many resistant varieties are available; see the table on the last page of

this guide. For more questions on pests and diseases, consult the Cooperative Extension, a local garden center, or the link at the bottom of this page.

SHOW ME THE TOMATO

Gardeners often have trouble getting tomato plants to produce actual tomatoes. This difficulty often arises from abiotic plant problems. The word ‘abiotic’ simply means “without life” and describes environmental issues related to watering, temperature/weather fluctuations and nutrients in the soil.

Over-watering

Too much water causes lush, green growth with no tomato fruits. Plants need water to grow, but their roots also need oxygen. Allow the plant to become somewhat dry between watering.

Blossom Set

Tomato blossoms are very susceptible to temperature fluctuations. Extreme highs and lows (below 60F and above 100F) can cause blossoms to drop. When temperatures are low, using a hormone spray can help blossoms set fruit. Using this same spray during hot temperatures is not effective.

Blossom End Rot

This problem causes a water-

soaked spot on the end of the fruit that darkens and becomes sunken. Maintaining even soil moisture and not over-fertilizing is the best way to prevent this. However, it may also be caused by a lack of calcium in the soil. If soil has been found to be deficient in calcium, adding additional fertilizer when growing tomatoes may be necessary.

Cracks & ‘Catfacing’

Another abiotic concern in tomatoes are cracks in the fruit. Several factors like inconsistent watering practices, wide differences in day and nighttime temperatures and disturbances to the flower part during blossoming cause this problem.

‘Catfacing’ is a word used to describe a disfigured tomato. If tomatoes are lumpy and scarred, it usually signals that weather was cool and cloudy during blossom set.



Most abiotic plant problems result from the environment of the plant. Experiencing the frustration of battling the

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elements gives gardeners an idea of what being a farmer in Stanislaus County is like!

TOMATO FLAVOR

There is no official guide to explain the flavor of tomatoes. As with anything else, tomato flavor is open to interpretation. One of the terms used to describe the taste of tomatoes is the word “acidity”.

Tomatoes low in acidity tend to be sweet and easy on the stomach, while those with a medium to high acidity have a tangy and/or tart flavor. Some people say tomatoes low in acidity have no flavor, while others disagree. Many local garden centers and growers have a yearly tomato tasting, and attending one is always a fun and educational experience.

A BIT OF HISTORY

Tomatoes have not always been the popular fruit they are today. Native to South America, they did not make their way to Europe until Cortez introduced them in the 1500's. Much of Europe enjoyed this savory fruit, while England would not partake. The reason was based on the fact that tomatoes are in the same family as the deadly plant

nightshade. The U.S sided with England in considering this plant to be toxic. Actually, the leaves of the tomato plant are poisonous, not the fruit.

In 1820, a gentleman named Colonel R.G. Johnson announced he would eat an entire bucket of tomatoes while standing on the steps of the Salem, NJ courthouse. Johnson's doctor condemned him publicly declaring he would commit certain suicide. Spectators alternately screamed and fainted while watching, but the Colonel ate every single one, convincing the town and all who heard his story that the tomato was indeed an edible (and delicious) new commodity.

AVAILABLE VARIETIES

Stanislaus County has unique characteristics, so it's important to grow tomatoes known to thrive in our area.

The best way to enjoy tomatoes throughout the growing season is to choose early, mid and late season varieties. In this way gardeners can have a constant bounty of tomatoes. 3-4 tomato plants is adequate for a family of four.

The last page of this guide represents a compilation of tomatoes that local garden centers and nurseries carry every year.

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Other Plants in the Family

'Solanaceae'

Peppers, tobacco, tomatillos, eggplant, potato, jimson weed and petunia

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TOMATO KEY

I= Indeterminate
D= Determinate

T=Resists tobacco mosaic virus
N=Resists nematodes

V or **F**= Resists a wilt disease

Ace (D)	VF ; pest resistant; mid season; medium size; tangy yet sweet. Low in acid. Faithful producer and long-time local favorite.
Beefmaster (I)	VFNT ; mid to late season; large (up to 2 lb fruits) excellent slicing tomato that is nearly seedless.
Better Boy (I)	VFN ; mid season; large fruits; firm, good slicing tomato.
Brandywine (I)	Late season; large 1 lb beefsteak fruits; popular variety with local gardeners; Heirloom.
Celebrity (semi- D)	VFNT ; mid season; large, firm fruit.
Champion hybrid (I)	VFNT ; mid season; large, attractive fruit. Good sandwich tomato.
Cherokee Purple (I)	Late season; large, purplish red fruits are considered highly flavorful by local gardeners; Heirloom.
Early Girl (I)	VF ; early season; small fruit; favorite of many gardeners.
Green Zebra (I)	Mid season; small to medium greenish-yellow fruit; tangy flavor; Heirloom.
Lemon Boy (I)	VFN ; mid season; yellow fruits are tangy flavored.
Mortgage Lifter (I)	Late season; huge, beefsteak type tomato can be up to 4 pounds. Flavor is very popular with local gardeners; Heirloom.
Roma (D)	VF , mid season; pear shaped fruits are great for canning. Flesh is somewhat dry.
Shady Lady (D)	VFT ; mid season; medium to extra large fruit; as name suggests, large amounts of foliage shade the fruits and prevent sunburn.
Sun Gold (I)	Early season; bears heavy crop of sweet, orange-red cherry tomatoes.
Super Sweet 100 (I)	VF ; early season; small sweet cherry tomatoes.
Yellow Pear (I)	Late season; medium cherry tomato pear-shaped fruits. Tangy flavor; Heirloom.

This guide is not exhaustive. Many more varieties are available and thrive in Stanislaus County.