



Tomatoes in Your Garden



Tomatoes are one of the most popular homegrown garden vegetables. This guide is designed to help home gardeners choose and care for tomatoes that will flourish in Stanislaus County.

ARE TOMATOES A FRUIT OR VEGETABLE?

Botanically speaking, tomatoes are fruits because they form a flower and contain seeds. Nutritionists consider tomatoes vegetables.

However you want to call them, they're delicious either way!

TOMATO GROWTH HABITS

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.

You can tell if a tomato is determinate or indeterminate by looking at the tag. The guide at the end of this publication lists both kinds.

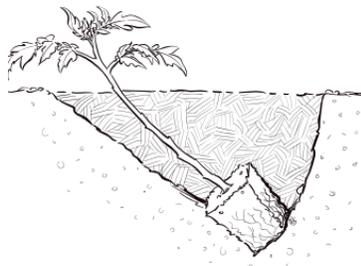
HYBRID vs. HEIRLOOM

Some tomatoes are classified as hybrid or heirloom. Hybrids are created when plants are cross-

pollinated with at least two different varieties to produce offspring containing the best trait of each parent, such as easy care, better yield, improved flavor and/or disease resistance. Most hybrid seeds are sterile and thus will not germinate, or if they do, seeds saved from will not produce the same tomato. Heirloom tomatoes are fruits whose seeds have been passed down from generation to generation for at least 40-50 years. You can save the seeds of these tomatoes as long as you space them at least 25 feet apart.

TOMATO CARE

From seed, plant 5-7 weeks ahead of



the last frost date in a greenhouse or indoor sunny location. Using a grow light and heating mat can help speed up the process.

Before planting, amend your soil with 3-4" inches of compost and mix well to help get your garden soil ready. Plant transplants in full sun in late March-May, once soil has warmed.

If your transplant is leggy and sprawling, remove the lower leaves and bury the tomato plant

and root ball, leaving just a few leaves visible above the ground.

Remember to keep the root ball of the plant moist. Once established, tomatoes root deeply, so make sure water is reaching the roots of your plant.

In sandy soils, water drains quickly and needs to be replenished frequently. In heavier soils, water takes longer to reach greater depths.

You can water using a hose, soaker hose, or drip irrigation. Just make sure the water you apply reaches the roots which can be as deep as 2-3 feet. If you aren't sure if your plant is getting enough water, just dig! Check to a depth of 2-3 feet. Adjust your watering time as needed.

Remember, a properly watered tomato plant will be healthy and more likely to resistant to pests and diseases, as well as able to withstand Central Valley summer temperatures.

Fertilizer

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

Support

Tomatoes have a tendency to sprawl, and fruits on the ground are easier to access for pests. Support transplants using cages,

stakes, or a trellis.

PESTS & DISEASE RESISTANCE

Tomatoes are susceptible to diseases and pests which can reduce or destroy a crop. Varieties which have been developed to be disease and/or pest resistant will provide the best results.

Insects such as whitefly, aphids, stinkbugs, and tomato worms can be controlled by hand picking or with a gentle spray of water. You can also use a less toxic pesticide such as an insecticidal soap you can purchase at a nursery or garden center. Follow directions and do not apply once temperatures reach 90 F, as leaf damage can occur.

Root Knot Nematodes

Nematodes are one of the most troublesome pest problems for gardeners. The first sign of trouble is a plant that turns yellow and doesn't produce a normal crop. 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.

Unfortunately, tomato plants labeled to resist nematodes may not produce a normal crop.

Wilt diseases

Wilt diseases such as Fusarium or Verticillium 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. It's can be caused by handling tomato plants after smoking.

Resistant Varieties

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 Assistance

For more information on pest and diseases and their control consult the Master Gardener office in Stanislaus County at (209) 525-6802 or <http://ucanr.edu/ask/ucmgstanislaus>

SHOW ME THE TOMATO

Sometimes gardeners have trouble getting tomato plants to produce actual tomatoes. This difficulty may be due to an abiotic plant problem. '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 may create lush, green growth on your plants, but no tomato fruit. 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 helps to prevent this problem.

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. Although unattractive, the tomatoes are still edible.

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.

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 1500s. Much of Europe enjoyed this savory fruit, while England would not partake. The reason for this was due to tomatoes being 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.

TOMATO VARIETIES

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

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-type tomatoes (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 extremely flavorful, but they can have trouble setting fruit.

The best way to enjoy tomatoes throughout the growing season is to have a combination of each vari-

ety. This ensures a stable, ongoing crop of flavorful tomatoes. 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 publication is a guide that lists tomatoes you can find at local garden centers and nurseries. The list includes a key for type and disease resistance.

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Growing Tomatoes in Your Garden

Tomato Key

I=Indeterminate

T=Resists tobacco mosaic virus

V or F=Resists wilt disease

D=Determinate

N=Resists nematodes

Type	Description
Ace hybrid (D)	VF; mid-season; large size, thick-skinned; tangy yet sweet. Low in acid. Faithful producer and long-time local favorite. Grown with short cage or as large bush. 80 days to maturity.
Beefmaster hybrid (I)	VFNT; mid to late season; very large (up to 2 lb. fruits) excellent slicing tomato for sandwiches that is nearly seedless. 80 days to maturity.
Better Boy hybrid (I)	VFN; mid-season; large fruits; firm, good slicing tomato. 75 days to maturity.
Better Bush hybrid (D)	VFN; early small to medium fruit on compact bush. Does well in containers. 68 days to maturity.
Brandywine (I)	TV; late season; large 1 lb. beefsteak rosy fruits; popular variety with local gardeners. Amish Heirloom. 90-100 days to maturity.
Celebrity hybrid (semi-D)	VFNT; mid-season; widely adapted with large, firm fruit. AAS winner. 70 days to maturity.
Champion hybrid (I)	VFNT; excellent winter crop in Central Valley; large, attractive fruit. Good sandwich tomato. 62 days to maturity.
Early Girl hybrid (I)	VF; early season; continuous bearing of small to medium fruit; favorite of many gardeners. 57 days to maturity.
Green Zebra (I)	Mid-season; small to medium green fruit with pale green stripes; tangy flavor; Heirloom. 78 days to maturity.
Lemon Boy hybrid (I)	VFN; mid-season; yellow fruits are tangy flavored. 72 days to maturity.
Roma (D)	VF; mid-season; pear shaped fruits are great for canning. Flesh is somewhat dry. 75 days to maturity.
Shady Lady (D)	VFT; mid-season; medium to extra large fruit with excellent flavor; as shade the plant to prevent sunburn. 75 days to maturity.
Small Fry (D)	VFN; small cherry fruit, compact bush which does well in containers; AAS winner. 65 days to maturity.
Sun Gold (I)	Early season with heavy crop of medium cherry tomatoes with clusters of orange fruit.
Super Sweet 100 hybrid (I)	VF; early season; small, sweet clusters of cherry tomatoes on large vine. 65 days to maturity.
Yellow Pear (I)	Late season; medium yellow pear-shaped cherry tomato Tangy flavor; Heirloom. 78 days to maturity.

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