

Weather Happens: Tomatoes versus the Environment

Too hot, too cold, too wet, or too dry. All of these environmental factors can affect your tomato crop. Moisture we can control to a certain extent but as for temperature we just have to be patient with Mother Nature. By understanding the effect we will know better what to expect.

Giving Them the Best Start

Some conditions we can control like planting the tomatoes where they get 6-8 hours of sunlight per day and ensuring the soil is optimized for pH and nutrients. Have your soil tested and then amend as needed. The soil should be well drained with a pH of 6.0 to 6.8. It should have adequate levels of potassium and calcium. Too much nitrogen can cause the production of excessive vegetation at the expense of setting fruit. Too little nitrogen and the plants do not grow well. Follow a fertilization program as listed in the chart below.

When	Type	Quantity
1-2 weeks after first cluster of fruits	33-0-0	3 T per 10 feet
2 weeks after first tomatoes ripen	5-10-5	3 T per 10 feet
One month later	5-10-5	3 T per 10 feet

Hot and Cold

Tomatoes are sensitive to temperatures. Even a light frost will kill the plants. If your young plants are in the ground when a late spring frost is predicted be sure to protect them with paper bags or newspaper. At the end of the season pick any fruits still on the plants before the first frost.

Temperature also plays a role in the setting of the fruit. Temperatures below 50 degrees or over 70 degrees for several nights will cause the blossoms to drop. Temperatures above 85 degrees for several days will cause the blossoms to drop and fruit to abort. Temperatures of over 104 degrees as few as four hours can also cause the blossoms to drop.

When temperatures are outside of 68-77 degrees the ripening process may be slower. When the temperature is over 85 degrees the plants do not produce lycopene and carotene which are the pigments responsible for the ripe tomato color.

Relative humidity between 40 and 70% is the ideal for transfer of pollen. Excessive wind can dry out blossoms or knock them off the plants.

There is always a debate about whether to remove the suckers from a tomato plant. Leaving the suckers will produce more fruit but they will be smaller as they compete for nutrients. On the other hand the additional foliage can help to shield the fruit to prevent sun scald on very hot days.

Another potential problem with excessive heat is "yellow shoulders" which is the failure of the fruit to turn red close to the stem end. This is mostly caused by insufficient potassium. Using row covers in the hottest part of the day can help prevent heat related "yellow shoulders".

Wet and Dry

Tomato plants can have very deep roots. The soil should be kept evenly moist to promote plant health. It is best to water deeply as needed rather than lightly every day. At the other extreme too much water can cause the fruit to crack. This happens especially when there is a lot of rain after a relatively dry period. The skin just can't expand quickly enough to compensate for the additional water. When a heavy rain is expected you can pick the mostly ripe fruit and let it continue to ripen indoors. The best time to water tomatoes is first thing in the morning. The water is able to sink in rather than be evaporated by the sun. Water at the base of the plant when possible. Water on the leaves can lead to blight and diseases. Mulch can also help control the moisture level in the ground.

If the only area you have to plant tomatoes is too moist or tends to hold water after a rain then consider building raised beds so that you can better control the moisture level.