



Why Are My Tomatoes Still Green?

Many gardeners this summer thought that all of that heat and sunshine would produce an early, bountiful crop of gorgeous red ripe tomatoes and now they are surprised to see many green tomatoes not ripening up. The problem was probably that it was TOO hot and TOO sunny. The ideal temperature for ripening most of the varieties that we grow here is 20-25°. Ripening slows down above and below this range. Extended periods of a few days outside of this range can stop the ripening process altogether. When temperatures rise up to 30°, which ours certainly did this summer, the tomato will not produce lycopene and carotene, the pigments responsible for the ripe tomato colour. It is very common for tomato plants to reach the mature green stage by mid-summer, when it's very hot, but then the fruit just stays green. Sadly, in an attempt to rush along the ripening, many gardeners admit that they've pruned off many leaves to expose their tomatoes to more sun, which is simply making the problem far worse. What we need to do is add some shade cloth to reduce the temperature – this WILL speed up the ripening if we do it as our green tomatoes have reached a good size – or we need to pick them at the appropriate time and allow them to ripen indoors.

The problem is that many gardeners are reluctant to pick them while they are green. They are convinced that leaving their green tomatoes on the vine to ripen in the sun will result in better flavour than picking them green and ripening them indoors. Sadly, this is a myth. It's no doubt based on the fact that we've all purchased tomatoes in a store that were flavourless and we assume that it's because they were picked green so that they could be shipped easily. The problem isn't that they were picked green. Often it's because of the variety – commercial farmers create hybrids that won't bruise while in transit and that won't get soft on a store shelf – the fact that they taste like cardboard isn't an issue to them. It's also possible that were WERE picked when too green - you can certainly pick your tomatoes while green and have them ripen and taste "like they should" – but you NEED to let them reach what's known as their **breaking point** or the **breaker stage**.. The problem is that commercial growers often don't wait for this.

You have probably heard about putting the green tomatoes in a bag along with a ripe apple or banana. The idea here is that these ripe fruits produce their own ethylene gas, which fills the container causing tomatoes to ripen quicker. Ethylene is also used commercially to speed up ripening. Commercial tomatoes are usually picked at or before the mature green stage and stored cool to suspend the ripening process. When they get their order from a grocery store chain, they are warmed up and treated with ethylene, so that they are ripe by the time they reach the store. Artificial ripening of tomatoes that have not reached the breaker stage is what causes us to complain about store bought tomatoes. The good news is that home gardeners CAN ripen their tomatoes indoors and have them taste just as good as ones ripened on the vine – IF we know when to pick them and when to eat them.

(Before we eat them, we need to let them reach their "ripe" point for their best flavour - which just means that they've reached their final colour and their flavour and texture will be what you'd been hoping for back in the spring when you planted them. The colour could be red, yellow, orange or even black or purple or green with some of the interesting heirloom varieties, but whatever colour it is, it should be as intense as possible. And yes.... This can be reached on your kitchen table – not just in the garden on the vine!)

I mentioned earlier that too often, we're tempted to remove some leaves to expose the tomatoes to more sun to get them to turn red on the vine. Tomatoes DO need sun to grow and produce fruit – but they do NOT need sunlight to fully ripen, and therefore removing leaves from the plant to expose the fruit will NOT

speed up the ripening process. In fact it can slow down the process because ripening stops when temperatures get too high, like they did this summer! Direct sun exposure can also result in fruit with **sun scald**, large white or yellowish patches that slowly spread and blister or become sunken on the side that was in direct sun. So never remove leaves to expose the tomatoes to more sun.

When bringing tomatoes indoors to ripen, we need to allow them to pass the **mature stage** and then to reach the **breaker stage**. The mature stage does not mean that they are red and ready to eat. A fruit is at the mature stage when the **seeds have developed** to a point where they will germinate if you collect them and plant them next spring. It will still be green when this happens, but it will have begun to produce ethylene – a natural hormone that will kick-start the ripening process. The fruit will have reached its final size and the outside will have begun to turn a paler green. The fruit and seeds are now **mature**, but they are still not at the “breaker stage” so are still **not ready to be picked**.

The fruit starts the ripening process a couple of days after reaching the mature green stage, The exact timing of this depends on the variety, but generally it depends on fruit size where cherry types go faster and large fruited ones take longer. Everyone who grows tomatoes knows that their cherry tomatoes will be turning red long before their beefsteaks or their Roma varieties.

You can see the changes between the stages both on the skin and inside the fruit, both of which start turning a pinkish color. The breaker stage is reached when the fruit has a definite pink colour on 10% – 30% of the fruit. It's called the breaker stage because a layer of cells form across the stem of the tomato, sealing it off from the main vine. When this occurs, there is nothing that can move from the plant into the fruit – that connection is now “broken”. At this point, the tomato can be harvested and ripened off the vine with no loss of flavour, quality or nutrition. The fruit continues to produce more ethylene, which speeds up the ripening process, until the fruit is fully ripe. This process may happen in two days or may take over a week.

A few local gardeners have also commented that they simply had poor fruit production this summer – it wasn't that their tomatoes were remaining green – it was that they had few or no tomatoes at all. Hopefully none of our members had this issue! Again, the weather was no doubt the problem. Most of the common varieties of tomatoes that we grow locally stop setting fruit at about 30°. If your tomatoes were late in being pollinated, the high temperatures of this summer may have already arrived before your fruit began to develop – especially if you were growing varieties that stop at even lower temperatures. Many gardeners now seek out heirloom varieties and order them on-line. The issue with heirlooms is that they were bred by farmers for their specific growing conditions – the soil acidity, the average temperatures, the average frost dates, etc. That's why if you plant ones that were bred for OUR local conditions, you'll love them. But if you purchased heirloom varieties that were developed in areas where the temperatures never get very hot, your plants would certainly have been very unhappy this summer!

Some gardeners might be tempted to water more or to fertilize more when they see their tomatoes staying green on the vine. Again, sadly, this won't help! Fertilizer and water certainly does help the development process up to the mature green stage, but they don't change the ripening process.

So what's the bottom line if you still have green tomatoes? Harvest them as soon as they've reached the breaker stage. Remember that when the skin takes on a slight pinkish colour, usually at the bottom of the fruit, it has definitely reached the breaker stage. There is no value in leaving it on the plant any longer. In fact, there are some good reasons for harvesting at this point. Your tomatoes are less likely to be damaged by insects, slugs, birds or chipmunks. AND they also won't split if you have a sudden heavy

rain, which is common at this time of the year as hurricanes in the south often push rain into our area. In warm weather, taking them inside to a cooler spot can actually speed up the ripening process. If a tomato is picked at or after the breaker stage it will ripen properly, and reach full flavor and full nutrition inside your home on your kitchen counter. If you have too many tomatoes to deal with all at once, (a wonderful problem to have!) store some in a cooler place to slow down the ripening process but keep the temperature above 10°.

Many of us saw our parents placing their tomatoes in a bag with an apple or a ripe banana to make them ripen faster. This may or may not be a good idea! A ripe banana or apple will produce ethylene gas which can speed up the tomato ripening process IF the fruit has reached the mature stage. If it has not, it won't ripen no matter what you do. And if it has reached the mature stage it may still ripen, but it won't taste quite as good as it could have if you had left it to ripen slowly and allow all the sugars to develop. And if you leave them in the bag too long, they may begin to rot.

There are lots of ways people say they've successfully ripened tomatoes – in cardboard boxes wrapped in newspaper – left on the vines which were pulled from the ground and hung upside down in a cold garage – etc. Many of these will work – and if you've had success in the past with a particular method, by all means keep doing that. Just know that it will work - BUT ONLY IF the plants have reached the mature stage and are very close to reaching the breaker stage when you harvested them..