

By July, the Kansas gardener has already worked for many hours cultivating the perfect tomato plants. Selecting the best varieties, picking the perfect spot to plant, staking and watering. Now, the wait for fruit is almost over.

Although the time for tomato harvest is upon us, the plants are not yet done throwing challenges our way. With scorching summer temperatures, fruit set and color may both be hindered. While temperatures exceed 100 degrees, tomato plants are trying only to survive and fruit takes a backseat. All of the plant's energy goes into moving and conserving water.

During these high temperatures you may see tomato leaves curling upwards. This is the tomatoes way of reducing water loss through its leaves. Adequate water will help reduce the severity of heat stress but tomato plants, like many of us, will be happiest with temperatures below 90 degrees F.

If your tomato plants aren't developing fruit—blame the heat. Night temperatures above 75 degrees F and day temperatures above 95 degrees F can cause poor fruit onset. The extreme heat lowers the viability of flower pollen preventing pollination from occurring. Dry, hot winds can exacerbate the issue.

A few varieties; Florida 91, Sun Leaper and Sun Master, will set fruit at higher temperatures, although the difference is only 2-3 degrees. Cherry tomatoes seem to tolerate the heat better than slicing tomatoes. When cooler temperatures return, the plants will resume growing fruit normally.

When producing properly, a tomato flower takes about 3 weeks to develop into a golf ball sized fruit. From that point growth is much more rapid, taking only 3-6 more weeks to fully mature.

In addition to causing issues with fruit development, our weather can also affect how quickly the fruit you do have, matures. Once temperatures begin to climb, fruit coloring slows down dramatically.

For those with tomatoes on the vine, you may notice the fruit turning yellow or even orange but not the deep red we often desire. The red pigments in tomato fruit don't form properly in temperatures above 95 degrees F. The lack of red in the fruit will have no effect on the taste or ripeness, just the appearance. If red tomatoes are a must, pick your tomatoes as soon as they start to change color. At this point in fruit development, the tomato has cut itself off from the vine and nothing else will be passed between the two. This is called the "breaker" stage. If you harvest at the breaker stage and bring the fruit into air-conditioning they will ripen quickly and develop the characteristic deep red.

During cooler years, or if temperatures cool this year, it's still a good idea to harvest tomatoes at the breaker stage. A ripe tomato is an open buffet for worms, squirrels and raccoons. The sooner you bring tomatoes indoors, the greater the odds that you'll get to consume the fruit you worked so hard to grow.

The tomato gardener is nothing, if not patient. After so much work and waiting the final push can be the hardest. Although watering and fertilization may seem like a good idea to help your plants combat stress—restrain yourself. The lush, leafy growth that these activities encourage may further delay fruit production. Your plants should acclimate to the heat eventually and temperatures may cool, allowing production to resume.