



Kevin Milaeger

Milaeger's

HEAT WAVE----How the heat affects your tomato and pepper plants.

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Tomato and pepper plants grow well in hot weather. If you keep them watered and fertilized, they'll be very happy. But weather extremes such as our latest heat wave can cause problems. In the case of tomato and pepper plants, there can be issues with "blossom set." The flowers of a plant must be fertilized in order for fruit to develop; this process is referred to as "blossom set," or "fruit set." If the flowers go unfertilized, they drop off and we must wait until the plant produces new flowers, and hope the weather conditions are more favorable for successful fertilization.



There is nothing we can do about the heat, but there are some possible solutions for blossom drop. The most obvious solution might appear to be a



Tomato flower

product called "Blossom Set." This is a natural, organic hormone, and it has been used for many years. But we don't recommend this for use during hot spells---it is most effective when temperatures are too low for blossom set, so it is used only early in the season, when temperatures sometimes dip to the low 50's. You simply spray it on the blossoms and you improve your chances of producing fruit---it prolongs the life of the flowers, so there is greater chance of pollination.

Another remedy is shaking the plants when they are in bloom. When my folks built our first greenhouse in 1960, our first crop was hothouse tomatoes. Being indoors, there was little air movement, and no insects. When the plants were in bloom someone went up and down the aisles several times a day and gently shook each plant. I guess that was standard practice at the time. I'm not sure if it was really necessary, but I know we got tomatoes. This shaking should be done in the morning, before the heat of the day sets in. Like many plants, tomatoes are self-pollinating. That is, each individual flower has everything it needs to produce fruit. If you shake the plant, you loosen some of the pollen, and some of it will likely fall on the sticky stigma. Insects also help the process, but, like the weather, they can't always be counted on. If the weather is excessively hot or cool, insects are less active.

Tomato breeders have addressed the blossom set problem by creating varieties that are resistant to temperature extremes. They have bred varieties for northern growers, and for growers in very hot areas. In our part of the country, we solve the cold problem by planting at the proper time (usually after Memorial Day), and just avoiding the cold weather. For us, the heat problem varies considerably from year to year. This year it is much hotter than usual, but last year it was definitely cooler than usual. A typical summer is one in which we have several short "heat waves", and in those years the plants simply abort some of the flowers during the hot periods, and produce more flowers when conditions improve. Since we usually don't have prolonged periods of intense heat, we



Tomato flower

don't normally have serious problems with blossom drop. Consequently, when we at Milaeger's choose varieties to offer our customers, we base the decision on factors such as flavor, disease resistance, and production.

Peppers are related to tomatoes, and are subject to some of the same maladies. If the daytime temperature exceeds 95 degrees, the pollen will abort. When night temperatures stay above 86 degrees, the flowers will drop because of excessive transpiration. Other factors that can cause peppers (and tomatoes) to lose their flowers are excessive nitrogen, high winds, and lack of pollination. Peppers rely on insects for pollination more than tomatoes do, so anything that causes a decline in the insect population will affect fruit production. A yard that has lots of flowering plants will attract more pollinating insects. As a last resort you can be an insect substitute---get a small paintbrush and go from flower to flower, as an insect would. (Yes, people really do that.....likewise with tomatoes.) For those of you that like hot peppers, this heat



Pepper flower

wave is probably a good thing. The heat of peppers is influenced by temperature and dryness. When both of those factors are elevated, so is the heat of the mature pepper.

We really have no control over the weather. Heck, lots of people have trouble controlling themselves, much less the weather. Instead of ruminating on the heat, I think it's best to focus on areas where I can be effective (or at least I can pretend to be)---fertilizing, pruning, or tying up the plants, watching for insects, varmint control, and of course, weeding.