

Effects of Hot Weather on Garden Plants

By Larry Caplan, Extension Horticulture Educator, Vanderburgh County, IN

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This past week saw brutally high temperatures throughout the tristate. Local media did a great job providing tips to keep people and pets safe during hot weather. But what about our landscape and garden plants?

High temperatures affect plants in a number of ways. The most visible response to heat is for the plant to wilt. Wilting is actually a survival mechanism for plants, to reduce moisture lost through transpiration. Plants will also close off the tiny pores on the undersides of the leaves, called stomates, to prevent moisture loss.

The downside of these protective measures is that photosynthesis, the process whereby a plant converts light energy into chemical energy, is drastically reduced. A plant under heat stress is not producing as much sugar as it needs, which can lead to starvation of the plant.

High temperatures can prevent many vegetable crops from fruiting or even blooming. Bell (sweet) peppers and bush beans are most affected by the heat. They might bloom, but fail to produce fruit. Pollen production is greatly reduced at day temperatures over 90 degrees and night temperatures that remain over 70. Once temperatures dip below 70 degrees at night, they should begin to set. If the plants refuse to bloom at all, this may be caused by the reduction of sugar which I mentioned earlier.

Kentucky bluegrass lawns should be looking pretty brown right now. This is because bluegrass is a cool-season grass. It does not tolerate high temperatures, so it goes dormant as a survival trait. The grass looks dead, but isn't. A return of cooler temperatures and moisture will bring it back to green beauty.

There are several things you can do to try to protect your plants from high temperatures. First, be sure you are irrigating properly. Water one inch per week, applied all in one day. This is adequate for lawns and woody plants. For annuals, including flowers and vegetables, I would apply one and one-half inches per week, split up into two waterings. Irrigate early in the morning so the leaves dry off quickly, in order to reduce disease problems.

Wilting plants, especially squash, can be temporarily cooled off by lightly sprinkling the garden. Apply about one-tenth of an inch of water: not enough to soak the roots, but enough to cool the plants a bit as the water evaporates.

Apply mulch around garden plants. Loose, light colored mulch, such as straw, will keep the roots cooler than rock or densely packed dark-colored mulch.

If you can provide temporary shade to garden plants, that might keep them cool. Spread a floating row cover a foot or two above your crops; you can use tomato stakes or fence posts to keep it up. This reduces the amount of sunlight reaching the plant, and thereby reduces the temperature.

I'll be at the Vanderburgh County Fair this week, so if you have questions, stop on by! You can also leave a message on my answering machine at 812-435-5287, or send me an email.