

# Garden Smart & Safe During Summer Heat

The stresses of a hot summer take their toll on our gardens and landscapes, as well as on us as their caretakers. While many plants can thrive in the normal summer heat, lengthy doses of daytime temperatures in the 90s and low 100s coupled with nighttime temperatures above 75°F are enough to push even the hardiest gardeners and plants to the edge of their capabilities. **During conditions of extreme heat, some simple tips can help keep both YOU and your garden healthy.**

## Safe Summer Gardening Tips

In 2012, the U.S. Natural Hazard Statistics reported more heat-related fatalities than deaths due to lightning, flood, tornado, or hurricane. With some simple precautions, you can safely garden in the heat. The keys are working slower at cooler times of the day, drinking more appropriate fluids, and taking more breaks in a cool place. Perspiration is our body's method for evaporative cooling. If the air temperature is too high, perspiring may not be enough to cool your body and the resulting heat stress may lead to heat cramps and heat exhaustion or even heat stroke, a potentially fatal condition.

Anyone can experience heat stress, but folks over 65 and the very young are most susceptible; overweight, heart disease, poor circulation, fever, sunburn, and some prescription drugs also increase susceptibility. If you are at higher risk, ask someone to check on you periodically, if not work with you in the garden.



### DID YOU KNOW?

Just as our bodies perspire to stay cool, plants transpire water out of microscopic pores in their leaves. In high temperatures, transpiration can result in wilting which reverses in cool night temperatures if a plant has access to adequate water. Transpiration releases heat and maintains the flow of water and nutrients throughout the plant. A large shade tree may pump **several hundred gallons** of water out of its leaves on a hot summer day, lowering air temperature by as much as 10°F.

### Tips to Avoid Heat Stress While Gardening

1. Drink plenty of cool (not icy cold) fluids; water is best. Drinks with alcohol or sugar actually cause the body to lose fluid. Don't wait to drink until you are thirsty. If your gardening tasks require heavy exertion in the heat, drink 2-4 8-ounce glasses of fluids per hour.
2. Avoid hot foods and heavy meals.
3. Replace salts and minerals, which are removed by sweating.
4. Wear lightweight, light-colored, loose-fitting clothing, and a wide-brimmed hat.
5. To prevent UV damage to skin, apply a sunscreen of SPF 15 or higher 30 minutes before going outdoors and reapply after significant perspiring.
6. Schedule your activities for cooler times of the day—early morning or early evening.
7. Pace yourself and accept that you shouldn't work as fast and you probably won't get as much done as you would in cooler weather. If you are not used to the heat, start slowly.
8. If you find yourself getting too hot or breathing heavily, seek a cooler location—indoors in air conditioning or in a cool shower, or outdoors under a garden hose or sprinkler or in a shady area.

*from the Center for Disease Control*

## Keep Your COOL - Know the Signs and Stages of Heat Stroke

### HEAT CRAMPS

**CAUSE:** Exposure to high temperatures possibly in combination with physical exertion.

**SYMPTOMS:** Excess sweating; fatigue; thirst; and stomach, arm, and/or leg cramps.

**TREATMENT:** Drink water or fluids containing electrolytes (sports drinks), rest, and get to a cool spot.

### HEAT EXHAUSTION

**CAUSE:** Ignoring symptoms of heat cramps.

**SYMPTOMS:** headache; dizziness or lightheadedness; nausea; skin that feels moist; and muscle cramps.

**TREATMENT:** Drink water or fluids containing electrolytes (sports drinks); rest; and get to a cool spot. If symptoms continue, seek emergency medical attention.

### HEAT STROKE

**CAUSE:** Ignoring progression of worsening heat cramps and exhaustion.

**SYMPTOMS:** Body temperature of 104°F or higher; lack of sweating; nausea and vomiting; flushed, hot skin; rapid, shallow breathing; racing heart rate; throbbing headache; confusion; unconsciousness; muscle cramps or weakness.

**TREATMENT:** SEEK IMMEDIATE MEDICAL HELP! Untreated heat-stroke can cause damage to your brain, heart, kidneys, and muscles, and even death. Take action to cool the overheated person such as moving to a cool location; removing excess clothing; placing ice packs or cold, wet towels on head, neck, armpits, and groin.

During conditions of extreme heat, some simple tips can help keep both YOU and your garden healthy. Here's our top 10 tips for helping your garden weather **hot weather**. Flip to the reverse side and read how YOU, *the Gardener*, can avoid heat stress and keep your cool too.



SUMMER VEGETABLE CROPS are also susceptible to high temperatures. Photosynthesis rapidly decreases above 94°F resulting in diminished vegetable production. If night time temperatures remain over 70°F for an extended period, flower production and pollination are reduced. Extended periods of high daytime temperatures also lead to poor pollination and cause flowers to drop. Watering (Tip #1) and mulching (Tip #6) can reduce the impact of high temperatures on garden yields.

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**1. Water wisely** for healthy landscapes during our Piedmont summers, especially during heat waves.

**Watering Basics:** If a plant is wilted early in the morning, it needs water. If a plant looks droopy in the afternoon, check it the next morning.

- Avoid watering foliage; water the soil at plant base. Sun heats the water on leaves resulting in scorch or burn and increases the possibility of fungal diseases.
- Make sure your soil drains properly. Poorly drained, soggy soil conditions combined with hot weather are lethal to plants.
- Keep water from pooling at stem base. Soggy, hot plant tissue is more susceptible to diseases.

**Timing:** Water early morning between 4am and 9am to decrease evaporative water loss, save money, conserve water, and minimize fungal diseases.

**Amount:** Avoid brief, frequent watering; water deeply once a week to wet a sandy soil 12" deep and a clay soil 6-8" deep; this requires about 1" of combined rain or applied water per week.

**Methods:**

- Drip irrigation, soaker hoses, or hand-watering soil around bases of plants are best for deep watering and afford maximum water conservation and cost savings.
- Sprinklers allow coverage of large areas like lawn; never run sprinklers in full sun or windy conditions to avoid evaporative water loss.

**2. Keep weeds to a minimum** to reduce competition for nutrients, water, and space, and to promote strong growth of desired plants.

**3. Avoid heavy pruning** of shrubs in extreme heat.

**4. Move potted plants** and containers to shady areas until end of heat wave.

**5. Choose tough plants** known to thrive in your climate and plant them in the proper location.

- Do some homework when planning a garden. Know your USDA cold and heat zones when selecting plants; locate plants in proper sun exposure; group plants with similar moisture requirements.
- Chose drought-tolerant plants like native plants from your area.

- Plant when soil and air temperatures are cooler—fall, late winter, and very early spring in our Piedmont area—so plants have the opportunity to establish strong root systems before being subjected to summer heat.

- All new plantings—native or not—need extra care (and water) to help survive their first Carolina summer.

**6. Mulch around plants** with a light covering of organic material to retain soil moisture, prevent weeds, and maintain cooler soil temperatures.

**7. Evaluate your garden** – take a stroll to see what is sunburned, wilted in the morning, overcrowded, and/or exposed to too much sun and wind.

- Sunburned plants may need to be moved to a shadier location. Other reasons for plant heat stress include overcrowding, which creates competition for water, and root-bound plants which have inadequate soil around their roots to hold water.
- Before relocating plants, wait for heat to abate; shrubs and trees should not be moved until fall if they can be kept alive in current location.

**8. Avoid chemical pesticide sprays** of any type, but especially avoid spraying during daytime heat even if using insecticidal soaps or horticultural oils.

**9. Remove destructive bugs by hand.**

**10. Avoid fertilizing** because heat-stressed plants do not need to increase their foliage canopy.

**SPECIAL TIPS FOR HEAT-STRESSED LAWNS**

Know your turf type. Whether you have a warm-season (like zoysia) or a cool-season (like fescue) grass affects how your lawn responds to extreme heat. Sustained temperatures in 94-104°F range and inadequate rainfall impact all turf types:

- Mow turf to taller height; never cut more than 1/3 of the blade. Taller grass height results in deeper roots which help turf tolerate heat and drought.
- Leave clippings on lawn to reduce evaporative water loss from soil and to provide moisture and nutrients as they decompose.
- Irrigate to a depth of 4-8" (about 1" of water) when grass shows signs of stress such as slight wilting and discoloration.
- Sharpen mower blades; clean cuts minimize water loss.