

The Invisible Drought: Managing Summer Heat in the Foothills (published 2026-07-18)
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While Northeast Tennessee residents often deal with heavy spring rains and high humidity, mid-summer brings a specific challenge that many gardeners overlook - an invisible drought. Even when our rain gauges show a decent weekly total, the high temperatures of July and August can bake our native red clay into a hard, impenetrable brick. This surface crust prevents water from reaching the roots of your high-value plants, leading to heat stress that can ruin a harvest even if you think you are watering enough.

Understanding the Clay Crust

The soil in the Appalachian foothills is notoriously heavy in clay. When the sun hits bare soil at 90 degrees or higher, the top layer of soil loses moisture through evaporation almost instantly. This creates a water-repellant layer. If you have ever noticed water pooling on top of your garden bed or running off into the grass after just a minute of hosing, you have seen this in action. The water is taking the path of least resistance rather than soaking down to where the roots actually live.

To break this cycle, you must change how you deliver water. A quick five-minute sprinkle with a garden hose is largely a waste of time and resources. Most of that water evaporates before it does any good. Instead, you need to focus on deep-root irrigation.

The Power of Mulch and Moisture

The first step in fighting the invisible drought is to cover your soil. Bare soil is a choice, and in a Tennessee summer, it is usually a bad one. Using a thick layer of wheat straw, shredded leaves, or pine bark acts as insulation. It keeps the soil temperature significantly lower and prevents the sun from baking that clay crust.

A simple way to test your moisture level is to stick your finger into the soil under the mulch. If the top two inches are dry, your plants are struggling. For high-value crops like tomatoes, peppers, or young fruit trees, consider using ollas or a simple drip irrigation system. An olla is an unglazed clay pot buried in the ground and filled with water. The porous sides allow water to seep out slowly directly into the root zone, preventing evaporation entirely. You can even make a DIY version by burying a five-gallon bucket with small holes drilled in the bottom.

Timing and Technique

Most people water in the evening because it fits their work schedule, but this can lead to its own set of problems. In our humid climate, leaving water on plant leaves overnight is an invitation for powdery mildew and blight. The best time to water is between 5:00 AM and 8:00 AM. This gives the soil time to absorb the moisture before the sun gets high, and any water that splashes on the leaves will dry quickly as the day warms up.

If you are using a hose, aim for the base of the plant. Deep soaking twice a week is far better than a light misting every day. You want to encourage the roots to grow deeply into the earth where the temperature is stable and moisture is more consistent. Shallow watering keeps the roots near the surface, where they remain vulnerable to the next heat wave.

Signs of Heat Stress

It is also important to know when a plant is actually thirsty versus when it is just protecting itself. Large-leafed plants like squash or hydrangeas will often wilt in the middle of a hot afternoon. This is a survival mechanism to reduce the surface area exposed to the sun. If the plant looks perky again by the next morning, it doesn't necessarily need more water. If it is still drooping at 7:00 AM, you have a problem that needs immediate attention.

By managing the soil temperature and focusing on deep irrigation, you can keep your garden productive through the hottest weeks of the year. It takes more patience than a quick spray with the hose, but the results will show up in your harvest totals.

Resources

“Managing the Garden in Extreme Heat,” <https://yardandgarden.extension.iastate.edu/how-to/managing-garden-extreme-heat>

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