

# Maintaining Kentucky Lawns during Summer Drought

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Most Kentucky lawns are established with either Ky bluegrass or tall fescue. Both are cool season grasses that prefer summers cooler and wetter than we normally experience. Adequate, but not excessive, soil moisture is needed by turfgrass in order to maintain a green summer color and to provide its own cooling through natural evaporation and transpiration.

## **Lawns that suffer most during summer drought are those:**

- growing on shallow or heavy clay soils where root growth is already compromised.

- growing on south or west facing slopes.

- mowed at below optimum mowing heights. Lawns mowed very short will normally have very short roots and be unable to extract much water from the soil during droughts.

- growing in shade where the grass must compete with tree roots.

- that receive some traffic by children, pets or equipment. If the surface cover of grass is thinned or eliminated, direct sunlight will penetrate to the surface and increase the grass growing-point temperature by as much as 30 F in a dry soil.

- lawns that become heavily infested with crabgrass or other summer loving weeds that out-compete the turf for limited moisture.

- lawns that receive weed control products applied during drought, thus adding another stress.

- drought stressed lawns mowed during the heat-of-day. These lawns are mechanically damaged by mower tires or a rotating blade (especially a dull rotary blade).



Figure 1. Kentucky bluegrass lawn damaged by mowing when the lawn was dry and temperature hot.

--lawns that are scalped. When you mow off more than 1/3 to 1/2 of the leaf material at one mowing you are removing most or all of the functioning, transpiring green leaves. This allows the surface temperature to increase dramatically.

--lawns that are fertilized with nitrogen in the spring or summer, thereby reducing root length, increasing succulence of the grass leaves and increasing summer disease pressure. Summer patch of Ky bluegrass and brown patch of tall fescue are two diseases that can be dramatically increased.

--lawns that are irrigated almost daily and especially those frequently being irrigated just prior to mid summer water restrictions being imposed. The grass is often too succulent to survive water restrictions because it has developed large thin cell walls that collapse quickly when water is reduced.

--lawns watered late in the afternoon, thus increasing disease by keeping the leaf surface wet all night and most of the following morning.

--lawns with steep slopes. When rainfall does occur, almost all of it will run off and the slope will stay extremely dry even after you get a sudden five inch rainfall.



Figure 2. Sloping lawns, especially those facing south or west, are most susceptible to drought damage.

--Kentucky bluegrass lawns that become damaged by white grubs. Grubs eat roots in late August through September and can greatly reduce the water that can be absorbed by the grass.

### **When heat and drought occurs, what can you expect?**

Tall fescue lawns initially suffer less than Ky bluegrass because tall fescue has much deeper roots. However, this advantage is lost when the soil is shallow or compacted and when the drought becomes very, very severe. Ky bluegrass will quickly go dormant (brown), a physiological state where the demand for water is minimized. Then when sufficient rain does occur or when night temperatures become a lot cooler, Ky bluegrass often recovers. Ky bluegrass has underground lateral stems (rhizomes) that give it a survival mechanism. Unfortunately tall fescue does not have the luxury of extensive rhizomes and when tall fescue goes brown in the summer, it is most likely as dead as it looks.

You can also expect warm season grassy weeds to become a major contaminant. These potential weeds include annual grasses such as crabgrass, goosegrass, and foxtail and include the more serious perennial grasses such as bermudagrass, nimblewill and dallasgrass. Once these perennial weedy grasses get a foothold, they are very difficult and almost impossible to control.

## **Best Management Practices during the Summer**

Regardless of how the lawn was managed prior to the summer heat and drought, considering the following best management practices that will give maximum survival and quality during the drought?

--Mow high (2.5 to 3 inches) and as infrequently as possible. Never remove more than 1/3 or 1/2 of the leaf surface at one mowing, but also do not mow if the lawn does not need it. If all you are mowing are weeds, it is best to not damage the lawn more by extra traffic with the mower. Maybe the lawn can be dressed up a tad by string trimming tall weeds, just above the turf canopy.

--Never mow during the heat-of-day, especially when temperatures reach near 90 F and soil moisture is limited.

--Always mow with a sharp mower blade.

--Don't allow traffic on a crusty, dry lawn

--Don't apply an herbicide to kill weeds. This is an extra stress the lawn does not need.

--Irrigate if possible, i.e. if there is not a municipal water restriction and if the water is affordable.

--Apply approximately 1 to 1.5 inches of water per week. This usually means applying about 1/2 to 2/3 inches of water every 3 to 4 days.

--If a rainfall of 1/4 inch or more occurs, then skip the next scheduled irrigation.

--Apply irrigation in early am. This is important because evaporative loss is lower, the irrigation water removes dew from the leaf surface and this reduces disease problems, and water pressure is usually higher in early am when fewer people are watering lawns, flowers, animals, washing vehicles, etc.

--Concentrate watering lawn areas most susceptible to drought injury, i.e. south and west facing slopes, poor and shallow soil areas of the lawn and extremely sloping areas where rainfall tends to not penetrate.



Figure 3. Uniform irrigation, applied judiciously, can save a lawn from costly fall renovation and make the lawn more attractive and user friendly.

A well irrigated lawn is not only very attractive, but it also is a much cooler lawn to inhabit. Irrigation can be expensive but the alternative may include a lot of ugliness and a major cost to re-establish the lawn the following fall. September and October are the best seeding months of the year, but they are also the driest months of the year. Irrigation is always a major help when re-seeding. So sometimes it comes down to pay for irrigation now (during drought), or pay for irrigation later (during re-establishment).