Field Tips

Water Conservation Practices

The laws governing water loses by turf cannot be changed, but their impact on the efficiency of water use can be moderated through management practices. What follows are a few suggestions for water conservation turf management.

1. Select turfgrass cultivars known to have lower than average ET rates. Cultivars of many turfgrasses have been compared for their water loss due to ET and significant differences normally are found. These differences tend to be consistent over several years within a given location. Unfortunately, such measurements have not been made at enough different sites to evaluate the climatic stability of ET rankings. Such information will be available in time and even now some can be obtained through your local university turfgrass program.

2. Do not stimulate rapid shoot growth during periods of high water demand. This will accelerate ET and increase water use. Avoid nitrogen applications when dry, hot conditions are anticipated. It is better to concentrate nitrogen usage during the spring and fall.

3. Raise mowing height during the hot summer months. This might seem counterproductive to water conservation since higher cut results in greater ET rates. However, a higher cut will stimulate root growth which will enable the grass to obtain water from greater soil depths. This has been shown to influence drought resistance in most turfgrasses. Also, higher cut will promote a thicker turf canopy which will retard air flow and reduce ET rates. Thus, a greater mowing height may actually have only a modest impact on actual ET rates. Taller grass in midsummer also is better able to compete with seedling weeds, especially warm-season species, and minimizing such weeds might also reduce water use.

4. Stimulate root growth by whatever management practice you have available. Increase mowing height, reduce nitrogen fertility, insure good soil aeration, reduce thatch, control root-feeding insects and root infecting diseases. A strong deep root system will maximize water availability and delay drought stress during dry periods.

5. Reduce root inhibiting conditions of the soil profile, especially acidity, toxic ion concentrations, anaerobic layers and excess compaction. Most such conditions are best corrected during installation but also can be addressed by deep coring, soil injection of soluble lime and nutrients, and by selecting acid-tolerant turfgrasses.

6. Develop irrigation practices based on the concept of deficit water management. By applying less water than would be lost through ET under well-watered conditions, turf can be maintained under managed drought stress, which not only conserves water but stimulates deep rooting.

In time, the concepts outlined here will be better developed and turfgrasses will be bred for drought resistance. Such advances will significantly reduce the water required to maintain high quality turf even in arid climates.