JB COMMENTS

The Diversity in Evapotranspiration Rates of Turfgrasses

There are major differences in the evapotranspiration rates among many turfgrass species, especially under peak environmental conditions, which maximize the evapotranspiration rate. Unfortunately, this water conserving characteristic is not being utilized sufficiently. **Evapotranspiration rate (ET)** is the amount of water evaporated from a turf area per unit of time. It may be expressed as inches per week (in./wk) or mm/day (mm/d). The relative maximum evapotranspiration rates of 21 turfgrasses when grown in their respective climatic regions of adaptation and preferred cultural regime are shown in the accompanying table.

Any cultural and/or environmental factors that alter the leaf area or shoot density of a given turfgrass species may result in a significant shift in its relative ranking compared to the other species. Cultural factors that contribute to an increased evapotranspiration rate include (a) higher cutting height, (b) higher nitrogen nutritional level, which stimulates the leaf extension rate and resultant leaf area, and (c) high to excessive irrigation rate and/or frequency, which increases the stomatal density on leaves. Typically, turfgrass species that have a higher shoot density, narrower leaf width, and more horizontal leaf orientation tend to have a lower evapotranspiration rate than the more erect, low-density, wide-leafed species. The peak ET rates can range from 3 to 12 mm per day among turfgrass species. It should be noted that certain cultivars ranking lower in ET rate can exhibit ET rates in the 1.5 to 2.0 mm per day range under conditions of minimal to low evaporative demand.

Relative Ranking*	ET Rate ($mm\ d^{-1}$)	Turfgrass
very-low	< 6	American buffalograss
low	6–7	**hybrid bermudagrass centipedegrass **dactylon bermudagrass **zoysiagrasses
moderate	7–8.5	hard fescue Chewings fescue red fescues bahiagrass seashore paspalum St. Augustinegrass
high	8.5–10	perennial ryegrass common carpetgrass kikuyugrass tropical carpetgrass
very high	>10	tall fescue creeping bentgrass annual bluegrass *Kentucky bluegrass rough bluegrass annual ryegrass

*Based on the most widely used cultivars of each species.

**Significant variability occurs among cultivars within the species.

...Gray Leaf Spot...

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blighting appears, a high rate of Daconil® should be tank-mixed with one of the aforementioned penetrants. Affected areas should then be re-treated in 5 to 7 days with another application of Daconil®. Thereafter, tank-mix combinations will likely be required on 10- to 21-day intervals, depending on the fungicide, rate applied, and environmental conditions. It is important to use high water volumes of greater than 50 gallons per acre (470 L/ha), and to delay mowing for 24 hours following the application. **Vigilant scouting for gray leaf spot requires almost daily attention from July through October.** The disease can be very active in September and October, and is especially destructive to new seedlings in overseeded areas previously damaged by gray leaf spot.

References

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