

Hello,

I ran across this brief article about frost on turfgrass:

Frosty Nights

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Frost is an interesting process that occurs on clear cold nights when turfgrass plants reradiate heat (exothermic reaction). As this heat is lost to the atmosphere the plant leaf cools, and if the plant temperature is cooler than the air temperature than moisture from the atmosphere will condense on the leaf. If the leaf temperature is below freezing then the water freezes and frost forms even if the air temperatures are slightly above freezing. At this time of the year it is not uncommon to have frost form even if the air temperature is in the mid to high 30's.

Frost does not form as readily on cloudy nights because the clouds reflect, or absorb and then reradiate the energy back towards the turf. Thus, the plants receive heat from this rerediation. Frost also does not form as readily under conditions where a breeze is present. Through convection the mixing air closest to the plant and the atmosphere buffers the leaf temperature drop (also promotes evaporation of the water droplets from the leaf). Areas with little slope have a greater potential for frost than sloping areas (air moves downward resulting in a mixing).

Frost will normally form early in the morning before sunrise. This makes sense because if the plants have been reradiating energy throughout the night, the leaf temperature should be the coolest prior to daybreak. Actually frost may continue to form briefly even at daybreak due to the low angles of light coming from the sun may not directly hit the leaf.

Most damage caused by frost is generally superficial. This is not to say that traffic should be allowed on frosted turf. If traffic occurs, whether it is foot or mechanical, damage caused by "crushing" the leaf blade will occur. The damaged turf will then turn a straw color.

Source: <http://www.greencastonline.com/TechNotes.aspx?tn=89579>

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Megan Kennelly
Assistant Professor
Extension and Research: horticultural crops

4603 Throckmorton PSC
Dept of Plant Pathology
Kansas State University
Manhattan, KS 66506

phone: 785-532-1387