

# Clubhouse Edition



## Frost delays: why are they necessary?

### Bottom line:

Frost poses the most serious threat to turf health and appearance during the winter months.

There is really only one way to avoid frost damage, and that is to avoid all traffic - from golfers, to golf carts to maintenance equipment - until the frost has melted.

**A miracle of Nature, or a threat?** Frost occurs when the soil surface is 32°F (0°C) or below, causing dew to freeze on turf. The ice crystals that form (see below) are lovely to look at, but are also the most serious hazard to the health and appearance of turf during the winter months.



All types and heights of turf can be damaged by frost -

warm and cool season grasses, as well as greens, fairways and roughs.

The overall look produced by frost is a silvery sheen, as illustrated on this frosty bentgrass fairway.



**Frost + traffic = cracking under pressure:** Frost by itself doesn't necessarily cause damage to turf. However, when weight is applied to frosted turf in the form of foot or vehicular traffic, there's trouble. This is because frost transforms turf from a soft, springy surface to a fragile, brittle surface that cracks when pressure is placed on it.

Golf cart traffic on frosty turf results in damage that appears 2-3 days later, such as the cart traffic damage seen below.



Walking on frosty greens also produces foot shaped patterns of brown, dead turf. In both cases, turf is slow to recover, leaving unsightly brown areas for weeks or even months.

**Avoiding turf damage:** Frost is usually an early morning problem that is relieved once the sun comes up and air temperatures rise. Once frost crystals melt (below), turf is safe for foot and vehicular traffic.

There is really only one way to avoid frost damage, and that is to avoid all traffic—golfers, carts and maintenance equipment—until it has melted.



Early morning irrigation can help speed the melting process, but unless air temperatures rise sufficiently and all of the leaf and stem tissues are unfrozen, the best policy is to delay golf and maintenance operations until all signs of frost are gone.