

# TURF TWISTERS

## CARTS ON FROZEN TURF

**Question:** Will you please be good enough to inform me if, in your opinion, frost or frozen ground can injure a course in any way if a cart is used during the frozen period only? (N.Y.)

**Answer:** 1. The cart will not injure the soil structure in any way when the ground is frozen so it is safe to use it at this time. It is only when the ground thaws that soil compaction results.

2. When the soil is frozen, the grass is also frozen, and using a cart at this time does injure the grasses. What happens is that frozen blades are cracked and damaged—the cells rupture, and injured blades are most susceptible to diseases of winter and spring. The injured permanent (bent) grasses then are subtly replaced by **Poa annua**, and this grass spells trouble in July and August.

In summary, the trained eye can discern the changeover. The average member can't. To the average member, **Poa annua** looks as good as bentgrass—sometimes better!

## INSECTS, ANTI-FREEZE

**Question:** Last week, I came across this piece in our local paper. "Some insects, like chinch bugs, produce an anti-freeze chemical that keeps their insides from turning into ice in winter. Others freeze without injury, and await the spring thaw." I was wondering if this statement was accurate and, if so, about the mechanics of such a phenomenon? (N.J.)

**Answer:** In answer to your question about an anti-freeze chemical produced by chinch bugs to prevent freezing, this phenomenon undoubtedly concerns glycogen (glycol), a carbohydrate related to starch and found in insects and warm-blooded animals.

Many, if not all insect species (including chinch bugs) do have the built-in ability to survive very low (minus 0-degrees centigrade) winter temperatures without apparent deleterious effects. Obviously, glycogen plays a major part in survival.

It would also appear that the water within the insect's body cells moves out of the cells into the inter-cellular areas where freezing will do no harm. If this translocation of moisture did not occur, the accumulation of water crystals inside of the cells would rupture their pervious walls.

## PENNCROSS ON FAIRWAYS

**Question:** I have heard some discussion on the use of Pennncross bentgrass alone or in a seed mixture for use as fairway turf. What are your thoughts on this? (Conn.)

**Answer:** At the present time we know of only one Pennsylvania club which has predominantly Pennncross fairways and results have been good. Just as on greens, Pennncross on fairways would require an intensive maintenance program but limited evidence seems to indicate that Pennncross may be used more in the future.