**Q**—*We pump our irrigation water out of a creek that is very high in sodium. How will this affect our turf?* *(Michigan)*

**A**—Depending on the concentration of sodium in the creek water and the rate at which water is used you might anticipate a gradual reduction in turf quality. If your soils are very well drained there is the very good possibility that the sodium will be flushed away with the drainage waters. One good way to keep sodium moving is to provide calcium ions through the application of limestone.

### Reduce, do not remove

**Q**—*What is the best way to remove thatch from putting greens with one-half inch accumulation? Also, on fairways with about 1½ inches accumulation?* *(Indiana)*

**A**—One-half-inch accumulation on greens I would call "cushion" which improves the playing quality. Don't try to remove it. Just punch it full of holes to let water, air and nutrients into the rootzone. On fairways you must aerate to get water through the thatch. Since you did not specify the kind of grass you have or anything about your management practices, I am in the dark. We know that applications of limestone help to reduce thatch. Vigorous aeration also will help. Avoid excessive irrigation and nitrogen feeding, both of which contribute to thatch. Biological decomposition should be your goal. Mechanical removal is risky.

**Q**—*In the past you have written about using potassium sulfate ($K_2SO_4$) on turf whenever potash is needed. Can you bring us up to date on potassium sulfate and give us reasons for using it?* *(Virginia)*

**A**—There is no need here to elaborate on the advantage of keeping potassium levels adequate in turf—we are all too aware of the troubles we have when potash is inadequate. The principal advantage of specifying potassium sulfate for turf is that each 100 pounds of this product yields 17.6 pounds of sulfur, a macro-nutrient which is deficient in many areas especially where nitrogen and phosphorous are used in quantity. Yes, potassium sulfate costs a bit more than muriate of potash, but the value of the sulfur more than compensates for the slightly higher cost. Sulfur is essential to plant growth. The need for sulfur is closely related to the amounts of nitrogen being applied. It is essential for many biological processes in green plants. Turfgrasses have improved color and density when sulfur is balanced with nitrogen and other nutrients. Sulfur aids in enhancing winter hardiness, drought tolerance, decomposition of thatch and control of insects and diseases.

You may be sure that, when I have a chance to make a recommendation, I specify sulfate of potash to be very sure that my client's turf will not suffer from hidden sulfur hunger.

**Q**—*We have been advised to plant our sandy loam fairways to a mixture which contains Prato, Delta, Pennlawn fescue and Pelo perennial ryegrass. Forty-five per cent of the mixture is Pennlawn. Doesn't that seem to be excessive?* *(Vermont)*

**A**—Forty-five per cent Pennlawn in a bluegrass mixture does seem to be rather high. In the mixture suggested 25 per cent Pennlawn ought to be ample. I question the use of Delta bluegrass when there are better turf bluegrasses on the market. Was the salesman's recommendation based on fact or fancy? □