

## Add sulfur if you want a truly 'complete' fertilizer

To the editor:

As a turfgrass specialist for 15 years, I have been interested in the nutritional needs of turfgrass in order to maintain optimal health and minimize the negative impacts of a wide array of stressful situations. The terms macro-nutrients, micro-nutrients, and trace elements are all relative terms that have the capacity to inaccurately place values on certain nutrients as they may relate to proper plant nutrition. The most important nutrient(s) to any plant must be that one or more which is found to be limiting.

The current definition of macro-nutrients (aside from C-H-O) consists of the major nutrients N-P-K and represents those elements historically accepted as required for a "complete" fertilizer.

I suggest that in the specific case of turfgrass nutrition four, not three, primary nutrients are critical to the healthy completion of the normal life cycle. Sulfur should be the fourth major nutrient required of turf fertilizer before it should be termed "complete."

Sulfur is usually found in tissue analyses of healthy turfgrass in amounts greater than that of phosphorus. Sulfur in the plant-available sulfate form is also generally much more lacking in most soils than are the other two "secondary nutrients" — calcium and magnesium.

The nutritional value of sulfur for turfgrasses has been overshadowed for far too long by sulfur's use as a soil amendment to modify soil pH. Yet sulfur is responsible for a great number of plant processes of particular importance to turfgrasses versus other crops.

Sulfur is a major factor in turf's ability to provide for improved drought tolerance, winter hardiness, color and density. This is in addition to its important role in many metabolic functions that are commonly accepted as beneficial for other plant groups.

Turfgrass management, and so turfgrass fertilizers, have evolved as an off-shoot from strictly agricultural models, and maybe it's time we turfgrass managers recognize and treat turfgrass as the unique "crop" it is.

I believe fertilizers manufactured for and intended to be applied to turfgrass should be described in terms of their nitrogen, phosphorus, potassium and sulfur content. The N-P-K-S designation for a "complete" turf-type fertilizer will be of far more value to serious turfgrass nutritionists. Consumers also should have every right to expect the "complete" fertilizer they are buying for their lawn is just that — complete with the four basic nutrients most important and most often found lacking for optimum turfgrass health and nutrition.

Sincerely,  
Dan Nason  
Great Salt Lake Minerals Corp.  
Overland Park, Kan.

## No consistent effort made to pull together research

To the editor:

As a member of a family that has been in the golf business since the 1920s and as an avid golfer with a degree in environmental studies, I am concerned about environmental issues and the golf industry.

After conversations with a number of industry members, it has become apparent that no consistent effort is being made to coordinate or promote environmental efforts industry-side. There is already a tremendous wealth of research available offering studies on pesticides, fertilizers, water use, etc.

Unfortunately, the golfing public (and, as importantly, the non-golfing public) are at the mercy of groups who distort/dilute scientific findings to serve their purposes (both pro and con golf).

We need a coordinated effort to share information among industry professionals, continued research in the field and in the lab, education of legislators and regulators as to the benefits of environmentally responsible golf courses, and a good public education/reasons campaign that shares vital information about golf's important role in communities.

Other industries have taken a pro-active stance in addressing environmental issues. The paper, food, plastic, drug, oil and gas, clothing, and chemical industries have all recognized that environmentally savvy consumers are here to stay.

Golf is no different. Even more than some

of the above-mentioned industries, golf courses are a "lightning rod" for people with environmental concerns. (Incidentally, in a recent national poll, 78 percent of Americans considered themselves "environmentalists.")

We need to provide consistent information, education and marketing efforts to golf industry professionals and the American public to promote golf courses as the good neighbors they can be.

Make no mistake about it, golf as an industry is as vulnerable to public opinion as any other in this country. Policymakers, legislators and regulators react to a vocal public.

If that public remains uninformed and vulnerable to misinterpretation of facts surrounding the golf industry, the results may include loss of development permits, an increase in fines, exorbitant water-use fees, decline in the golfing public, etc.

The time is right for pro-active and creative programming that serves the needs of the golf industry and provides the American public with a fair representation of golf courses as exemplary community neighbors.

Sincerely,  
David L. Bennell  
Portland, Maine

## Comment

Continued from page 14

rounds, and shorter waits, should be available to people in many areas.

The entire industry should pay the highest compliments to the men and women who have strived together, worked in unity despite the naysayers, and accomplished more than perhaps even the optimists had dreamed.

And while small businesses to major industries are faltering nationwide, we should all thank God this industry, and its jobs, have been spared.

## New courses and additions

Type	Open		Under construction	
	1991	1990	1991	1990
Daily fee	226	166	348	301
Municipal	52	37	82	71
Private	73	86	150	184
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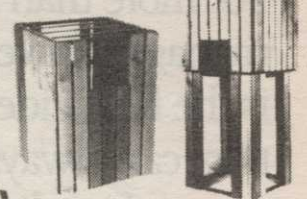
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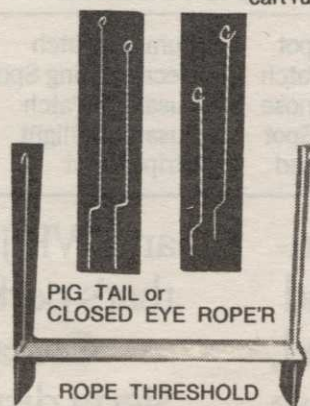
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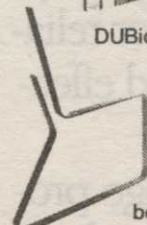


PIG TAIL or CLOSED EYE ROPER

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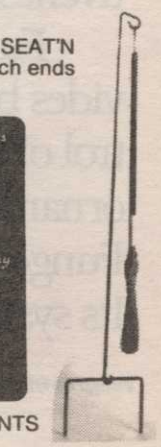
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