STOP #9.

TURFGRASS RESPONSE TO SULFUR

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The turfgrass plant requires a balance of all essential elements although emphasis is usually placed on one as with nitrogen, potassium or iron. We have observed several cases of phosphorus deficiencies on both general grounds and golf course turfs. In most cases soil tests are adequate as a means of determining appropriate phosphorus needs. Clearly, potassium has become a very important nutrient in turf management. Many golf course superintendents are using more potash than nitrogen on their fairways, for example. Potash is important in improving tolerance to stresses, disease, and wear or traffic.

More recently sulfur has become the "newly found" nutrient in turf management. Recommendations for sulfur applications are routinely made in parts of the west and south. Sulfur has also been used to reduce soil pH or reduce susceptibility to certain diseases. Although studies have shown that there is not a need for fertilizer sulfur on field crops in Michigan because of sulfur in the rainfall, several turf managers are using some sulfur.

In a study initiated in July, 1986 sulfur was applied at rates of 5 or 10 pounds actual sulfur per 1000 square feet on annual bluegrass. Carriers applied were Cleary's flowable sulfur, LESCO Microprill, LESCO water degradable, Thiolux and Frit-sul-ate. Within about 7 days there was a clearly observable turf response on plots treated with the flowable sulfur. The turf grew faster, had a higher density and a lighter green color than other plots. The response was greater on the plots treated with the higher rate. After about 3 weeks the response dissipated and by late August the plots treated with flowable sulfur had a general loss of vigor and density and developed a yellowish appearance especially at the 10 pound rate. Soil pH measurements will be taken to determine if the sulfur caused the injury because of acidification.

Plots treated with Thiolux resulted in a darker green turf color while other materials gave no observable turf response by mid-August.

Similar responses have occurred on a Kentucky bluegrass turf although no injury was observed by mid-August. A small study on Penncross creeping bentgrass resulted in the flowable sulfur causing a greener response.

The nature of the enhanced turf response is not yet clear. If you are considering use of sulfur on turf we suggest using light rates (½ - 1 pound per 1000 sq. ft.) applied several times a year. If you continue on a sulfur program use lighter rates as too much sulfur can result in injury to the plant. Although no absolute figures are available it is best to use no more than 5 pounds sulfur per 1000 sq. ft. annually. Check pH in the surface inch or two of soil or in the thatch to be sure these layers do not become too acid.