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Sulfur Usage by Turfgrasses

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Of the six macronutrients, sulfur is undoubtedly the most neglected by turf managers. This is not because sulfur is the macronutrient required in the lowest amount by plants, which it is, but because no effort is generally required to insure that turf receives all the sulfur it needs.

Living in an industrial nation virtually insures that sulfur will be available to plants through atmospheric sulfur dioxide (SO_2), a major air pollutant. Also, sulfur is normally present in mineral and organic fertilizers. Common (single) superphosphate is manufactured by reacting rock phosphate with sulfuric acid; the resulting product contains 14 percent sulfur. Sulfur-coated urea, which is commonly used by turf managers as a slow-release nitrogen source, contains about 10 percent sulfur. Many commercial grade fertilizer materials contain small amounts of sulfur as a contaminant and all naturally derived organic fertilizers or soil conditioners will deliver some sulfur.

This ambivalence toward sulfur may be changing. More refined inorganic fertilizer ingredients contain less sulfur as well as other contaminants. For example, triple superphosphate contains only 1.5 percent sulfur, but 2.3

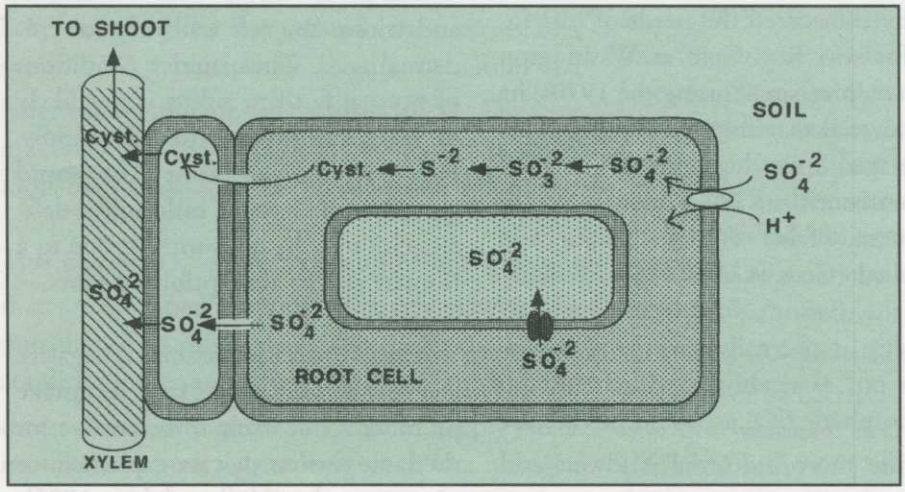

Figure 1. Path of sulfate transport and metabolism in roots of grass plants.

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