

# TURFGRASS TRENDS

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## MICRONUTRIENT NUTRITION

### Iron Usage By Turfgrasses

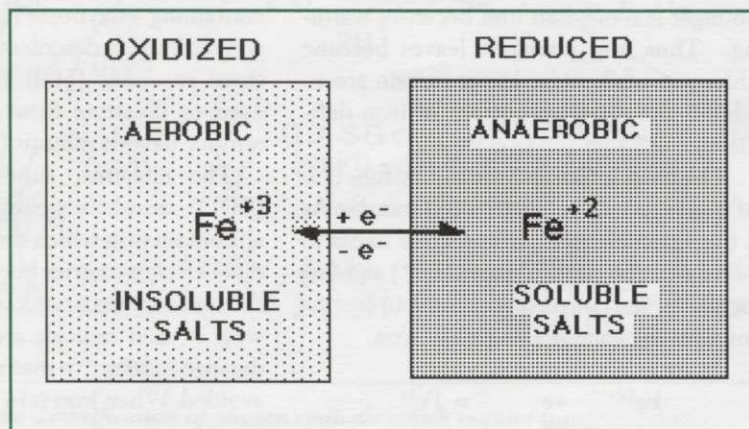
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The functions of the six mineral macronutrients (often called major nutrients) in turf have been reviewed in these pages during the past two years. It is now time to consider the value of the eight micronutrients (minor). As their name suggests, micronutrients are required by plants in much lower concentrations than are the macronutrients (Table 1, page 5). While macronutrients are required in turfgrass tissues at concentrations measured in parts per thousand, micronutrients are present at concentrations of parts per million. This suggests that micronutrients are most likely to function as catalysts, where only small amounts are required and not as structural or ionic components, which would be needed in relatively large amounts.

Only within the past decade or two has there been much concern over micronutrient nutrition of turfgrasses. In the future, several of these nutrients could gain in importance as turf culture becomes more refined.

The use of fertilizer salts of ever greater purity does not provide the micronutrient elements as contaminants that was common in years past. Also, growing turf on artificial media often does not provide the source of micronutrients that normally would be supplied by the soil. Sand-based greens and tees are sites where micronutrient deficiency problems can be expected to occur. As turf is grown in ever more exotic locations, such as deserts, sand dunes, saline soils or other sites which have never grown turfgrasses, problems of micronutrient imbalances, deficiencies or toxicities are more likely to be encountered.

Figure 1. Two oxidation/reduction states of iron and the properties of their salts in aerobic or anaerobic soils.



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