Energy Management Fuels Efficiency

In recent years, fuel prices have risen significantly, causing many people to reevaluate the energy used for turf management. A recent study conducted in Florida found that the energy used for turf management was 40% of the total energy used in the state. This is because turfgrass systems require a significant amount of energy for mowing, fertilization, irrigation, and pest control.

An Energy Sink

A chapter in the 1992 Turfgrass Monograph from the American Society of Agronomy reviewed the issue of energy use and turfgrass maintenance. The authors suggest that the excesses of having to fertilize and spray turfgrass for lush green carpets and the futility of having to mow weekly to maintain such conditions are only one side of the fuel issue.

Nitrogen Fertilization: How Much Is Enough?

You may think there is a simple answer to how much nitrogen is needed to fertilize turf. At this time soil or tissue testing are not reliable means of determining the amount of nitrogen to apply. Often the color, density and the amount of clipping growth are used to judge the need for nitrogen. Many people also use published standard application rates as a guide, but textbooks give a large range of possible annual nitrogen amounts for each cool-season grass species or level of maintenance.

Why So Different?

The range in nitrogen rates reflects that fact that site conditions and expectations vary from site to site. Factors that are important in determining the amount of nitrogen required include: soil properties (such as drainage), level of traffic, extent of irrigation, amount of sunlight, and site conditions (determined by how much organic matter is present), how the clippings are managed, and the desired level of quality (equivalent to the amount of maintenance).

For example, in the only turfgrass textbook on soil fertility, Turfgrass Soil Fertility and Chemical Problems: Assessment and Management, by Crow, Waddington and Rieke, published in 2001, the authors recommended nitrogen fertilizer amounts ranging from a low of 0.9–1.5 lbs. N/1,000 sq.ft. for a low level of maintenance, to a high of 3–6 lbs. N/1,000 sq.ft. for a high maintenance turf during a six month growing season for areas like Upstate New York. The levels were slightly higher for the longer growing season in Southeastern New York.

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continued on page 11

continued on page 4