NYSTA Funded Research
Improving Soil Test Recommendations for Turfgrass

Purpose of Project:

Soil testing is thought to be a useful way to determine the chemical nature of soil. Soil testing may also be a best management practice used to reduce the risk of phosphorus runoff. Fertilizer recommendations based on soil testing are developed from years of turf performance-soil test calibration research. There is lack of current soil test calibration studies with newer varieties and contemporary fertilization practices. The purpose of the project is to improve the Cornell University fertilizer recommendations by conducting soil test-turf response studies with newer varieties under various management practices.

2006 Update

This project is being conducted at three locations. Across all three sites phosphorus only and potassium only plots were split and nitrogen was applied to half of the plot. All other plots received the same treatments as in previous years. Quality ratings were taken monthly during the growing for each site. Quality is based on per cent of weeds, bare, and turfgrass, along with overall appearance. At all sites grass clippings and soil samples were collected in July and October 2006. Samples were at the Analytical lab for analysis of N, P and K (and 15 other element for the foliar analysis).

Summary of Results to Date

Results from 2002-2003 were published in the International Turf Research Conference Journal in 2005. What follows is a summary of the paper:

Results for 2002 and 2003, found that application of P and K at all sites did not affect turfgrass quality while the application of N improved turfgrass quality. Soil P levels (4.2 lbs/acre) were identified below which a tissue P content or quality response is likely. These levels were in line with current soil test recommendations (though twice as high). Similar levels for soil K were not identified indicating that soil K was adequate (although deemed low by current soil test interpretation). The application of N increased tissue K content, but application of K alone did not. Tissue levels of N, P, and K content were not well correlated with quality. The results of this study suggest current soil test K and P interpretations are too high and should be re-evaluated, and P and K application recommendations may need to be based on N application amount.

The three years of additional data involving 2006-2008 will give 7 years of solid data that allows us to make substantial improvements to the fertilizer recommendation for turf in New York.

A. Martin Petrovic, Ph.D.

New York State Turfgrass Association

Calendar of Events

2008

July 14	**METGCSA Poa Annual** Split Rock Golf Club, Bronx, NY
August 19	**CNYGCSA Poa Annual** Tuscarora Golf Course, Marcellus, NY
August 20	**Sullivan County Challenge** Grossinger Golf and Country Club, Liberty, NY
September 15	**FLAGCS Poa Annual** Country Club of Rochester, Rochester, NY

2009

January 7-9	**Empire State Green Industry Show**

CUTT

Scanning the Journals

The results of this study suggest current soil test K and P interpretations are too high and should be re-evaluated, and P and K application recommendations may need to be based on N application amount.