

CUTT

2005 Issue 2 • Volume 16 • Number 2

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.

For example, in the only turfgrass textbook on soil fertility, *Turfgrass Soil Fertility and Chemical Problems: Assessment and Management*, by Carrow, 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 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.

Cornell University's recommendations for nitrogen fertilizer amounts for New York lawns in are in *Lawn Care and Water Quality Almanac* by Gussack and Rossi, published in 2000, where the amounts depend on the species of grass: Kentucky bluegrass at 3–4 lbs. N/1,000 sq.ft./yr., perennial ryegrass at 2–6 lbs. N/1,000 sq.ft./yr., tall fescue at 2–4 lbs. N/1,000 sq.ft./yr., and fine fescues at 1–2 lbs. N/1,000 sq.ft./yr.

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, age of site (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). Some examples: sandy, well-drained sights may require more nitrogen; more traffic requires more nitrogen; irrigated lawns need more nitrogen; shady lawns need less nitrogen; older lawns need less nitrogen; removing clippings requires more nitrogen; and the higher the expectation of lawn quality the more nitrogen is often needed.

continued on page 4

This Times

1. ***Nitrogen Fertilization: How Much Is Enough?***
2. ***Clippings***
 - Continuing education offerings
3. ***Scanning the Journals***
 - Seed lot influences on turf establishment
 - Landscape water quality effects still uncertain
6. ***The "Best" Soil Test***
7. ***A Preliminary Assessment of Putting Green Mowers***
12. ***Energy Management Fuels Efficiency***

CUTT, "CORNELL UNIVERSITY TURFGRASS TIMES" is published four times per year by the Turfgrass Science Program at Cornell University, Ithaca, New York 14853. Address correspondence to: CORNELL UNIVERSITY TURFGRASS TIMES, 134A Plant Science Building, Cornell University, Ithaca, NY 14853; phone: (607) 255-1629; email: fsr3@cornell.edu.

Editor: Frank S. Rossi, Ph.D.

Design & Production: Ghostwriters, inc., Ithaca, NY

Cornell University is an equal opportunity, affirmative action educator and employer.

CUTT is copyright © 2005 by Cornell University. All rights reserved. Permission to reproduce any material contained herein must be obtained in writing.

The use of product names or trademarks in this newsletter or by Cornell University does not imply any endorsement of such products.