

Photo by J. Barlow

Impact of wastewater irrigation on turf quality and soil health

Wastewater is a potential water source for turfgrass in the Northeast, where freshwater supplies are limited. The objective of this field study was to examine the impact on two cool-season turfgrasses and three soils of irrigating exclusively with two concentrations of simulated wastewater with electrical conductivities of 0.82 and 1.64 deciSiemens/meter compared to local low-salt irrigation water. Creeping bentgrass and Kentucky bluegrass were grown on sand, sandy-loam and silt-loam soils; rainfall was excluded using a rainout shelter during three summers. Both turfgrasses had unacceptable quality ratings under the high-salt irrigation treatment and had reduced but still acceptable quality under the low-salt treatment. Electrical conductivity of the soil reached its highest levels during the year with five months of irrigation, which correlated with the poorest turf quality levels. Creeping bentgrass quality was reduced to an unacceptable level when the average EC of the soil reached 6 deciSiemens/meter; Kentucky bluegrass quality was unacceptable at 4 deciSiemens/meter. — Mark Slavens and A. Martin Petrovic, Ph.D. (amp4@cornell.edu), Cornell University

Do placement and source of potassium affect movement and uptake?

Leaching loss of nitrate has been well studied in high-sand greens, but leaching of potassium has not. The objectives of this research were: to examine the effect of five potassium sources (potassium sulfate, potassium chloride, resin-coated potassium sulfate, potassium thiosulfate and potassium nitrate) on creeping bentgrass performance; to determine potassium levels in soil and plant tissue; and to trace downward movement of potassium through the green. The study was conducted on a 5-year-old G-2 creeping bent-

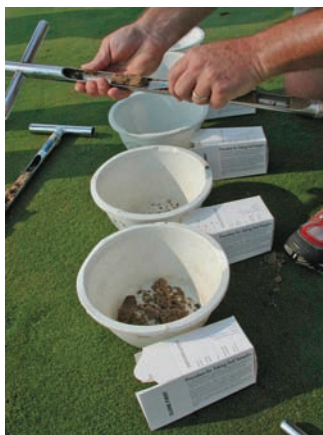


Photo by B. Guertal

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grass green. Over two years there was little difference in creeping bentgrass performance due to potassium source: clipping yield, tissue potassium and uptake of potassium by creeping bentgrass were rarely affected by source. Although potassium from the resin-coated potassium source was retained longer in upper soil layers (0–2-inch [0–5-centimeter] depth) than with some soluble sources, this did not increase quality or potassium uptake. Creeping bentgrass color and quality were unaffected by potassium source. — Bradford Young and Beth Guertal, Ph.D. (eguertal@acrsag.auburn.edu), Auburn University



Photo by K. Steinke

3-D canopy management for fairways and winter overseeding

The difficulty in managing organic matter accumulation and the subsequent issues of scalping and obtaining a quality cut continue to hinder the management of warm-season turfgrass fairways. The objectives of the study were to determine the effects of frequent grooming on plant morphology and the ability to aid in the autumn and spring transitions of overseeded warm-season turfgrasses. Cavalier zoysiagrass (*Zoysia matrella*), Sea Isle I seashore paspalum and Tifway 419 bermudagrass were maintained at fairway height, and treatments were three grooming intervals (reel-mowed without grooming, groomed once weekly and groomed every mowing) and four overseeding transition rates (rapid, ideal, slow and none). Overseeding zoysiagrass reduced summer turf quality, increased summer light entering the canopy and decreased summer shoot density. Ideal and rapid transition mixes reduced quality in late spring; the slow transition mix reduced quality throughout the summer. Data will provide insight into the ecology behind overseeding management and reduced-input turfgrass systems. — Charles Fontanier and Kurt Steinke, Ph.D. (ksteinke@ag.tamu.edu), Texas A&M University



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