

TURFGRASS TRENDS

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AGRONOMY

Timing soil surfactant applications

Their effect on soil water repellency

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The past seven years saw dramatic improvements in the diversity and quality of soil surfactant products offered to turfgrass managers. Many of today's surfactants are more effective than their earlier cousins for both treatment and management of localized dry spot symptoms, as well as enhancing penetration of water into the soil profile. With more and more golf course superintendents and athletic field managers using surfactants (wetting agents), demands have been made on manufacturers to provide flexible application regimes to fit into busy schedules.

Trials were conducted on a Penncross creeping bentgrass nursery green at Metedeconk National Golf Club in Jackson, NJ. The soil was a USGA-type sand with a history of soil water repellency related problems.

Due to the natural biodegradation of these surfactant materials in the soil profile over time (Swisher, 1986), surfactant applications have traditionally been made on a somewhat regular basis (ex. monthly) in order to maintain acceptable levels of product performance. Several manufacturers, however, have introduced surfactants that can be applied less frequently, with claims of extended periods of optimal performance between applications. For example, for golf course superintendents in the Northeast or the Midwest, extended performance from such products could translate into a single spring surfactant application resulting in management of soil water repellency that lasts the entire growing season.

Developed for application convenience and the option they give turf managers to treat on a less frequent basis, the marketplace has seen a proliferation of surfactant products available in recent years. However, little research has been conducted on these products to evaluate their effect on soil water repellency (the major cause of localized dry spot symptoms) from the time they are applied to the time when they ultimately biodegrade in the soil. While surfactants applied on a more frequent basis have been proven to maintain consistent performance over time in terms of soil water repellency reduction (Kostka et. al., 1997), questions have arisen as to how long these long-term products ultimately last once applied.

In an effort to answer some of these questions, research was performed that evaluated several different timing regimes for surfactant application, with investigation of application

IN THIS ISSUE

■ Timing soil surfactant applications.....1

Causes and significance

Soil water repellency

Short-term vs. long-term

Timing surfactant application

■ New bluegrass species for turf..... 8

Annual bluegrass

Canada bluegrass

Bulbous bluegrass

Texas bluegrass

Wood bluegrass

■ Smooth cordgrass synthetic seeds.....12

Tissue culture

Embryogenesis

Encapsulation

Germination

Storage