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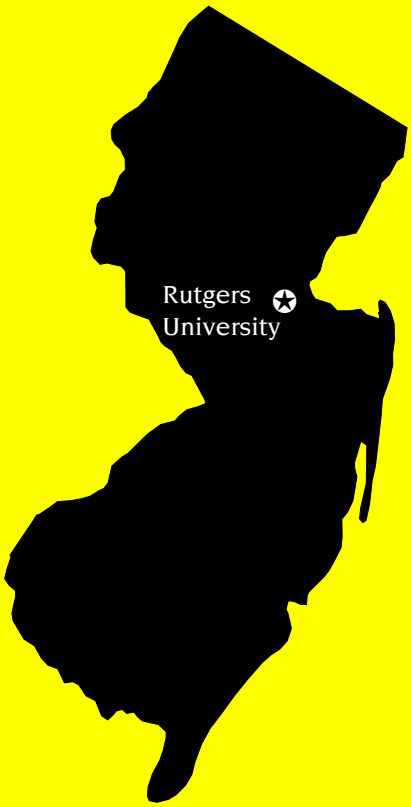

THE NEW JERSEY TURFGRASS ASSOCIATION

In Cooperation With

RUTGERS COOPERATIVE EXTENSION
NEW JERSEY AGRICULTURAL EXPERIMENT STATION
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The Rutgers Turfgrass Proceedings is published yearly by the Rutgers Center for Turfgrass Science, Rutgers Cooperative Extension, and the New Jersey Agricultural Experiment Station, Cook College, Rutgers University in cooperation with the New Jersey Turfgrass Association. The purpose of this document is to provide a forum for the dissemination of information and the exchange of ideas and knowledge. The proceedings provide turfgrass managers, research scientists, extension specialists, and industry personnel with opportunities to communicate with co-workers. Through this forum, these professionals also reach a more general audience, which includes the public. Articles appearing in these proceedings are divided into two sections.

The first section includes lecture notes of papers presented at the 1999 New Jersey Turfgrass Expo. Publication of the New Jersey Turfgrass Expo Notes provides a readily available source of information covering a wide range of topics. The Expo Notes include technical and popular presentations of importance to the turfgrass industry.

The second section includes research papers containing original research findings and reviews covering selected subjects in turfgrass science. The primary objective of this section is to facilitate the timely dissemination of original turfgrass research for use by the turfgrass industry.

Special thanks are given to those who have submitted papers for this proceedings, to the New Jersey Turfgrass Association for financial assistance, and to those individuals who have provided support to the Rutgers Turf Research Program at Cook College - Rutgers, The State University of New Jersey.

Dr. Ann B. Gould, Editor
Dr. Bruce B. Clarke, Coordinator

EVALUATION OF DISEASE RESISTANCE OF NEW BENTGRASSES UNDER VARIOUS MANAGEMENT PRACTICES

Jennifer N. DiMarco, James A. Murphy, and Bruce B. Clarke[1]

Over the past decade, several improved bentgrass cultivars have been developed for use on golf course greens and fairways. Many of these cultivars have been reported to have excellent disease resistance. Although it has been suggested that these cultivars may help reduce the use of fungicides, to date, little research has been conducted to support these claims. To address this issue, a study was designed to evaluate the disease response of several new bentgrass cultivars maintained under different nitrogen fertility, mowing height, and fungicide regimes.

Eight bentgrass cultivars (Crenshaw, Southshore, Penncross, L-93, SR 1020, SR 7200, A-4, and G-2) representing a wide range in disease susceptibility were selected for evaluation at the Rutgers Turf Research Farm in North Brunswick, New Jersey. All cultivars included in the study were creeping (*Agrostis stolonifera*) bentgrasses, except SR 7200, which is a velvet (*A. canina*) bentgrass reported to have good tolerance to dollar spot (caused by *Sclerotinia homoeocarpa*) and brown patch (*Rhizoctonia solani*). The cultivars L-93, G-2, and A-4 were selected for their improved resistance to both dollar spot and brown patch, whereas Crenshaw and SR 1020 were chosen for their susceptibility to dollar spot and copper spot. Penncross is the current industry standard.

Cultivars were established on 29 September 1998 at a seeding rate of 1.5 lb/1000 ft^2 on a Nixon loam with a pH of 6.1. Each cultivar was maintained at two cutting heights, 0.141 inch (greens height; mowed daily) and 0.375 inch (fairway height; mowed three times per week), and two nitrogen (N) levels, 2 lb N/1000 ft^2 (a low N fertility treatment) and approximately 5 lb N/1000 ft^2 (a high N fertility treatment). Fertilizer was applied once every two weeks from 14 April through 10 Nov. Each cultivar x fertilizer x cutting height treatment was subdivided into six fungicide application schedules (untreated, 7, 14, 28, or 56 day intervals, or an economic threshold of 0.3% disease) using the contact fungicide chlorothalonil (Daconil Ultrex 82.5WDG) at a rate of 1.9 oz/1000 ft^2. Chlorothalonil is a commonly used contact fungicide that was selected for its short residual activity, thus providing the opportunity to identify host/management treatments that enhance disease suppression with reduced fungicide usage. The fungicide was applied in water equivalent to 2 gal/1000 ft^2 with a CO_2 powered sprayer. The fungicide rate for all regimes was increased from 1.9 oz to 2.85 oz/1000 ft^2 during the month of August due to increased disease pressure.

The site was inoculated with isolates of *S. homoeocarpa* and *R. solani* on 16 June and 8 September, respectively. Data was collected for turf quality, color, density, and dollar spot severity. Other foliar diseases (e.g., brown patch and copper spot) were also evaluated when they developed.

Dollar spot was first seen on 25 June. The disease quickly became uniform throughout the study and peaked in late July. Dollar spot was least severe on turf receiving the high rate of N

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(5 lb/1000 ft^2). Cultivars G2, SR 7200, and L-93 were less susceptible to dollar spot under most N and cutting height treatments. Brown patch was most severe on turf maintained at greens height and high N. By continuing this study in 2000, we hope to identify cultivars that require less fungicide inputs while maintaining acceptable turf quality. Results from this research will be extended to turf managers to help them make informed choices when selecting new bentgrass cultivars and may provide information regarding the most effective management strategies for these cultivars once they are established.