

Kentucky Bluegrass Golf Course Fairway Cultivar Evaluation



Research Update

The objective of this study is to evaluate select bluegrass cultivars managed under medium to low maintenance golf course fairway conditions.

Prolonged periods of high temperature and high humidity resulted in a significant decline in turf quality for most cultivars.

6

CORNELL UNIVERSITY TURFGRASS TIMES

Kentucky bluegrass (*Poa pratensis*) is a major turfgrass species in New York State. It was introduced in the United States by the early colonists possibly in the hay brought for livestock. Today, it is widely used for home lawns, golf courses, sod production and sportsturf. National evaluations have been conducted for several years throughout the country to evaluate the performance of Kentucky bluegrass under various management regimes.

In 1992, several genotypes of Kentucky bluegrass were selected that exhibit characteristics such as compactness, aggressiveness, disease resistance and color retention. All selected cultivars performed in the top 5% at sites where mowing heights were 1 inch or below. The objective of this study is to evaluate select bluegrass cultivars managed under medium to low maintenance golf course fairway conditions.

Experimental Methods

Plots were established from seed at a rate of 1.75 lbs. pure live seed (PLS)/ M in September, 1992 on a Batavia silt loam with pH 7.2. Plots are mowed with a Jacobson Estate Mower set at 0.75", 2 times per week. Fertilizer applications are made to supply 2.5 to 4 lb. N / M/ year. The area is irrigated to prevent dormancy and in 1995 experienced substantial heat stress that required irrigation. A herbicide application was made in 1995 to control broadleaf weed invasion (Confront @ 0.75 ai/A).

Visual color and quality ratings are recorded monthly during the growing season on a scale of 1 to 9; for Color 1=brown turf, 9=dark blue-green; for Quality, 1=poor quality, 6=minimum acceptable quality, 9=ideal turf; and for pest incidence, 0=no damage, 9=severe damage.

Results

Prolonged periods of high temperature and high humidity resulted in a significant decline in turf quality for most cultivars. This is not surprising, as the selections are predominantly elite bluegrass types that require high levels of maintenance to provide acceptable quality. As a measure of the stress, two distinct pest infestations were evident in August. Turf injury associated with black cutworm (*Agrotis ipsilon*) and necrotic ringspot (*Leptosphaeria korrae*) was cultivar specific. Cynthia, Ram I, and Crest all had pest incidence and damage that could be considered objectionable. As a result, quality of these cultivars was reduced below an acceptable level.

Alpine, a cultivar from the Pickseed Co., forms a high quality, dense, fine textured, compact turf. It is possible that ball lie on this cultivar

might be similar to a bentgrass fairway maintained at 0.5 inch. Alpine has demonstrated poor spring color that is typical of the dark green, compact bluegrass types such as Midnight and America. Quality of Alpine in 1995 was significantly below the 3 year average, most likely a result of a stressful summer. Also, Midnight Kentucky bluegrass which has been a top performer in many national trials, suffered several months of below acceptable quality ratings and high incidence of necrotic ringspot. The performance of these cultivars is consistent with research that investigated recovery from summer dormancy.

Summary and Conclusions

Overall cultivar performance during the 3 year period is very good with all mean quality ratings at an acceptable level. The 1995 growing season provided information on heat and moisture stress tolerance, as compared to previous years that were predominately cool and wet.

This study indicated that Kentucky bluegrass cultivars, commercially available in New York, can tolerate close mowing and medium to low maintenance. Cultivars of note include Alpine, Cynthia, Asset, Touchdown, Indigo, Welcome and Eclipse.

When deciding on Kentucky bluegrass for close mowing conditions, consider blending at least 3 to 5 cultivars because the seed of a Kentucky bluegrass cultivar produce genetically identical plants. Therefore, blending cultivars provides the needed diversity for pest and stress tolerance.

Golf course fairway turf blends should have higher proportions of compact types (Alpine, Indigo, Midnight, America and Glade) and Aggressive types (Touchdown, Limousine, and Princeton-104) to provide a dense turf that will withstand regular traffic.

FRANK ROSSI, EXTENSION TURFGRASS SPECIALIST
CORNELL UNIVERSITY TURFGRASS TEAM

Zero In On Turfgrass!



Subscribe to *CUTT*! It's only \$8/year.

Table 1. Data from the Kentucky Bluegrass Fairway Cultivar Evaluation.

Cultivar	Visual Quality									Pest Damage	
	Spring Color	May	June	July	Aug.	Sept.	Fall Color	1995 Mean	3 Year Mean	Cutworm*	NRS**
Alpine	2.9	4.2	8.8	8.4	7.2	6.8	6.7	7.1	7.6	0.3	1.3
Cynthia	7.1	7.4	6.5	6.8	6.0	6.7	6.6	6.7	7.3	2.8	4.8
Asset	7.3	7.7	7.3	7.6	6.0	6.8	6.6	7.1	7.3	0.0	0.5
Touchdown	7.1	7.4	7.2	7.6	6.6	7.4	7.3	7.2	7.2	0.0	0.3
Indigo	5.7	6.0	6.5	6.8	6.3	7.1	6.9	6.5	7.2	0.0	0.3
Welcome	6.8	7.2	7.2	7.6	5.8	6.6	6.4	6.9	7.2	0.3	1.0
Eclipse	6.8	5.6	6.8	7.2	6.2	7.0	6.9	6.6	7.1	0.0	1.0
Bristol	6.7	7.0	5.9	6.2	5.9	6.6	6.5	6.3	7.0	0.0	2.0
Enmundi	6.8	7.2	6.6	7.0	6.0	6.7	6.6	6.7	7.0	1.5	2.8
Adelphi	7.2	6.7	7.2	7.6	6.2	6.9	6.8	6.9	7.0	0.0	0.8
Bronco	7.8	8.2	6.7	7.0	6.5	7.3	7.1	7.1	7.0	0.0	1.0
Midnight	5.7	6.0	5.6	5.9	6.2	6.9	6.8	6.1	7.0	1.5	3.3
Ram I	7.3	7.7	6.7	7.1	5.8	6.5	6.3	6.7	6.9	5.5	7.8
America	4.3	4.5	6.5	6.8	5.9	6.6	6.4	6.0	6.9	1.0	2.3
Glade	5.9	6.2	6.8	7.1	6.6	7.4	7.2	6.8	6.9	0.5	0.8
Victa	6.2	6.5	6.0	6.3	5.9	6.6	6.5	6.3	6.8	0.0	0.5
Crest	6.2	6.5	6.1	6.4	5.7	6.4	6.3	6.2	6.8	3.0	5.3
Coventry	4.6	4.8	7.2	7.6	5.4	6.1	6.0	6.2	6.7	0.3	0.8
Banff	5.7	6.0	5.5	5.7	5.8	6.6	6.9	5.9	6.7	0.0	0.0
Liberty	6.8	5.9	5.8	6.1	6.1	6.9	6.7	6.1	6.6	0.3	2.0
LSD (0.05)	0.9	0.7	0.6	0.8	0.3	0.3	0.4	0.4	0.5	1.0	1.5

* Cutworm damage rated on a scale of 0 to 9, where 0=no damage, 9=severe damage.
 ** NRS is the incidence of necrotic ringspot rated on a scale of 0 to 9, where 0=no disease, 9=severe disease.

Short Cutts

continued from page 3

any dissatisfaction with Cornell. I have truly enjoyed working with my colleagues at Cornell, the Extension agents, and your industry organizations to provide weed management guidelines and educational opportunities. While my departure will leave a temporary void, you still have at Cornell one of the best turfgrass management teams in the country. I'm sure you will continue to support them as they work to help you and your industry.

I will miss my friends and colleagues at Cornell and throughout New York, but take with me many fond memories and all that I have learned from you (well, maybe not all but at least as much as an absentminded professor can retain). I bid you a fond farewell but look forward to seeing many of you at the NYSTA conference in November.

Cornell Turf Short Course Announced

The 12th annual Cornell Cooperative Extension Turfgrass Management Short Course will be held in Ithaca, NY January 6-10 and 13-17, 1997.

The 2-week long Short Course includes 75 teaching hours focusing on the principles of turfgrass establishment and maintenance. Topics studied include grass morphology, identification and selection; principles of soils, drainage, irrigation, fertilization, cultivation, and renovation; and pest management topics including identification and control strategies for insects, diseases and weeds. Additional subjects covered for professional development include developing budgets, communication skills, customer relations, motivation in management, developing turfgrass management strategies, and the selection, establishment and maintenance of ornamentals.

Forty instructors and assistants from Cornell University's Turfgrass Science Program, SUNY Agricultural and Technical Colleges at Cobleskill and Delhi, and the turfgrass industry

The 12th annual Cornell Cooperative Extension Turfgrass Management Short Course will be held in Ithaca, NY January 6-10 and 13-17, 1997.



continued on page 9