



CONVERTING KENTUCKY BLUEGRASS TO LOW MAINTENANCE TURFGRASS SPECIES

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Introduction

The cost of maintaining a golf course is increasing. Fertilizer, pesticides, labor and fuel cost involved in maintaining golf courses continue to stress superintendents' maintenance budgets. Average prices for major fertilizer nutrients reached the highest level on record in April 2008 at 228% higher than the January 2000 level, according to the U. S. Department of Agriculture. Fuel costs have risen by 269% since 1992. Water restrictions are also increasing throughout the United States and golf courses are often scrutinized for their water use as golf is thought of as a luxury expenditure. Increased maintenance costs and water restrictions have caused superintendents to rethink the proportion of their golf course that will be heavily maintained. Transitioning heavily maintained rough areas to low maintenance turfgrasses will allow golf course superintendents to reduce fertilizer and pesticide use, water use and labor costs required for mowing and maintenance.

Materials and Methods

Two locations were selected to conduct research on converting Kentucky bluegrass (*Poa pratensis*) to low maintenance turfgrasses: the University of Minnesota Turfgrass Research, Outreach and Education (TROE) Center on the St. Paul campus and Rush Creek Golf Club in Maple Grove. Five low maintenance turfgrasses along with five different establishment methods were selected for evaluation. Each turfgrass species was paired with each conversion method to create 25 different combinations. Turfgrass species include: Chewings fescue (*Festuca rubra* var. *commutata*), hard fescue (*Festuca longifolia*), strong creeping red fescue (*Festuca rubra rubra*), sheeps fescue (*Festuca ovina*) and tufted hairgrass (*Deschampsia cespitosa*). The five establishment methods include two nonselective glyphosate treatments; the first glyphosate treatment is applied pre-seeding and the second is applied post-seeding into the conversion areas. Both areas are core aerified prior to seeding. An additional conversion method utilizes the soil fumigant Basamid in which the areas are first core aerified, the soil fumigant is applied and subsequently seeded 14 days after fumigation. The final two conversion methods consist of stripping all turfgrass from the conversion site, then tilling in the top two to three inches to disrupt the soil surface and then seeding the areas. One of these areas will be left unmowed during growing season and the other will be mowed during the first growing season. During the second growing season, both areas will be left unmowed and establishment differences will be documented.

Results

During the first growing season, data collection has been based on how the different grasses are establishing in the different establishment methods. Data collected included turfgrass seedling counts, broadleaf weed counts, Kentucky bluegrass counts, biomass collections throughout the growing season, stand quality ratings, turfgrass vigor ratings and percent cover of the desired turfgrass species. The study will be replicated again during the fall of 2008, with the second round of data collection occurring during the summer of 2009.

Summary

The majority of golf course rough in Minnesota is planted with Kentucky bluegrass. The objective of this study is to evaluate methods of converting Kentucky bluegrass to low maintenance turfgrass species. Ideally, golf course superintendents with Kentucky bluegrass rough will use this information to make more informed decisions on converting to low maintenance turfgrass areas.

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