

Deschampsia as a Native, Shade Tolerant Turfgrass

Jason Kruse, University of Florida, Gainesville, FL and John Stier, University of Wisconsin, Madison, WI

Introduction

Few grass species have been characterized as being tolerant of extended periods of shade in cool-season environments. Once established by seed or sod, the stand often declines over time, eventually leading to a thinning canopy and increased weed pressure. Tufted hairgrass (*Deschampsia caespitosa*) and crested dog's tail (*Cynosurus cristatus*) have been identified as being tolerant of shade, drought, and low maintenance conditions. The site was established with tufted hairgrass ('Spike', 'DCM', 'SR6000', and 'Shade Champ') fine fescue (*Festuca spp.*) ('Tiffany', 'Boreal', 'Berkshire', and 'Iverness'), tall fescue (*Festuca arundinacea*) ('Tar Heel II' and 'Coyote II'), Kentucky bluegrass (*Poa pratensis*) ('HT Dura Blue'), and crested dog's tail ('Shade Star') were selected to evaluate turfgrass quality in a natural shade environment under low maintenance.

Methods

A site was selected in Oshkosh, WI, along the North side of an existing 25' tall hedge to maximize natural shade. Existing turfgrass was removed with applications of glyphosate.

Seedbed was prepped with a verticutter operated in two directions. Plots were established on 20 September 2006 and received no supplemental irrigation during establishment or maintenance. Seeding rate for each species/cultivar was calculated to provide 25 PLS/in². Plots received a starter fertilizer, 15-24-8 (Spring Valley), applied at a nitrogen rate of 1 lb/1000 ft² at time of establishment. Additionally, plots were fertilized on 22 May 2007 and 29 May 2008 with a 34-0-11 (Spring Valley) at a nitrogen rate of 0.75 lb/1000 ft². No herbicide was applied during observation period.



Figure 1. Photo of plots during spring green-up taken on 24 April 2008.



Figure 2. Photos of plots taken on 10 October 2008 showing extent of mid-day shade across plots.

Results

The deschampsia entries 'DCM', 'Shade Champ' and 'SR6000' were found to have a dark green genetic color similar to 'Berkshire' fine fescue while 'Shade Star' crested dog's tail had the lightest green color of all entries (Figure 3). 'Shade Star' consistently produced high turf quality ratings through the 2007 and 2008 growing seasons while 'Spike' and 'DCM' deschampsia produced quality similar to or better than the fine fescue entries (Table 1). While the lighter green color might limit use in mixed stands, the consistent quality indicates potential for 'Shade Star' as shade tolerant low-maintenance alternative to species commonly recommended for shaded turfgrass areas.

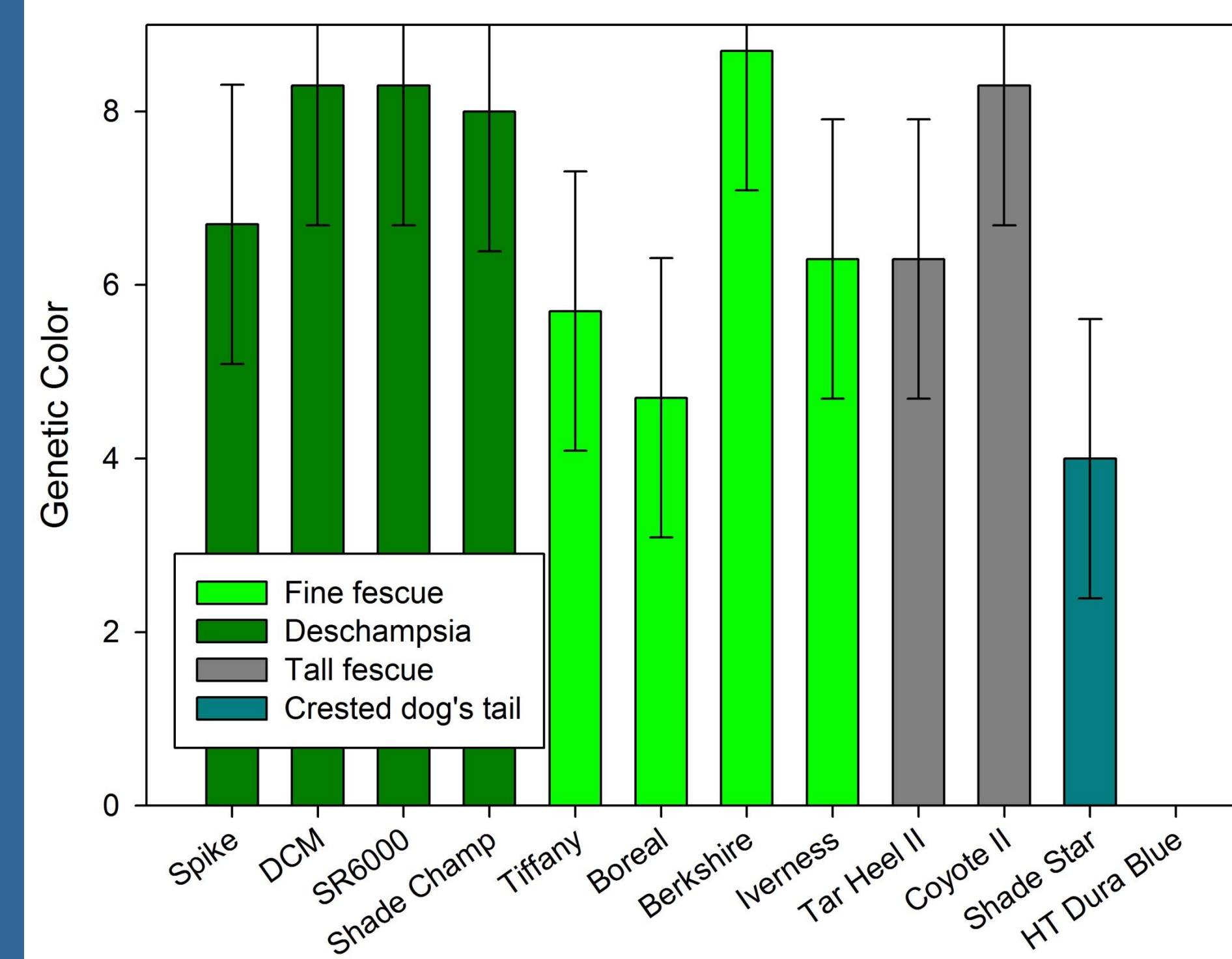


Figure 3. Genetic color ranked on a 1 to 9 scale where 1 = light green/yellow and 9 = dark green as observed on 26 September 2008.

Table 1. Visual turf quality of plots rated on a scale of 1 to 9 where 1=dead, 6=acceptable, and 9=ideal turf quality.

	26-Sep-07	29-May-08	26-Sep-08
Spike	5.3 BC	5.3 AB	6.0 BCD
DCM	5.3 BC	4.7 AB	6.0 BCD
SR6000	5.0 BC	5.3 AB	5.3 DEF
Shade Champ	5.3 BC	5.7 A	5.3 DEF
Tiffany	4.7 BCD	4.7 AB	5.7 CDE
Boreal	3.7 D	4.3 ABC	5.0 EF
Berkshire	7.0 A	5.3 AB	6.3 BC
Iverness	4.0 CD	3.7 BC	4.7 F
Tar Heel II	5.0 BC	1.3 D	6.7 B
Coyote II	6.0 AB	2.7 CD	7.7 A
Shade Star	7.0 A	4.7 AB	8.0 A
Dura Blue	3.7 D	1.0 D	1.0 G

Pictures – 10 October 2008



'Shade Star' Crested Dog's Tail

'Coyote II' Tall Fescue



'Berkshire' Fine Fescue

'Spike' Deschampsia