

PACE Turfgrass Research Institute

Fairbanks Ranch Country Club Fairway and Rough Improvement Research Project STATUS REPORT, January 30, 2001

Water quality and cool season turf establishment

Ryegrass and tall fescue varieties, which were seeded on September 16 at a rate of 8 lbs/1000 square feet, established rapidly, based on data taken every 2 –4 weeks after planting. Most of the ryes and fescues are performing well at all three water qualities tested – even the low quality well water (Figures 1 and 3). Tomahawk tall fescue is the only variety so far where water quality appears to have a direct effect on turf quality. The lack of response of most cool season varieties to water quality may be due to the fact that the fall weather has been ideal for cool season turf growth. We therefore expect to see a greater impact of water quality when the cool season varieties are more stressed during the hot summer months. In addition, because the study is relatively young, salt levels have not built up to the maximum levels that we expect to see one to two years from now.

The results were a bit different for warm season varieties, however (Figures 2 and 3). Although the bermudagrass and paspalum established well, they established more slowly. This is at least partly due to the mode of planting (sprigging), the low sprigging rate for Sea Isle paspalum, and the relatively late time of planting in September. However, water quality had a big effect on the establishment of warm season varieties, with a much lower rate of establishment observed in the low quality well water plots, and a higher rate of establishment in domestic water plots. Although this data is preliminary, it suggests that although varieties such as bermudagrass and paspalum are more salt tolerant than cool season species **once they are established**, their establishment may be impacted negatively by low quality water, especially if they are under stress. Therefore, for optimal establishment under low quality irrigation conditions, warm season turf should be planted in the late spring or summer.

Figure 3. Turf establishment, 12/19/00. All varieties were well established going into the winter, with high turf quality ratings for cool season varieties (planted on the far left and far right hand sides of the plot areas below). Warm season turf varieties (larger plots with sparser turf in the center of the test area below) established well, but the fall planting date did not allow full establishment by December. The bare areas in the photo below represent low water quality plots where warm season turf varieties had difficulty establishing.



Figure 1. The effect of water quality on cool season turf quality. 12/19/00 ratings.

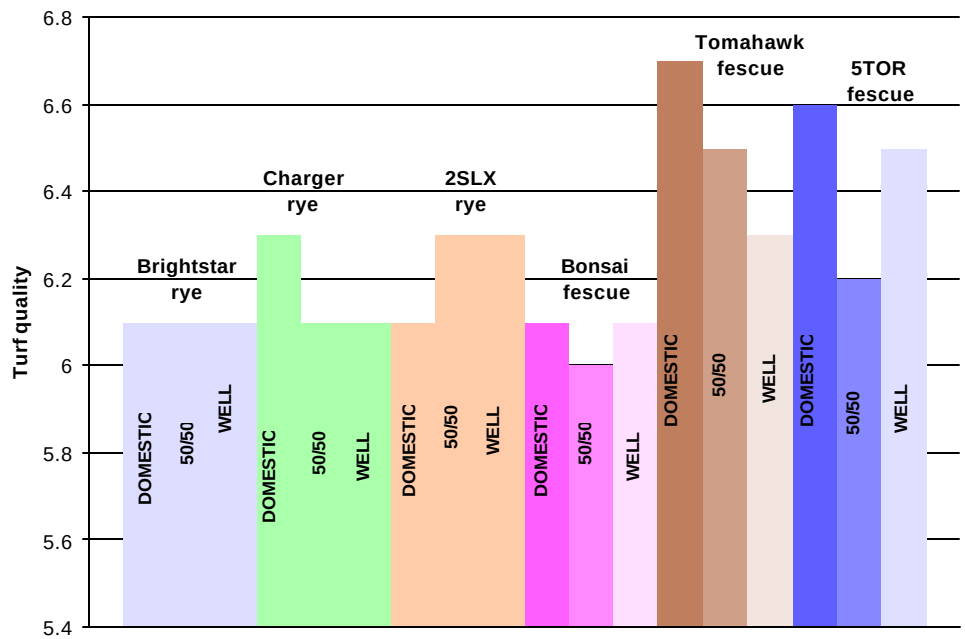


Figure 2. The effect of water quality on establishment of two warm season turf varieties – Sea Isle paspalum and Tifway II bermudagrass. Note that the percent turf cover was correlated with water quality, with the highest turf cover ratings for each variety occurred in the high quality water plots, and the lowest turf cover ratings occurred in the low quality well water plots. The overall lower turf coverage for Sea Isle paspalum was due to its much lower sprigging rate (2 bushels/1000 sq ft due to limited supplies) compared to the 10 bushels/1000 rate for Tifway II bermudagrass

