2002-2003 Overseeding Turf Trials

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Abstract

Sixty-four overseed turf entries were evaluated from October 2002, to June 2003 for turf when overseeded on Tifway bermudagrass fairway turf. Overseed entries included 43 single variety (or experimental synthetics) of perennial ryegrass, 2 annual ryegrasses, 6 entries of intermediate or 'hybrid' ryegrass, 5 entries of Poa trivialis (PT), one blend of perennial ryegrass, 4 mixtures (two or more species together) and 3 fescues. The main effect of "overseed grass entry" was highly significant on all dates for all visual turf responses, which included establishment, color quality, density, texture, and spring transition. The greatest amount of variation occurred within the perennial ryegrass group as a whole, showing the diversity within this species for overseeding performance. Annual ryegrass provided quick germination and ground coverage in the fall and a quick spring transition, but was of poor turf quality. Intermediate ryegrasses had performance values between that of perennial and annual ryegrass, some of which provided moderately good turf performance and good transition. Poa trivialis was slow to establish, but provided good quality and excellent plot texture, however they had poor transitional qualities. Final quality mean scores ranged from 3.0 (P-02-0047 PT) to 7.7. There were three entries, which averaged 7.7 at the close of the test, which included Mach 1 PR, SR 4500 PR, and Pace PR. The entries IG-2, Greenville PR, Express PR, Bar LO 2001, Hawkeye, Partee finished at 7.3 for quality. Among the intermediate ryegrass entries, Froghair finished with a mean quality score of 7.0, followed by Pick 00-A-LH (5.3). All three fescues produced mean quality scores of 6.0 or better on 8 June (Hardtop fescue leading at 6.7 for quality). The Labarinth tall fescue did have 62% Bermuda at the end of the test, compared to 65% for all entries at that time.

Entries which had a mean quality score of 7.0 or more in June, along with a bermuda transition of close to 75% or more at the termination of the test included the following entries; Citation Fore, Mach 1, BarGold, Bar LP 2001, Pace, Greenville OSP, and Express.

Introduction

Overseeding bermudagrass fairways, tees, greens and sports turf's is a common practice in the southern United States. Bermudagrass, which is the dominant grass species often does not remain actively growing into the fall and often goes into winter dormancy for two to three months based on temperature/elevation conditions. Therefore, most turf mangers overseed the bermudagrass with a cool season turf species, which will provide adequate cover, color and turf quality shortly after overseeding until the late spring when spring transition begins. The spring transition back to bermudagrass is an important part of the overseed performance, since facilities are expecting minimal loss of turf during the bermuda re-establishment period. Therefore, transition performance is just as critical as early season quality and cold tolerance performance issues. Perennial ryegrass has traditionally been used as a main-staple in

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overseeding. This is due to its (1) ability to germinate quickly, (2) inherent dark green color, (3) relative ease of establishment and (4) relatively low cost. Other grasses used include Poa trivialis (PT), which requires minimal bermudagrass turf preparation (small seed size) and moderate seed cost. Interest in fine turf fescues and rhizome producing tall fescues has occurred also in overseeding. A field trial was conducted to evaluate 64 overseed grass entries (species, cultivars, blends and mixtures) to evaluate new germplasm for overseed performance.

Materials and Methods

Sixty-four entries were prepared for overseeding onto a five-year-old Tifway 419 turf maintained year round at 5/8". Entries included mostly perennial ryegrass cultivars, experimental synthetics, blends of ryegrass cultivars, species mixes and other species including Poa trivialis, fineleaf fescues and one tall fescue entry.

The bermuda was scalped in two directions and then vertically mowed in two directions immediately before the seed was sown. Plot size was 5x5, with each entry appearing three times in a randomized complete block design. On October 14, caged plots were hand seeded with shaker cans pre-drilled in preparation to relative seed size(s), so that plots were seeded in 4-5 directions. Plots were overseeded at 600 lbs PLS/ acre for ryegrasses. Immediately after overseeding, plots were raked with the under side of a box rake and rolled with a water filled 875 lb. roller and irrigated for emergence. Plots were assigned visual scores for turfgrass attributes using the National Turf Evaluation Program (NTEP) scale system for turfgrass color, quality, density and texture when applicable. Ratings began on 28 October (14 days after overseeding) and ended on 8 June. Grass canopy estimates of percent straw, bermuda and ryegrass were assigned to plots after overseeding, during mid-winter and again during transition.

All data was analyzed according to the analysis of variance technique (ANOVA), using SAS software. Least significant difference (LSD) values were calculated for use as the mean separation statistic. In addition, a mean statistics summary table was calculated to show mean performance of single blends, mixtures and species.

Results

Early Emergence

By two weeks after overseeding, entries exhibited a large and significant difference in emergence and plot cover. BAR LM 1001-b and Gulf annual ryegrass emerged quickly and provided quick cover (7.7 and 7.0) on 28 October (Table 1). This is typical of annual ryegrass. The intermediate (sometimes referred to as hybrid) ryegrass such as Pick 1R 2-99 (6.3), Transeze (6.0) also provided quick cover as did Transit (6.7). Showboat 1 mixture (which included annual ryegrass) also had quick establishment (7.0) on 28 October (Table 1). Most ryegrass cultivars, lines, or blends of ryegrasses had mean density scores of 5.0 to 6.7 at this time. The entries, which exhibited the slowest germination, included the Poa trivialis (PT) entries, as well as the tall fescue 'Labarinth' the chewing fescues, and hard fescues 'BAR CHF' and 'Hardtop', respectively. The PT showed only slight emergence by 14 DAT on 28 October. As species groups, the annual ryegrasses germinated and emerged the quickest (7.3), followed by the mixtures (5.8) and the perennial ryegrass entries at large (5.8) (Table 2).

Plot color was assigned to plots on 28 October as well. Those entries which had slow emergence showed poor overall plot color since underlying (damaged) bermuda was evident to some extent, while the inherently dark green color of some of the perennial ryegrass entries was very noticeable. The ryegrass entries 'BMX-02.0203' was very dark in color (8.0), followed closely by 'Americus ' (7.7), 'Hawkeye' (7.7) and 'Vixen' (7.7) (Table 3). The fine fescue entries 'BAR CHF 8 FUS1' and 'Hardtop' were also surprisingly dark in color (7.3) as well on 28 October. The intermediate ryegrass entries had moderate color (5.7 to 6.7), with 'Gulf' annual being characteristically lighter in color (4.0). The "blends" averaged 6.7 for color, followed by the perennial ryegrass and intermediate ryegrasses (6.2), and the "fescues" collectively (6.2) (Table 4).

Fall and winter performance (7 November to 28 January)

By 7 November, cooler daytime and night temperatures prevailed and overall turf quality improved. All plots had no (0%) soil showing, but varied in the difference in the amount of percent plot straw exhibited from the underlying bermudagrass preparation. The non-overseeded bermudagrass had essentially 25% straw (75% green bermuda cover) at that time (Table 5). Among overseed entries, the percent plot straw ranged from 2.7% (SR4470) to 16.7% (Stardust PT).

Among the straight seeded (PT) entries, P-02-0047 had the least amount of straw (6.7%) again with Stardust having the most (16.7%) straw showing. The intermediate ryegrass entries had low amounts of straw, with Playmate E2 having the lowest (3.7) among them. Collectively, the PT turfs showed the most amount of straw plot cover (14%) compared to the other overseed compositions (Table 6).

Plot color scores among overseed entries ranged from (3.3) Gulf, (3.7) Laser PT and (3.7) to Tanseze (7.3), Citation Fore (7.3) Indy PR and (7.7) BAR CHF chewings fescue (Table 3). CHECK DAVE.

Overall turf quality scores were first assigned on 7 November 2002, which ranged in mean entry performance from 3.7 to 7.3. 'Gulf' annual ryegrass had the poorest quality (3.7) while the ryegrass entries 'Applaud', 'Indy', and 'BMX-02.0203 all had mean quality scores of 7.0. The chewing fescue produced very good turf quality (7.3). Intermediate ryegrass entries ranged in mean quality scores of 5.0 to 6.7 noting that 'Playmate E2' is a mixture of both perennial and intermediate ryegrass. In general, the PT entries had lower quality scores because of their slower establishment tendencies. The tall fescue 'Labarinth' had good overall quality (6.0) followed by 'Hardtop' hard fescue (6.7) and by BAR CHF chewings fescue (7.3), which ranked numerically first in overall quality on 7 November 2002 (Table 7). Collectively, the fescues ranked first in quality (6.7), followed by the perennial ryegrass group (5.9) (Table 8). Entries with the darkest color on 7 November included again BAR CHF 8FUS7 chewings fescue (7.7), Indy PR (7.3) and Citation Fore Blend (7.3) (Table 1).

By 11 December, cold night temperatures occurred and the bermuda was now winter dormant. Any bermuda which was visually evident now was fully dormant and was easy to see against the overseed turf. The non-overseeded bermudagrass plots average 56.7% straw, while overseed entries ranged from roughly 6.0% to 33% plot straw (Table 5). Treatments with the least amount of straw (and conversely, greatest amount of overseed cover) included Partee PR and ELP rye blend (6.4%) along with SR4500 PR (6.7%). Entries with the most percent plot straw included 'Stardust' PT (33%), 'Harbour' intermediate rye (30%0and P-02.0048 PT (30%) and PS7-2SBE (27%) on 11 December (Table 5). The greatest amounts of plot straw are typically evident this time of the year, since the overseed grass experiences less then optimal growing temperatures (moderate day temperatures accompanied by chilling nights) and the bermuda goes nearly completely off color. Among the fescues, 'Hardtop' hard fescue had the most straw (23%) with 'Labarinth' tall fescue and 'BAR CHF 8FUS1' having 13%-15% straw. In general, the Poa trivialis entries had an average, the most percent plot straw (24% as a species) when used on a fairway (Table 6).

On 11 December, mean turfgrass color scores ranged from 3.7 to 7.7 among overseeded entries (Table 3). 'Vixen' PR ranked numerically first (7.7), followed by both BMX 02.0203 and IG-2 (7.3) and Ph.D. blend (7.0). The lightest color turf was that of P-02-0048 PT (3.7) (Table 3). The intermediate rye's ranged in mean color scores from 5.3 to 6.0. The annual/perennial mixtures of Showboat I and Showboat II both scored 4.7 for color, influenced most likely by the annual ryegrass component. Collectively, the single component ryegrass entries ranked first for turf color (6.3) while the Poa trivialis group was (as expected) light in color (4.1), (Table 4). All three fescue's showed a noticeable decrease in quality on 11 December compared to the 7 November ratings. All perennial ryegrass entries produced a grand average of 6.3 for color on 11 December, while all blends produced a grand average of 5.7.

Mean turfgrass quality scores ranged from 3.0 to only 6.7 on 11 December (Table 7). SR4420 and ELP ryegrasses had the highest rankings for mean turf quality (6.7). 'Stardust' PT and 'Hardtop' chewings fescue and Gulf annual rye had the lowest quality (3.0) scores at this time. These grasses would be of poor quality even to the non-golfer. At this time, the blends produced the highest quality turfs (5.7) (Table 8).

On 28 January, overall color improved for all test entries as daytime temperatures had increased and longer day lengths started to occur. The perennial ryegrass BMX-02-0383was extremely dark in color (8.7), followed by the ryegrasses 'IG-2', 'Applaud', 'Hawkeye', and SR4420' (all with mean score values of 8.0). There were twenty other entries which produced mean color scores of 7.0 to 7.9 (good-very good green color). Turf's with the lightest color included Showboat mixtures, Gulf annual rye, Transeze intermediate rye, and P-02-0047 Poa trivialis entries (Table 3). In general, perennial ryegrasses tended to produce the darkest color turf's (6.8) followed by their respective blends (6.7), with the rest producing mean specie or mixture scores between 4.3-5.3 (Table 4).

Mean quality scores on 28 January 2003 ranged from 8.3 to 4.7. Laser PT produced an excellent high quality turf (8.3), as did the Tufstar Bariviera turf (8.0) (Table7). All PT entries now showed high quality, after a slow start from overseeding three and one half months previously. Gulf annual ryegrass and 'Hardtop' chewings fescue both had mean quality scores of 4.7 on 28 January. The intermediate ryegrasses ranged in mean turf quality from 5.3 to 6.0, exhibiting fair turf quality. Among the fescues, the chewings fescue BAR CH 8 FUS1 ranked highest (6.0) versus 'Labarinth' TFR and 'Hardtop' chewings fescue, both with mean quality scores of 4.7 (Table 7).

As a species group, Poa trivialis produced the highest quality species means (7.3) followed by perennial ryegrass cultivars on accessions (5.9) (Table 8). The rye BAR LM 1001 b produced good quality turf at this time (7.0). On 28 January, many grasses exhibited fair density. Mean density scores ranged from 8.0 (Poa trivialis entries) to 4.7 (both LS-PRG 800 perennial ryegrass and 'Harbour' intermediate rye) Table 1). Among the fescues, the chewings type produced the densest looking turf (6.7) on 28 January (Table1). Clearly, the Poa trivialis entries collectively produced the denser turfs (7.4) (Table 2).

Overall plot texture scores were assigned to plots on 28 January which reflected relative leaf widths across the plot. Mean canopy textures ranged from 3.3 for the wider bladed entry of 'Gulf' annual, to 8.0 for BAR CHF 8FUS1 chewings fescue, which appeared finer in texture than the PT entries (Table 9) 'Hardtop' chewing's fescue was close behind (7.7) in texture, as was BarGold perennial ryegrass (7.7). The fine fescues and PT turfs produced very fine texture ratings (7.0 and 6.6 respectively) (Table 10).

On 28 January, percent plot species composition showed the minimum amount of straw at this time (bermuda still 100% dormant). Percent plot dormant turf ranged from less than 1% to 13% on 28 January 2003. Twelve entries had 4% or less straw evident, while five had 10% or more straw visible (Table 5). 'Transeze' intermediate had less than 1% straw visible as did the Showboat II mixture. Among species and product formulations, the Poa trivialis entries had a low amount of straw present (2.9%) on average for the five PT entries tested, while the four mixtures had only 1.3% plot straw on 28 January (Table 6).

Early Spring Performance: (Feb 24 to March 11)

On 24 February, mean color scores ranged from 4.0 to 9.0 under warmer weather conditions (Table 3). BMX-02-0203 had a mean color score of 9.0 (dark forest green), followed closely by PHD (8.7). Next were the entries Winter Turf II ryegrass blend (8.3), Americus PR (8.0), Intrepid PR (8.0), Applaud PR (8.0),Mach 1 PR (8.0), Par 5 (8.0), Citation Fore and PST 2BE (8.0). The annual ryegrass averaged (4.0), with the fescue entries averaging 4.8 for color on 24 February (Table 4). All together, there were sixteen entries, which averaged, 7.5 or greater on 24 February.

Overall turfgrass quality means ranged from 3.7 to 8.3 on 24 February (Table 7). The Showboat 1 mixture of annual and perennial ryegrass had a pronounced amount of annual rye present, which diminished quality (3.7). Strait 'Gulf' annual averaged 4.0 for its quality at this time with 'Transeze' intermediate scoring a mean value of 4.3). Collectively, the PT group and the single entry ryegrasses were the highest-ranking groups for quality (6.7 – 6.8) (Table 8.0). Among the intermediate ryegrass entries, Froghair II and Pick-00-A-LH had mean quality scores of 6.0. The Poa trivialis entry P-02-0077 scored well with a mean quality score of 7.7 by 24 February. As a collective group, Poa trivialis entries averaged 6.8, while all perennial rye (single cultivar) entries averaged 6.7 (Table 4).. Plot texture scores ranged from 3.0 to 8.0. The entries, BAR CHF 8 FUS 1 chewings fescue and 'hardtop' hard fescue averaged 8.0, exhibiting very fine leaf textures. Other entries with fine mean texture scores included Pace PR (7.7), Applaud PR (7.7), BarGold PR (7.3) and BAR LP 2002 (7.3) (Table 9). Most of the PT entries did have a broader visual leaf width than the entries noted above. As a species comparison, the fine leaf fescues ranked first (6.8), followed by single perennial ryegrass entries (6.4), followed by PT (5.9). As expected the annual ryegrass turfs were visibly the coarser turfs (3.8) on 24 February (Table 10).

On 11 March, mean color scores ranged from 3.7 to 8.7 among overseed entries. Mach I and Pavillion ryegrass entries had mean color scores of 8.7 (extremely dark) followed closely by the three BMX ryegrass entries (all averaging 8.3) followed by Par 5 (8.3) and the Ph.D. Blend (8.3) (Table 3). All three fescue entries had the same mean color scores of 5.0 on 11 March. Among the intermediate ryegrasses, 'Froghair II' and Pick 00-A-LH had the largest numerical mean color scores of 6.0. Among specie entries, the ryegrass cultivars were the darkest (7.3), followed by the specie blends which contained ryegrass (6.3), and then by the intermediate ryegrass types (5.3) (Table 4).

Mean quality scores ranged from 3.3 (Gulf annual) to 8.7 (BarGold) on 11 March (Table 7). Warm conditions produced excellent quality turfs by this time. Applaud and Intrepid perennial ryegrass entries both had mean quality scores of 8.3. SR 4500, Turfstar blend, Ph.D. blend, SR 4500 and Salinas all had mean quality scores of 8.0. P-02-0047 PT had the best quality among PT entries (6.3). For species comparisons, the single perennial ryegrass entries ranked first for quality (7.2), followed by the fine fescues (6.2), noting that tall fescue alone did not have good quality at this time (4.5).Both annual ryegrass entries averaged 3.5 on 11 March (Table 8).

Mean density scores ranged from 4.3 to 9.0 on 11 March. Gulf annual had the lowest visual density mean score (4.3), while P-02-0047 PT, P-02-0046 PT and Bar LP 2002 ryegrass all had mean density scores of 8.3 (Table 1). Six other entries had mean density scores of 8.0 which included; P-02-0048 PT, Laser PT, Stardust PT, Pavillion PR, Mach 1 PR, and Pace PR. BarGold perennial ryegrass was the most dense looking grass with a mean score of (9.0). When ranked by composition type, the PT entries produced the largest ranking density mean (8.1) on March 11 (Table 2).

Mid Spring: April 14 .

On 14 April, mean color scores ranged from 3.3 (P-02-008 PT) to 8.3 (Par 5 PR) (Table 3). Five other entries had mean color scores of 8.0 which included Applaud PR, BMX 02-0203 PR, and Americus PR IG2 PR and PST 2SBE ryegrass. PST 2SBE produced a dark green color turf starting in January up into and included the midway rating period. At this time, the Tifway 419 bermuda began to show signs of greenup (4.8) (Table 3). Collectively, the perennial ryegrass entries produced the best color (7.0), followed by blends which contained PR (6.0) and then by the intermediate ryegrass entries (5.4). Poa trivialis was inherently the lightest (3.8) on 14 April (Table 4).

Mean quality score ranged from 4.0 to 9.0 on 14 April. BarGold perennial ryegrass had a mean quality of 9.0 producing essentially picture perfect turf. Other entries with exceptional quality included Piroutte PR (8.7), Overseed III blend (8.7), Intrepid PR (8.3), '3P' blend (8.3), and Greenville PR (8.3). Fourteen other entries produced turfs with mean quality scores of (7.7) Again collectively, the perennial ryegrass (single cultivars and accessions) produced the better overall quality turfs (7.5), followed closely by the ryegrass blends (6.7) (Table 8).

Mean visual density scores ranged from 4.0 to 8.7 on 14 April (Table 7). BarGold ranked first at 8.7. Both Bar LP 2002 and Piroutte perennial ryegrass entries had mean density scores of 8.3. These were followed closely by the Overseed III blend, the '3P' blend, ELP, SW Eagle blend, Pavillion PR, Bar LP 2001 and Pace PR (all with mean density scores of 6.7). Both Froghair II and Pick 00-A-LH had fully acceptable mean density scores of 6.7. Collectively, the single component entries of perennial ryegrass ranked first for density (7.3), followed by ryegrass containing blends (6.7) and the tall and fine fescues (6.0) which was "carried" by the Hardtop hard fescue (7.0). (Table 2).

On 14 April, plots also received visual scores for tolerance to mowing (presence or absence of leaf shredding) which occurs in the spring on cool season grasses under conditions of higher day temperatures and increased day length. Scores were assigned to all plots using a 1-6 scale where 1 = no shredding, 4= moderate, 6 = severe shredding (Table 11). On 14 April, leaf-tearing scores ranged from 1.3 to 4.3. Entries with the least amount of leaf shredding included the Overseed III blend, Salinas PR, BMX 02-0383, BMX 02-0203 ryegrass and Mach 1 PR, Americas Star blend, Turfstar blend, BarGold PR, Pace PR and Greenville PR. Surprisingly, the Poa trivialis entries had more leaf shredding present than the ryegrasses, which was slightly more severe than even that of the annual ryegrass entries (Table 11, Table 12).

Late Spring and Transition back to Tifway Bermuda: (May 14 to June 6, 2003)

On 14 May overall mean color scores for all entries decreased slightly from 6.3 (14 April) to 6.1 (14 May) (Table 3). Six entries which had mean color scores of 7.7 included PST-2SBE PR, IG2 PR, Ph.D. blend, Partee PR, Hawkeye PR and the Turfstar blend PR. Among the intermediate ryegrass entries, Pick 00-A-LH ranked numerically highest for color (6.3) while Transeze ranked lowest (4.3) in color on 14 May (Table 3). Collectively, the single entry perennial ryegrass entries averaged 6.7, followed by the ryegrass blends (5.7) and then by the intermediate ryegrass entries (5.2) on 14 May 2003 (Table 4).

On 14 May, the overall test mean average was 6.2 for quality, with overseed entry means ranging from 3.7 to 8.3 for turfgrass quality (Table 7). BarGold PR ranked numerically first at 8.3, followed by SR 4500 (8.0) and Playmate (8.0), both which are also perennial ryegrass entries. Several entries followed with mean quality scores of 7.7 which included; Intrepid PR, Americas PR, Turfstar blend PR and Pirouttee PR. Both Showboat mixtures had low quality scores (4.), as did P-02-0047 Poa trivialis ryegrass (4.3). Transeze intermediate ryegrass had a low quality average score of (3.7). The single entry perennial ryegrass germplasm had the highest quality average (6.8), again followed by the ryegrass blends (6.0), followed by the intermediate ryegrass entries (5.2) (Table 8).

Mean canopy texture scores were assigned to all plots for the last time on 14 May 2003. Mean texture scores ranged from 4.0 (Showboat 1) to 8.3 (BarGold Pr). Bar CHF 8 FUS 1 also maintained an extremely fine texture (8.0), (Table 9). These were followed by the entries Intrepid PR (7.3), Piroutte (7.3), Bar LP 2002 PR (7.3) and ELP (7.0). Collectively, the texture of all single entry ryegrass entries ranked first (6.6) along with the fescues (6.6) due to the fine texture of the chewings fescue entry. The Poa trivialis ranked next to 6.3, followed by the intermediate ryegrass entries (6.0) (Table 10).

On 14 May, transition scores were assigned to plots by estimating the percent bermudagrass, overseed grass and straw/or bare ground turf plot percentages. On 14 May, the non-overseed was 90% bermuda cover and 10% straw turf. Among overseed entries, the percent plot bermuda ranged from a low of 20% for PT P-02.0047 to 78% for "Gulf' annual ryegrass, and 80-83% for both 'Showboat' mixtures. The grand mean of all entries was 49% bermuda on 12 May. Other entries with 65% or more bermuda included the Overseed III mixture (67%), Citation Fore (65%), Americus PR (69%), Charger II (70%), Bar LM 100 LB PR (70%), Bar LP 2002 (72%) and Transeze intermediate ryegrass at 65%. The PT entries had 20-30% bermuda and similar amounts of bare/straw turf (10% on average) as did both Showboat entries. Among the intermediate ryegrass entries, Transeze had the most bermuda (65%) followed by Froghair II (60%), (Table 5). Gulf annual had 79% bermuda at this time. In general, entries which had the most bermuda, also had the greater amount of straw turf present (10-13% on average). Collectively, the annual ryegrass entries had 75% bermuda, followed by the species ryegrass blends (62%), and the species mixtures (55%), (Table 6). The three fescues averaged 30% Bermuda. Surprisingly the Labarinth tall fescue had more bermuda (52%) then the chewings (33%) or hard fescues (15%), (Table 5).

The final evaluation on the test was conducted on 6 June for turfgrass color, quality, density and percent plot composition. The transition proved to be most interesting. The percent plot bermudagrass among overseeded plots ranged from 23% to 87%. The PT entry P-02-0047 averaged 23% bermuda cover (and 33% straw) at this time. Other PT entries averaged 30-42% bermuda cover (Table 5). Other entries with 80% or more bermudagrass cover averaged included the Overseed III PR blend (80%), Quick Trans PR (83%), Hardtop hard fescue (83), Pace PR (82%), Americus (80%) and BAR CHF 8 FUS chewing's fescue (80%). The entry with the most percent plot bermuda was Greenville PR at 87% bermuda (13% rye, no dead straw present). Entries with the most dead straw/bare ground included Pick IR 2-99 intermediate (43% bermuda/7% rye/50% straw); P-02-0047 PT (23% bermuda/43% PT/33% dead grass); Transeze intermediate (70% bermuda/3% rye/27% straw) and Transist Intermediate ryegrass (47% Bermuda/ 25% overseed/ and 28% straw. Entries with at least 75% bermuda and less then 5% straw would be less noticeable to the average lay person in terms of some form of a "notable" or "visible" transition. These would include the entries of Greenville PR, SW Eagle blend, Pace PR, Bar LP 2001, American Star blend, Charger II blend, Quick Trans, and the Overseed III blend. On a composite basis, the three-fescue entries averaged 75% bermuda, followed by annual ryegrass (73%), PR blends (72%) and then single entry perennial ryegrass entries (69% bermuda). The intermediate (on average) had 60% bermuda on June 6, followed by the species mixtures (57%) and finally by the PT entries (39%), (Table 6.0).

Finally, color scores ranged from 3.3 to 7.3 at the end of the trial. (Table 3). Transist 2200 intermediate ryegrass and Transeze intermediate ryegrass had the lowest mean color scores (3.3). Gulf annual scored a 5.0 at that time due to the earlier return of underlying bermuda. SR 4500 ranked highest numerically at 7.3 for color on 8 June, followed closely by Partee PR (7.0), the Ph.D. blend (7.0) and Racer PR (7.0). The entries Racer and Ph.D. had essentially identical plot composition estimates (65% rye/32 rye/2% straw) at the close of the test. The perennial ryegrass entries on average maintained a dark green color at the end of the test (6.1). The non-overseeded bermuda averaged 5.3, (Table 4).

Final quality mean scores ranged from 3.0 (P-02-0047 PT) to 7.7. There were three entries which averaged 7.7 at the close of the test which included Mach 1 PR, SR 4500 PR, and Pace PR. The entries IG-2, Greenville PR, Express PR, Bar LO 2001, Hawkeye, Partee finished at 7.3 for quality. Among the intermediate ryegrass entries, Froghair finished with a mean quality score of 7.0, followed by Pick 00-A-LH (5.3).

This data set shows a tremendous variation within perennial ryegrass germplasm for overall quality, color, texture and transition responses. All three fescues produced mean quality scores of 6.0 or better on 8 June (Hardtop fescue leading at 6.7 for quality). The Labarinth tall fescue did have 62% bermuda at the end of the test, compared to 65% for all entries at that time.

Entries which had a mean quality score of 7.0 or more in June, along with a bermuda transition of close to 75% or more at the close of the test included the following entries; Citation Fore, Mach 1, BarGold, Bar LP 2001, Pace, Greenville OSP, and Express.

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Table 1. Visual DENSITY/VIGOR of overseed entries, Fall 2002 - Spring 2003. Karsten Turfgrass Research Facility.
Values are means of 3 replications; 1-9, 9=best.

Entry Name	species	*28-Oct*	*7-Nov*	*28-Jan*	*11-Mar*	*14-Apr*	*8-Jun*
P-02.0047	Poa triv	1.7	5.7	8.0	8.3	4.3	3.3
P-02.0046	Poa triv	1.7	5.3	7.3	8.3	5.7	4.7
P-02.0048	Poa triv	1.0	5.0	7.7	8.0	5.3	5.0
Laser	Poa triv	2.0	5.7	8.0	8.0	5.0	4.7
Overseed III (Divine, Majesty, Ascend)	P. rye	5.3	6.7	5.3	6.7	8.0	7.0
Winter Turf X (Inspire, Gallery, Splendid)	P. rye	4.7	6.3	5.3	7.0	7.0	6.7
LS-PRG-800	P. rye	5.3	5.7	4.7	7.0	7.3	6.3
PST-2SBE	P. rye	3.7	6.7	5.3	6.7	7.0	7.0
Brightstar II	P. rye	4.7	6.7	5.7	7.0	7.0	7.0
Brightstar SLT	P. rye	4.3	6.0	5.3	6.7	7.3	6.7
QuickTrans	P. rye	5.0	6.0	5.7	5.7	7.0	7.0
Citation Fore	P. rye	6.0	7.3	5.7	7.7	7.7	7.7
Catalina II (PST-CATS)	P. rye	5.3	5.7	6.0	7.0	6.7	6.7
Charger II	P. rye	6.3	6.0	6.0	7.7	7.0	7.0
Salinas (M65-2-2SLX)	P. rye	6.0	7.0	6.7	7.0	7.0	7.0
SunIn Pro (Intrepid, WP200, Westlawn)	P. rye	6.0	6.0	6.3	7.3	7.3	6.3
Intrepid	P. rye	6.3	6.0	6.0	7.3	7.3	6.7
Vixen PRG	P. rye	6.3	6.7	6.0	7.3	7.0	6.3
PAR 5	P. rye	5.0	6.7	5.7	6.7	6.7	7.0
Froghair II	Int. rye	5.3	7.0	5.0	7.0	6.7	6.7
Stardust	Poa triv	1.3	5.3	6.0	8.0	6.0	5.3
'3P' (Pizzazz, Paragon, Promise)	P. rye	5.3	6.7	6.0	7.3	8.0	7.3
'ELP' (Evening Shade, Laredo, Paragon)	P. rye	6.3	6.3	7.0	8.0	6.7	7.0
IG2	P. rye	5.7	7.3	6.3	8.7	8.0	7.3
BMX-02.0383	P. rye	5.0	6.7	5.3	7.7	7.3	7.0
BMX-02.0203	P. rye	5.3	6.7	5.7	7.0	7.0	7.0
BMX-02.0384	P. rye	4.7	6.7	5.0	7.0	6.7	7.0
Pavilion	P. rye	5.7	6.7	6.3	8.0	8.0	7.3
Americus	P. rye	5.7	6.3	5.7	7.3	7.3	6.7
American Star Blend	P. rye	4.7	6.3	5.3	6.7	7.7	7.7
Indy	P. rye	4.0	7.0	5.3	7.3	6.7	7.3
PH.D. Blend	P. rye	5.3	7.0	6.0	6.7	7.0	7.7
Showboat #1	A. & P. rye	7.0	5.7	5.7	3.7	4.0	5.7
Showboat #2	A. & P. rye	6.3	5.3	6.0	4.0	4.0	6.3
Mach 1	P. rye	6.0	6.3	5.7	8.0	7.3	8.0
Partee	P. rye	6.3	6.3	7.0	7.3	7.3	7.0
Applaud	P. rye	6.7	7.0	6.3	7.3	7.7	6.7
SR4500	P. rye	5.7	6.3	6.7	7.3	6.7	7.3
Hawkeye	P. rye	6.7	6.3	6.0	7.3	7.0	7.7
SR4420	P. rye	5.7	7.7	7.7	7.7	7.3	7.0
Champion E-Zee	rye blend	5.3	6.0	6.3	5.7	6.7	6.0
Labarinth	T. Fescue	3.0	6.0	5.0	6.0	5.3	6.3
BAR CHF 8FUS1	C. Fescue	4.3	7.7	6.7	7.7	5.7	6.7
Hardtop	H. Fescue	2.7	7.0	5.3	7.0	7.0	6.7
Turfstar/Bariviera	mix	4.7	6.3	7.7	7.0	6.0	5.0
BAR LM 1001b	A. rye	7.7	6.3	6.3	4.7	4.3	5.7
BAR Lp 2002	P. rye	5.0	6.7	6.7	8.3	8.3	7.0
Turfstar blend	P. rye	5.7	7.0	6.7	7.0	7.7	6.7
BARGOLD	P. rye	5.0	6.0	7.3	9.0	8.7	7.3
BAR Lp 2001	P. rye	4.3	7.3	6.0	7.0	8.0	7.3
Pace	P. rye	6.3	7.0	6.0	8.0	8.0	8.0
Pirouette	P. rye	6.3	7.0	6.3	7.7	8.3	7.7
Harbour	Int. rye	4.7	6.0	4.7	5.7	6.0	6.3
S.W. Eagle Blend	P. rye	6.0	5.0	5.3	7.0	8.0	8.0
Greenville (osp-002)	P. rye	5.3	6.7	5.3	7.3	7.0	7.7
Transist 2200 (L18-1-601)	Int. rye	6.7	5.7	6.7	5.0	5.3	4.3

Table 2. Visual DENSITY/VIGOR of overseed entries, Fall 2002 - Spring 2003. Karsten Turfgrass Research Facility. 1-9, 9=best.

Variety	n	*28-Oct*	*7-Nov*	*28-Jan*	*11-Mar*	*14-Apr*	*8-Jun*
P. rye	129	5.8	6.6	5.9	7.3	7.3	7.2
A. rye	6	7.3	5.7	5.8	4.5	4.2	5.8
Int rye	18	5.7	5.9	5.6	5.6	5.8	5.0
Fescue	9	3.3	6.9	5.7	6.9	6.0	6.6
Poa triv	15	1.5	5.4	7.4	8.1	5.3	4.6
blend	3	5.3	6.0	6.3	5.7	6.7	6.0
mix	12	5.8	6.1	6.3	5.0	5.0	6.1
non-seede	3	1.0	4.2	1.2	3.2	3.5	6.7
Test Mean		4.5	5.8	5.5	5.8	5.5	6.0

Table 4. Visual COLOR of overseed entries, Fall 2002 - Spring 2003. Karsten Turfgrass . Research Facility. 1-9, 9=best.

Variety	n	*28-Oct*	*7-Nov*	*11-Dec*	*28-Jan*	*24-Feb*	*11-Mar*	*14-Apr*	*14-May*	*8-Jun*
P. rye	129	6.2	5.9	6.3	6.8	7.3	7.3	7.0	6.7	6.1
A. rye	6	4.7	3.7	4.2	4.3	4.0	4.0	4.2	4.0	4.7
Int rye	18	6.2	4.8	5.0	5.3	5.4	5.3	5.4	5.2	4.0
Fescue	9	6.2	6.7	4.6	4.9	4.8	5.0	5.0	4.9	5.4
Poa triv	15	2.1	4.7	4.1	4.8	4.3	4.3	3.8	4.6	4.9
blend	3	6.7	5.3	5.7	6.7	6.0	6.3	6.0	5.7	5.0
mix	12	4.7	4.3	4.8	4.8	4.6	4.5	5.0	4.5	5.3
non-seede	3	2.7	3.3	1.5	1.3	2.3	2.8	4.8	5.0	5.3
Test Mean		4.9	4.8	4.5	4.9	4.8	4.9	5.2	5.1	5.1

Table 3. Visual COLOR of overseed entries, Fall 2002 - Spring 2003. Karsten Turfgrass Research Facility.
Values are means of 3 replications; 1-9, 9=best.

Entry Name	species	company/s	*28-Oct*	*7-Nov*	*11-Dec*	*28-Jan*	*24-Feb*	*11-Mar*	*14-Apr*	*14-May*	*8-Jun*
P-02.0047	Poa triv	ProSeed / V	2.3	5.7	4.3	4.7	4.3	4.3	3.7	4.3	4.0
P-02.0046	Poa triv	ProSeed / V	2.3	4.3	4.3	5.0	4.7	4.3	4.3	4.7	5.7
P-02.0048	Poa triv	ProSeed / V	2.3	4.7	3.7	5.0	4.0	3.7	3.3	4.7	4.7
Laser	Poa triv	ProSeed / V	1.7	3.7	4.3	4.7	4.3	4.3	4.0	4.3	4.7
Overseed III (Divine, Majesty, Ascend)	P. rye	Scotts	5.3	6.0	5.7	6.0	6.0	6.0	6.0	6.0	5.7
Winter Turf X (Inspire, Gallery, Splendid)	P. rye	Scotts	5.3	6.3	6.7	7.0	8.3	7.0	7.7	6.7	6.3
LS-PRG-800	P. rye	Lewis Seed	5.7	5.0	7.0	7.3	7.7	7.3	7.7	6.7	6.0
PST-2SBE	P. rye	Lewis Seed	5.3	6.0	5.7	7.3	8.0	8.0	8.0	7.7	6.0
Brightstar II	P. rye	Turf-Seed I	7.3	7.0	7.0	6.0	7.3	7.0	7.0	6.7	5.7
Brightstar SLT	P. rye	Turf-Seed I	6.0	6.0	7.0	7.3	7.7	7.3	7.3	7.3	6.0
QuickTrans	P. rye	Turf-Seed I	6.3	6.0	5.3	6.0	7.3	7.3	7.0	6.7	6.0
Citation Fore	P. rye	Turf-Seed I	6.3	7.3	7.0	6.7	8.0	7.7	7.0	7.0	6.7
Catalina II (PST-CATS)	P. rye	Turf-Seed I	7.3	5.7	7.0	7.7	7.3	7.7	6.7	6.7	6.3
Charger II	P. rye	Turf-Seed I	5.3	4.3	5.7	6.0	6.7	6.3	6.0	6.0	5.7
Salinas (M65-2-2SLX)	P. rye	Turf-Seed I	5.7	5.3	6.0	6.7	7.0	7.0	6.3	6.7	6.3
SunIn Pro (Intrepid, WP200, Westlawn)	P. rye	Western Pr	5.3	5.0	6.0	6.3	6.0	6.3	6.7	6.3	6.0
Intrepid	P. rye	Western Pr	5.0	4.0	5.0	5.3	6.0	6.3	6.0	6.0	5.3
Vixen PRG	P. rye	Burlingham	7.7	6.0	7.7	7.3	8.3	7.7	7.7	7.3	5.3
PAR 5	P. rye	Burlingham	6.7	6.7	7.0	7.0	8.0	8.3	8.3	6.7	5.3
Froghair II	Int. rye	Turf Mercha	6.7	5.7	6.0	5.7	5.7	6.0	6.0	5.3	5.0
Stardust	Poa triv	Turf Mercha	2.0	5.3	4.0	4.7	4.3	4.7	3.7	5.0	5.3
'3P' (Pizzazz, Paragon, Promise)	P. rye	Turf Mercha	5.3	5.7	6.7	6.3	6.7	6.7	7.3	7.3	6.7
'ELP' (Evening Shade, Laredo, Paragon)	P. rye	Turf Mercha	6.3	5.0	5.7	6.7	7.0	5.7	6.0	6.0	5.3
IG2	P. rye	Pennington	7.0	6.7	7.3	8.0	7.3	7.3	8.0	7.7	6.3
BMX-02.0383	P. rye	Virginia Lef	7.0	6.7	7.0	7.0	7.7	8.3	7.3	7.3	6.7
BMX-02.0203	P. rye	Virginia Lef	8.0	7.0	7.3	8.7	9.0	8.3	8.0	7.3	6.7
BMX-02.0384	P. rye	Virginia Lef	7.3	7.0	7.0	6.7	7.7	8.3	7.3	7.0	5.7
Pavilion	P. rye	Riverview S	5.7	6.7	7.3	7.7	7.7	8.7	7.3	7.0	6.0
Americus	P. rye	BlueMoon I	7.7	7.0	6.7	6.7	8.3	8.0	8.0	6.3	5.7
American Star Blend	P. rye	BlueMoon I	6.0	6.7	6.7	5.7	6.7	7.3	7.3	6.3	6.3
Indy	P. rye	BlueMoon I	7.3	7.3	6.7	7.7	7.7	8.0	7.3	6.7	5.3
PH.D. Blend	P. rye	Cebeco Int	7.0	5.7	7.0	7.7	8.7	8.3	7.7	7.7	7.0
Showboat #1	A. & P. rye	Cebeco Int	4.0	3.0	4.7	4.0	4.3	4.3	4.7	4.0	6.0
Showboat #2	A. & P. rye	Cebeco Int	4.0	3.3	4.7	4.3	4.0	4.0	4.7	4.3	5.3
Mach 1	P. rye	Jacklin See	6.7	6.3	6.7	7.0	8.0	8.7	7.7	7.3	6.7
Partee	P. rye	Jacklin See	6.0	5.3	6.7	7.3	7.7	7.3	7.0	7.7	7.0
Applaud	P. rye	Jacklin See	7.0	6.0	6.7	8.0	8.0	7.7	8.0	7.0	6.7
SR4500	P. rye	Seed Rese	5.3	4.7	6.0	6.7	7.0	6.7	7.0	6.3	7.3
Hawkeye	P. rye	Seed Rese	7.7	6.3	6.3	8.0	7.7	7.0	6.7	7.7	6.3
SR4420	P. rye	Seed Rese	6.3	7.0	6.3	8.0	7.3	7.7	7.7	6.7	6.0
Champion E-Zee	rye blend	Seed Rese	6.7	5.3	5.7	6.7	6.0	6.3	6.0	5.7	5.0
Labarinth	T. Fescue	Barenbrug	4.0	6.0	4.7	4.3	4.3	5.0	5.3	5.0	5.0
BAR CHF 8FUS1	C. Fescue	Barenbrug	7.3	7.7	5.3	5.7	5.3	5.0	4.7	5.0	5.3
Hardtop	H. Fescue	Barenbrug	7.3	6.3	3.7	4.7	4.7	5.0	5.0	4.7	6.0
Turfstar/Bariviera	mix	Barenbrug	5.0	6.0	4.7	5.0	4.3	4.3	5.0	4.3	4.3
BAR LM 1001b	A. rye	Barenbrug	5.3	4.0	4.3	4.7	4.0	4.0	4.7	4.0	4.3
BAR Lp 2002	P. rye	Barenbrug	5.3	5.7	6.0	6.0	6.0	6.3	6.3	5.7	6.3
Turfstar blend	P. rye	Barenbrug	6.3	5.7	6.7	7.3	7.7	8.0	7.3	7.7	6.3
BARGOLD	P. rye	Barenbrug	4.0	4.0	4.0	4.7	5.0	5.7	5.3	5.0	5.3
BAR Lp 2001	P. rye	Barenbrug	6.3	6.3	6.3	7.3	7.0	7.0	6.7	6.3	6.7
Pace	P. rye	Barenbrug	5.3	5.3	6.3	6.3	6.3	6.3	6.7	6.3	5.0
Pirouette	P. rye	Barenbrug	5.3	6.0	5.7	6.7	6.7	7.0	6.7	6.0	5.7
Harbour	Int. rye	Lesco	6.3	5.0	5.3	5.3	6.3	5.7	5.3	6.0	5.0
S.W. Eagle Blend	P. rye	Lesco	6.0	4.7	5.3	6.7	7.3	7.0	6.3	6.3	5.0
Greenville (osp-002)	P. rye	Lesco	7.0	6.0	5.3	6.7	7.3	7.7	6.7	6.7	6.0
Transist 2200 (L18-1-601)	Int. rye	Pickseed	6.7	5.0	4.7	5.7	5.0	5.0	5.3	4.7	3.3

Table 5. Visual CANOPY COMPOSITION (%) of overseed entries, Fall 2002 - Spring 2003. Karsten Turfgrass Research Facility.

Values are means of 3 replications.

		7-Nov		*11-Dec*		*28-Jan*		*12-May*			
Entry Name	species	**%-green**	**%-straw**	**%-green**	**%-straw**	**%-green**	**%-straw**	**%-berm**	**%-c3**	**%-straw**	**%-berm**
P-02.0047	Poa triv	93	7	83	17	98	2	20	68	12	23
P-02.0046	Poa triv	84	16	78	22	96	4	27	62	12	43
P-02.0048	Poa triv	84	16	70	30	98	2	30	62	8	47
Laser	Poa triv	86	14	80	20	99	1	20	73	7	30
Overseed III (Divine, Majesty, Ascend)	P. rye	92	8	88	12	93	7	67	33	0	80
Winter Turf X (Inspire, Gallery, Splendid)	P. rye	91	9	82	18	91	9	42	58	0	67
LS-PRG-800	P. rye	93	7	83	17	91	9	50	50	0	63
PST-2SBE	P. rye	92	8	73	27	92	8	63	37	0	67
Brightstar II	P. rye	94	6	84	16	95	5	53	47	0	65
Brightstar SLT	P. rye	91	9	80	20	90	10	40	58	2	58
QuickTrans	P. rye	90	10	90	10	93	7	47	53	0	83
Citation Fore	P. rye	93	7	85	15	91	9	65	35	0	75
Catalina II (PST-CATS)	P. rye	94	6	82	18	96	4	48	52	0	63
Charger II	P. rye	89	11	87	13	93	7	70	30	0	75
Salinas (M65-2-2SLX)	P. rye	95	5	90	10	98	2	58	40	2	62
SunIn Pro (Intrepid, WP200, Westlawn)	P. rye	94	6	85	15	96	4	55	45	0	63
Intrepid	P. rye	92	8	88	12	95	5	53	47	0	65
Vixen PRG	P. rye	91	9	87	13	90	10	27	72	2	53
PAR 5	P. rye	95	5	82	18	93	7	33	67	0	68
Froghair II	Int. rye	93	7	77	23	93	7	60	40	0	70
Stardust	Poa triv	83	17	67	33	95	5	30	62	8	52
'3P' (Pizzazz, Paragon, Promise)	P. rye	95	5	91	9	93	7	37	60	3	67
'ELP' (Evening Shade, Laredo, Paragon)	P. rye	94	6	94	6	97	3	52	48	0	67
IG2	P. rye	96	4	92	8	97	3	47	53	0	63
BMX-02.0383	P. rye	91	9	83	17	93	7	38	62	0	67
BMX-02.0203	P. rye	95	5	83	17	95	5	38	60	2	67
BMX-02.0384	P. rye	91	9	82	18	89	11	43	57	0	70
Pavilion	P. rye	93	7	85	15	96	4	43	57	0	62
Americus	P. rye	94	6	88	12	92	8	68	32	0	80
American Star Blend	P. rye	89	11	87	13	93	7	32	68	0	75
Indy	P. rye	92	8	82	18	94	6	47	53	0	77
PH.D. Blend	P. rye	89	11	89	11	94	6	52	48	0	63
Showboat #1	A. & P. rye	92	8	82	18	98	2	83	7	10	58
Showboat #2	A. & P. rye	93	7	83	17	99	1	80	10	10	75
Mach 1	P. rye	93	7	91	9	92	8	52	48	0	73
Partee	P. rye	94	6	94	6	97	3	40	60	0	68
Applaud	P. rye	96	4	88	12	96	4	33	67	0	55
SR4500	P. rye	92	8	93	7	96	4	45	55	0	72
Hawkeye	P. rye	92	8	88	12	94	6	48	52	0	57
SR4420	P. rye	97	3	96	4	98	2	57	43	0	50
Champion E-Zee	rye blend	92	8	87	13	96	4	62	37	2	72
Labarinth	T. Fescue	92	8	85	15	92	8	52	45	3	62
BAR CHF 8FUS1	C. Fescue	95	5	87	13	94	6	33	63	3	80
Hardtop	H. Fescue	88	12	77	23	87	13	28	67	5	83
Turfstar/Bariviera	mix	93	7	87	13	100	0	15	78	7	33
BAR LM1001b	A. rye	96	4	92	8	99	1	70	17	13	70
BAR Lp 2002	P. rye	90	10	90	10	97	3	72	28	0	67
Turfstar blend	P. rye	94	6	88	12	97	3	33	67	0	67
BARGOLD	P. rye	94	6	87	13	98	2	30	70	0	73
BAR Lp 2001	P. rye	96	4	91	9	94	6	50	50	0	75
Pace	P. rye	96	4	93	7	96	4	55	43	2	82
Pirouette	P. rye	93	7	91	9	92	8	57	43	0	70
Harbour	Int. rye	89	11	70	30	90	10	53	45	2	68
S.W. Eagle Blend	P. rye	88	12	85	15	92	8	62	38	0	74
Greenville (osp-002)	P. rye	88	12	84	16	92	8	60	40	0	87
Transist 2200 (L18-1-601)	Int. rye	96	4	91	9	98	2	45	55	0	47

Table 6. Visual CANOPY COMPOSITION (%) of overseed entries, Fall 2002 - Spring 2003.
Karsten Turfgrass Research Facility.

		7-Nov		*11-Dec*		*28-Jan*		*12-May*			*6-Jun*		
Variety	n	%-green	%-straw	%-green	%-straw	%-green	%-straw	%-berm	%-c3	%-straw	%-berm	%-c3	%-straw
P. rye	129	92.8	7.2	87.1	12.9	94.0	6.0	49.2	50.5	0.3	68.4	26.9	4.7
A. rye	6	93.2	6.8	87.0	13.0	98.0	2.0	74.2	12.5	13.3	73.3	15.0	11.7
Int rye	18	92.3	7.8	82.4	17.6	95.5	4.5	52.2	45.6	2.2	60.6	16.9	22.5
Fescue	9	92.0	8.0	82.8	17.2	90.7	9.3	37.8	58.3	3.9	75.0	21.1	3.9
Poa triv	15	86.3	13.7	75.7	24.3	97.1	2.9	25.3	65.3	9.3	39.0	43.0	18.0
blend	3	91.7	8.3	86.7	13.3	95.7	4.3	61.7	36.7	1.7	71.7	20.0	8.3
mix	12	93.8	6.2	85.4	14.6	98.8	1.3	55.0	37.9	7.1	57.1	35.4	7.5
non-seede	3	74.2	25.8	43.3	56.7	0.0	100.0	77.5	11.7	10.8	80.0	11.7	8.3
Test Mean		89.5	10.5	78.8	21.2	83.7	16.3	54.1	39.8	6.1	65.6	23.7	10.6

Table 7. Visual QUALITY of overseed entries, Fall 2002 - Spring 2003. Karsten Turfgrass Research Facility.
Values are means of 3 replications; 1-9, 9=best.

Entry Name	species	*7-Nov*	*11-Dec*	*28-Jan*	*24-Feb*	*11-Mar*	*14-Apr*	*14-May*	*8-Jun*
P-02.0047	Poa triv	5.0	4.3	7.3	7.7	6.3	4.0	4.3	3.0
P-02.0046	Poa triv	4.7	4.0	7.7	7.0	5.7	4.0	4.7	4.3
P-02.0048	Poa triv	4.7	3.7	7.7	7.3	5.7	4.0	5.0	4.3
Laser	Poa triv	4.7	4.0	8.3	6.3	5.3	4.3	5.0	4.7
Overseed III (Divine, Majesty, Ascend)	P. rye	6.0	5.0	6.3	7.0	6.7	8.7	6.7	6.7
Winter Turf X (Inspire, Gallery, Splendid)	P. rye	6.3	4.7	5.0	6.3	6.0	7.7	7.0	6.3
LS-PRG-800	P. rye	5.0	4.7	5.3	6.0	6.7	6.0	6.3	6.0
PST-2SBE	P. rye	6.0	4.0	5.7	5.7	7.0	7.7	6.3	6.3
Brightstar II	P. rye	6.3	5.3	6.0	6.7	6.0	7.0	6.0	5.7
Brightstar SLT	P. rye	5.3	5.0	5.0	6.7	7.3	6.7	7.3	6.0
QuickTrans	P. rye	5.0	4.3	5.0	6.3	6.7	6.7	7.0	6.3
Citation Fore	P. rye	6.7	6.0	6.0	6.3	7.0	7.7	7.0	7.0
Catalina II (PST-CATS)	P. rye	5.3	4.7	6.0	6.7	7.0	7.0	6.3	6.7
Charger II	P. rye	4.3	5.0	5.0	6.7	7.7	7.7	5.7	6.0
Salinas (M65-2-2SLX)	P. rye	6.0	6.0	6.7	7.0	8.0	7.3	5.7	6.3
SunIn Pro (Intrepid, WP200, Westlawn)	P. rye	5.7	5.3	6.3	7.0	6.7	8.0	7.0	6.7
Intrepid	P. rye	5.0	4.7	6.3	6.7	8.3	8.3	7.7	5.7
Vixen PRG	P. rye	6.3	5.0	5.7	6.0	7.3	6.7	5.7	6.0
PAR 5	P. rye	6.3	5.0	4.7	6.0	7.0	7.7	7.0	6.3
Froghair II	Int. rye	5.0	3.7	5.3	6.0	6.3	6.3	6.3	7.0
Stardust	Poa triv	4.7	3.0	5.3	5.7	5.3	4.0	5.3	5.3
'3P' (Pizzazz, Paragon, Promise)	P. rye	6.0	5.7	6.0	6.3	7.0	8.3	6.7	6.7
'ELP' (Evening Shade, Laredo, Paragon)	P. rye	6.0	6.7	6.7	7.0	6.0	7.3	7.3	6.0
IG2	P. rye	7.0	6.0	6.7	8.3	7.3	7.7	7.0	7.3
BMX-02.0383	P. rye	5.7	5.0	4.7	6.3	7.3	7.0	5.7	6.7
BMX-02.0203	P. rye	7.0	5.3	6.3	6.7	7.3	7.7	6.0	6.3
BMX-02.0384	P. rye	5.3	4.3	4.3	5.3	6.3	7.7	6.3	6.7
Pavilion	P. rye	6.3	5.0	5.3	6.7	8.3	7.0	6.3	6.0
Americus	P. rye	7.0	6.0	5.3	5.7	7.3	7.0	7.7	6.3
American Star Blend	P. rye	5.7	5.3	5.3	6.3	7.7	7.3	7.0	6.7
Indy	P. rye	7.0	4.3	5.7	6.7	7.7	7.3	6.3	6.3
PH.D. Blend	P. rye	5.0	5.3	5.7	6.7	8.0	7.3	6.3	7.0
Showboat #1	A. & P. rye	4.7	4.0	4.3	3.7	3.7	4.3	4.0	6.0
Showboat #2	A. & P. rye	4.3	3.7	5.0	4.0	3.3	4.0	4.0	5.7
Mach 1	P. rye	6.0	5.0	6.0	6.3	7.3	7.3	6.3	7.7
Partee	P. rye	6.0	5.7	6.3	7.3	7.0	7.0	7.3	7.3
Applaud	P. rye	7.0	5.7	6.7	7.0	8.3	7.3	6.7	5.7
SR4500	P. rye	5.0	6.0	6.3	6.7	8.0	7.7	8.0	7.7
Hawkeye	P. rye	6.3	4.7	6.0	7.0	7.0	7.3	7.0	7.3
SR4420	P. rye	6.7	6.7	6.7	8.0	7.3	7.7	7.3	5.7
Champion E-Zee	rye blend	5.3	5.7	5.7	5.7	5.0	6.7	6.0	5.3
Labarinth	T. Fescue	6.0	4.7	4.7	4.3	4.7	5.7	5.0	6.0
BAR CHF 8FUS1	C. Fescue	7.3	5.3	6.0	8.0	7.7	4.3	5.7	6.0
Hardtop	H. Fescue	6.7	3.0	4.7	5.3	6.3	5.0	5.0	6.7
Turfstar/Bariviera	mix	5.0	5.7	8.0	6.0	4.3	4.3	5.0	4.3
BAR LM 1001b	A. rye	5.3	5.0	7.0	5.3	3.7	4.7	4.3	5.0
BAR Lp 2002	P. rye	5.7	5.7	6.3	6.7	7.0	8.0	6.3	6.3
Turfstar blend	P. rye	5.7	5.3	6.3	7.3	8.0	7.3	7.7	6.7
BARGOLD	P. rye	5.3	5.3	6.7	7.7	8.7	9.0	8.3	7.0
BAR Lp 2001	P. rye	6.0	5.3	6.0	6.7	6.7	7.7	7.0	7.3
Pace	P. rye	6.3	6.0	6.3	7.7	6.7	7.7	7.0	7.7
Pirouette	P. rye	6.7	6.0	6.0	7.3	6.7	8.7	7.7	6.3
Harbour	Int. rye	4.7	3.7	4.0	5.3	5.0	6.0	6.0	5.3
S.W. Eagle Blend	P. rye	5.3	5.0	5.7	6.7	7.7	7.7	7.0	6.7
Greenville (osp-002)	P. rye	6.0	4.7	5.7	6.7	7.7	8.3	6.7	7.3
Transist 2200 (L18-1-601)	Int. rye	5.3	4.7	6.3	5.3	5.0	5.3	5.0	3.7

Table 8. Visual QUALITY of overseed entries, Fall 2002 - Spring 2003.
Karsten Turfgrass Research Facility. 1-9, 9=best.

Variety	n	*7-Nov*	*11-Dec*	*28-Jan*	*24-Feb*	*11-Mar*	*14-Apr*	*14-May*
P. rye	129	5.9	5.2	5.9	6.7	7.2	7.5	6.8
A. rye	6	4.5	4.0	5.8	4.7	3.5	4.2	4.2
Int rye	18	5.0	4.1	5.2	5.4	5.2	5.9	5.3
Fescue	9	6.7	4.3	5.1	5.9	6.2	5.0	5.2
Poa triv	15	4.7	3.8	7.3	6.8	5.7	4.1	4.9
blend	3	5.3	5.7	5.7	5.7	5.0	6.7	6.0
mix	12	5.2	4.6	5.8	4.7	4.0	4.6	4.8
non-seede	3	3.5	1.5	1.0	2.0	2.8	4.0	3.8
Test Mean		5.1	4.2	5.2	5.2	5.0	5.2	5.1

Table 10. Visual CANOPY TEXTURE of overseed entries, Fall 2002 - Spring 2003.
Karsten Turfgrass Research Facility. 1-9, 9=best.

Variety	n	*28-Jan*	*24-Feb*	*11-Mar*	*14-May*
P. rye	129	6.2	6.4	7.0	6.6
A. rye	6	3.8	3.8	3.7	4.5
Int rye	18	5.0	4.9	5.1	6.0
Fescue	9	7.0	6.8	7.2	6.6
Poa triv	15	6.6	5.9	6.3	6.3
blend	3	5.0	5.0	5.0	5.7
mix	12	4.3	4.3	4.3	4.9
non-seede	3	1.3	2.7	5.2	5.2
Test Mean		4.9	5.0	5.5	5.7

Table 12. Visual LEAF TEARING (mower damage)
of overseed entries,
Fall 2002 - Spring 2003.
Karsten Turfgrass Research Facility.

Variety	n	*14-Apr*
P. rye	129	1.6
A. rye	6	3.0
Int rye	18	2.5
Fescue	9	3.3
Poa triv	15	4.0
blend	3	2.0
mix	12	3.3
non-seede	3	1.2
Test Mean		2.6

1-6; 1=none, 6=severe.

Table 9. Visual CANOPY TEXTURE of overseed entries, Fall 2002 - Spring 2003.

Karsten Turfgrass Research Facility **Sacle = 1-9, 9 = Best.**

Entry Name	Species	*28-Jan*	*24-Feb*	*11-Mar*	*14-May*
P-02.0047	Poa triv	6.7	6.0	7.3	5.3
P-02.0046	Poa triv	7.3	6.3	7.0	6.7
P-02.0048	Poa triv	7.0	6.3	6.0	6.3
Laser	Poa triv	6.0	5.7	6.0	6.3
Overseed III (Divine, Majesty, Ascend)	P. rye	6.7	6.3	6.3	7.0
Winter Turf X (Inspire, Gallery, Splendid)	P. rye	6.0	6.3	6.3	6.3
LS-PRG-800	P. rye	6.3	6.3	6.3	6.0
PST-2SBE	P. rye	6.0	6.3	6.7	5.3
Brightstar II	P. rye	5.7	6.3	6.0	6.7
Brightstar SLT	P. rye	6.0	6.7	6.7	6.3
QuickTrans	P. rye	6.7	6.3	6.0	7.0
Citation Fore	P. rye	6.3	6.0	6.3	6.3
Catalina II (PST-CATS)	P. rye	5.7	7.0	6.7	5.7
Charger II	P. rye	6.0	6.3	7.3	6.3
Salinas (M65-2-2SLX)	P. rye	5.7	6.7	7.3	6.3
SunIn Pro (Intrepid, WP200, Westlawn)	P. rye	6.0	6.0	6.3	6.7
Intrepid	P. rye	6.0	5.3	7.3	7.3
Vixen PRG	P. rye	6.3	5.7	7.0	6.3
PAR 5	P. rye	6.3	6.3	6.3	6.3
Froghair II	Int. rye	6.3	6.3	6.3	7.3
Stardust	Poa triv	6.0	5.3	5.3	6.7
'3P' (Pizzazz, Paragon, Promise)	P. rye	6.3	6.7	7.0	6.7
'ELP' (Evening Shade, Laredo, Paragon)	P. rye	6.3	5.7	6.7	7.3
IG2	P. rye	6.7	7.0	7.7	7.0
BMX-02.0383	P. rye	5.7	6.3	7.0	6.3
BMX-02.0203	P. rye	6.0	6.7	8.0	7.0
BMX-02.0384	P. rye	6.0	6.7	7.3	6.0
Pavilion	P. rye	6.0	7.0	7.0	6.3
Americus	P. rye	6.7	6.0	7.7	6.3
American Star Blend	P. rye	6.0	6.3	7.0	7.0
Indy	P. rye	6.3	6.3	8.0	6.0
PH.D. Blend	P. rye	5.7	6.7	7.0	6.0
Showboat #1	A. & P. rye	3.3	3.7	3.3	4.0
Showboat #2	A. & P. rye	3.3	3.0	3.3	4.7
Mach 1	P. rye	6.7	6.7	7.7	6.3
Partee	P. rye	6.7	6.3	7.3	6.3
Applaud	P. rye	6.3	7.7	7.0	6.3
SR4500	P. rye	6.3	5.7	7.3	7.0
Hawkeye	P. rye	6.3	6.0	7.3	6.7
SR4420	P. rye	6.0	6.7	6.7	6.7
Champion E-Zee	rye blend	5.0	5.0	5.0	5.7
Labarinth	T. Fescue	5.3	4.3	5.0	5.0
BAR CHF 8FUS1	C. Fescue	8.0	8.0	9.0	8.0
Hardtop	H. Fescue	7.7	8.0	7.7	6.7
Turfstar/Bariviera	mix	5.7	5.3	5.7	6.0
BAR LM 1001b	A. rye	4.3	4.0	4.0	4.7
BAR Lp 2002	P. rye	6.7	7.3	7.0	7.3
Turfstar blend	P. rye	6.7	6.0	7.0	6.7
BARGOLD	P. rye	7.7	7.3	8.7	8.3
BAR Lp 2001	P. rye	6.3	6.3	7.3	6.0
Pace	P. rye	6.7	7.7	7.0	6.7
Pirouette	P. rye	6.7	6.0	7.0	7.3

Table 9. Visual CANOPY TEXTURE of overseed entries, Fall 2002 - Spring 2003.

Karsten Turfgrass Research Facility **Sacle = 1-9, 9 = Best.**

Entry Name	Species	*28-Jan*	*24-Feb*	*11-Mar*	*14-May*
Harbour	Int. rye	4.7	5.0	4.7	6.0
S.W. Eagle Blend	P. rye	5.7	6.7	6.3	7.0
Greenville (osp-002)	P. rye	6.7	7.3	7.0	6.3
Transist 2200 (L18-1-601)	Int. rye	4.7	4.7	5.0	6.0
Gulf (B41-1W-040)	A. rye	3.3	3.7	3.3	4.3
Express (LA20-2-18443)	P. rye	5.7	6.0	6.3	6.7
Pick IR 2-99 (blk I2-99-AB-00)	Int. rye	4.7	4.7	5.0	5.7
Playmate (lot# AZ-02)	P. rye	5.7	6.0	7.0	7.0
Racer (M22-2-602)	P. rye	6.3	5.7	6.7	6.7
Transeze (B29-2-3GSS)	Int. rye	4.3	3.0	4.0	5.0
Playmate EZ (lot# AZ-EZ-02)	int. + p. rye	5.0	5.0	5.0	5.0
Pick 00-A Lh (M146-2-78)	Int. rye	5.7	6.0	6.0	6.0
non-seeded control	-	1.3	2.7	5.2	5.2
Test Mean		5.9	6.0	6.4	6.3
LSD		1.1	1.2	1.3	1.3

Table 11. Visual LEAF TEARING (mower damage) of overseed entries, Fall 2002 - Spring 2003. Karsten Turfgrass Research Facility.

Values are means of 3 replications; 1-6, 1=none, 6=severe.

Entry Name	species	14-Apr-03
P-02.0047	Poa triv	4.3
P-02.0046	Poa triv	4.0
P-02.0048	Poa triv	4.3
Laser	Poa triv	3.7
Overseed III (Divine, Majesty, Ascend)	P. rye	1.3
Winter Turf X (Inspire, Gallery, Splendid)	P. rye	1.0
LS-PRG-800	P. rye	2.0
PST-2SBE	P. rye	2.0
Brightstar II	P. rye	2.0
Brightstar SLT	P. rye	2.3
QuickTrans	P. rye	1.7
Citation Fore	P. rye	1.3
Catalina II (PST-CATS)	P. rye	2.0
Charger II	P. rye	1.7
Salinas (M65-2-2SLX)	P. rye	1.3
SunIn Pro (Intrepid, WP200, Westlawn)	P. rye	2.0
Intrepid	P. rye	2.0
Vixen PRG	P. rye	2.0
PAR 5	P. rye	1.3
Froghair II	Int. rye	2.3
Stardust	Poa triv	3.7
'3P' (Pizzazz, Paragon, Promise)	P. rye	2.0
'ELP' (Evening Shade, Laredo, Paragon)	P. rye	1.7
IG2	P. rye	1.0
BMX-02.0383	P. rye	1.3
BMX-02.0203	P. rye	1.3
BMX-02.0384	P. rye	1.7
Pavilion	P. rye	1.0
Americus	P. rye	1.7
American Star Blend	P. rye	1.3
Indy	P. rye	2.0
PH.D. Blend	P. rye	1.7
Showboat #1	A. & P. rye	3.7
Showboat #2	A. & P. rye	3.7
Mach 1	P. rye	1.3
Partee	P. rye	2.0
Applaud	P. rye	1.7
SR4500	P. rye	2.0
Hawkeye	P. rye	1.3
SR4420	P. rye	2.0
Champion E-Zee	rye blend	2.0
Labarinth	T. Fescue	3.0
BAR CHF 8FUS1	C. Fescue	3.3
Hardtop	H. Fescue	3.7
Turfstar/Bariviera	mix	4.0
BAR LM 1001b	A. rye	3.3
BAR Lp 2002	P. rye	1.7
Turfstar blend	P. rye	1.3
BARGOLD	P. rye	1.3
BAR Lp 2001	P. rye	2.0
Pace	P. rye	1.3
Pirouette	P. rye	1.0
Harbour	Int. rye	2.3
S.W. Eagle Blend	P. rye	1.7
Greenville (osp-002)	P. rye	1.3