

# OVERSEEDING FAIRWAY TRIALS

*D.M. Kopec and J.J. Gilbert  
University of Arizona*

## ***Abstract***

*Fifty-one overseed entries were evaluated in 1997-1998 for turfgrass performance. New experimental accessions of perennial ryegrass were darker in color than most of the commercially available germplasm included in this test. Ryegrass germplasm had better turfgrass quality after April, than did mixtures of perennial ryegrass with Poa trivialis, which performed well in December, January and March. General appearance for total plot leaf texture was best generally among the Poa trivialis containing mixtures. Hybrid (or intermediate) ryegrasses (L. which are crosses between perennial X annual ryegrass, are generally closer to annual ryegrass in performance. There was a vast improvement in L. hybridum (Pick YNC) when compared to annual ryegrass alone for turf performance. Intermediate and annual ryegrasses did show signs of decline in June (more so than ryegrass or Poa trivialis blends), which was desirable from a transition standpoint.*

## **Introduction**

Each year, thousands of golf courses, park, sports fields and commercial facilities overseed bermudagrass turf in the early fall with a cool season grass. This is necessary to provide a year-round green surface to maintain utility and function. Turfgrasses used include annual ryegrass (low maintenance areas) turf-type perennial ryegrass, Poa trivialis (usually in blends with other grass species) and hybrid ryegrasses (Lolium hybridum). Hybrid ryegrass is a cross between annual X perennial ryegrass.

A cool season germplasm test was established at the University of Arizona Karsten Turfgrass Facility in Tucson, Arizona, to assess turfgrass performance in a desert setting.

Plots were seeded on October 24, 1997, and were topdressed with 1/8 inch of a sand/manure mix. The test was irrigated for establishment until mowing commenced on November 15. The mowing height was 3/4". Plots were mowed 3x weekly. The test was fertilized with 3.4 lb. -N-/M in December, 1.0 lb. -N-/M in January, and 0.5 lb. -N-/M each month from February to June. Plot size was 4' x 6', with entries repeated three times in a RCB design. Plots were irrigated with 80% Ref Eto to avoid stress. The test was evaluated for establishment, turfgrass color, quality, texture, density and uniformity on six occasions from December 1997 to June 1998. The percent plot straw (dead cool season turf) was assigned to plots as a measure of transition (cool season grass decline). Fifty-one entries were included in the test, which included perennial ryegrass, annual ryegrass, hybrid ryegrass and Poa trivialis germplasm. Entries were comprised of commercial cultivars, blends, species mixtures, or experimental accessions (Appendix Table A). All data were analyzed using the analysis of variance technique. Least significant difference values (LSD) were calculated as the mean separation statistic.

## **Results and Discussion**

Plots were scored for visual percent plot cover on December 17, 1997 (0-100%) scale. Plot means ranged from 98% to

53% for plot coverage (Table 1). Twenty-four entries had mean plot cover values of 90%, or greater. Several experimental accessions had mean values of 78% or less (Table 1). By January all plots had essentially 100% cover (data not shown).

### **Turfgrass Color**

Color scores were assigned to plots using the National Turfgrass Evaluation Program (NTEP) visual scale of 1-9. Values were assigned on December 12, January 17, March 18, April 21, May 29 and June 18. "Winter averages" were calculated from the January, February and March ratings while "spring averages" were derived from the April, May and June scores. On all evaluation dates the overall entry effect was highly significant at  $P=0.001$ .

In early December, mean color scores ranged from 3.7 to 8.5 (Table 2). The entries "TPD", "Gulf Annual", Barverdi Annual" and "Interim" intermediate ryegrass had mean color scores of 4.3 or less. The hybrid ryegrass YNC had a mean color score of 5.7, being darker than most other annual or hybrid entries. The entry "97-1143" ranked first for dark color, with a mean value of 8.5. Three other entries had mean color scores of 7.5-7.7 ("97-3806", "97-1159", "M59-6-663" and "97-1111"). Several other entries had higher mean rank scores than some of the commercial germplasm (Table 2).

For January, mean turfgrass color scores ranged from 4.0 ("Barverdi", "Interim" and "Gulf") to 8.0 ("97-1143"). Three other experimental had mean color scores of 7.7, including "97-1109", "97-111" and "97-1159". Pick YNC hybrid ryegrass ranked highest numerically for color, against other hybrids or annual ryegrasses (Table 2).

In March, mean color scores ranged from 3.3 ("Barverdi" and "Gulf") to 8.0 ("97-1143", "97-1142", "97-1150" and "M59-6-663"). Warmer temperatures now increased mean overall color scores and excellent growing conditions prevailed. Thirteen additional entries had mean color scores of 7.3 to 7.7. All of these were experimental selections (Table 2).

For the "winter average", mean color scores ranged from 3.8 to 7.9 (Table 2). The entries "97-1143", "97-1159" and "97-1111" had mean winter color scores of 7.4, 7.6 and 7.9, respectively. Among the ryegrass/*Poa trivialis* mixtures, "Catalina/Winterplay", "Turfstar Plus" and "First-Cut" had winter color averages of 5.9, 5.4 and 5.1, respectively (Table 2).

In April, warmer daytime temperatures, along with cool night time temperatures allowed for excellent turfgrass color and appearance. Color scores ranged from 2.0 ("Gulf Annual") to 8.0 ("97-1109", "97-1142" and "97-1197"). Premier II ranked first among commercially available germplasm at 6.7. "Turfstar Plus" was very light in color (mean = 3.7). The "Catalina" blend had the darkest color among the PT containing mixtures (5.3) (Table 3).

Overall color scores declined slightly in May, with the return of high daytime temperatures and high solar radiation (Table 3). Mean color scores ranged from 3.0 to 7.7. The entries "Gulf-annual", "Interim" and "Barverdi-annual" had mean color scores of 3.7 or less. Again, "97-1143", "97-1142" and "97-1197" ranked numerically high for the darkest visual color (means = 7.7). "Majesty" and "Citation II" had mean color scores of 6.3. There were eight entries which had mean color scores in May of 4.7 or less.

The last evaluations for color were made on June 18, 1998. Mean color scores ranged from 1.7 to 7.3 (Table 3). "Gulf-annual" was almost dead with a low mean color score of 1.7. "Vision Quest", "Barverdi" and "Interim" had mean color scores of 3.3 or less for June. The three experimental entries "97-1150", "97-3809" and "95-1" showed excellent color under conditions of high daytime temperatures along with cool night temperatures.

### **Spring Color Averages**

Spring color averages are listed in Table 3 and represent the monthly average of April, May and June 1998 color scores. The entries that had the better "spring" color scores were not necessarily those which had the better "winter" color scores. The entry "97-1197" ranked numerically first for average spring color (7.6) and ranked ninth for "winter color" (average 7.1). These values are both acceptable. The entry "97-1159" ranked ninth in rank for "warm season" color average (mean = 6.7), while it ranked second numerically for "average winter" color (mean = 7.6). The entry "97-1143" ranked third for

“spring color average” (mean = 7.2) and ranked first for “average winter color” (mean = 8.0) (Tables 2, 3).

There was very little interaction for turfgrass color performance among the lower 25% of the entries.

For the yearly test average, “97-1143” ranked numerically highest (mean = 7.6), followed closely by “97-1197” and “97-1142” (means = 7.3). The highest ranking commercial cultivar was “Majesty” (mean = 6.3). Among the PT containing blends, “Catalina”, “Turfstar Plus” and “First cut” had mean yearly color average values of 5.7, 5.0 and 4.8, respectively. “Pick YNC”, “Barverdi”, “Interim”, and “Gulf annual” finished with overall seasonal mean color scores of 4.7, 3.5, 3.2 and 3.0, respectively (Table 10).

### **Turfgrass Quality**

Turfgrass quality scores were assigned on six evaluation dates from December 1997 to June 1998. Quality estimates were assigned using the NTEP rating scale of 1-9. Values are an integration of uniformity of appearance, density, leaf texture and homogeneity of color. On all dates the entry effect was highly significant at the  $P=0.001$  level.

In December 1997 turfgrass quality scores ranged from 3.3 (“Gulf annual”) to 7.7 (WX5-195-HF) perennial ryegrass (Table 4). “M59-6-663” and “Catalina” ranked next with a mean quality score of 7.3. Seven other entries had mean quality scores of 7.0. These included “LP-9”, “Leaderboard”, “Turfstar Plus”, “97-1159”, “Pro-Select”, “First cut”, and “97-1111”. Pick NYC hybrid ryegrass had a mean quality score of 5.7. “Interim” and “Gulf annual” had mean quality scores of 3.7 and 3.3, respectively (Table 4).

January 1998 quality scores ranged from 4.0 to 7.7. The mixture “Catalina/Winterplay” had a mean quality score of 7.7, followed closely by M59-6-663 and the “First cut” mixture, both with mean scores of 7.3. Seven other entries had mean quality scores of 7.0 which included “Leaderboard”, Premier II, “MP 5”, “97-1111”, Turfstar Plus, “97-1159” and “Imagine/Lynx/Pegasus” (Table 4). There were ten entries which had mean quality scores of 5.3 or less. “Gulf annual” had the lowest ranking score (mean = 4.0). Pick YNC had a mean quality score of 6.3 (Table 4).

March quality scores ranged from 3.0 to 6.7. The entries “Imagine/Lynx/Pegasus” and “Sonoran” ranked first numerically with mean quality scores of 6.7 (Table 4). “Catalina” and “Catalina/Winterplay” had mean quality scores of 6.3. Other entries including “First cut”, “97-1107”, “Majesty” and “LP 9” all had mean overall quality scores of 6.0. There were fourteen entries which had mean quality scores of 4.7 or less which included three entries with mean performance quality scores of 3.3 or less (Table 4).

For “winter average” quality mean scores, the range was from 3.4 to 6.8. Entries “TPD”, “Interim”, and “Gulf” had very low quality scores. The entries “M59-6-663”, “Catalina”, “Catalina/Winterplay”, “First cut” and “Imagine/Lynx/Pegasus” all had “winter average” quality mean scores of 6.8. There were twenty-two entries which finished within the range of 5.9 to 5.0 for “winter average” turfgrass quality (Table 4).

Quality scores ranged from 2.0 to 5.7 in April, probably due to a deficit in overall fertility. Six entries had mean April quality scores of 5.7. These included “97-3808”, “LP 9”, “Premier II”, “97-1107”, “Sonoran”, “97-1197” and “97-3809”. Among the PT containing mixtures, “First cut”, “Turfstar Plus” and “Catalina/Winterplay” had similar mean performance quality scores within the 4.3 to 4.7 range (Table 5).

For the May evaluation overall quality scores improved ranging from 3.0 to 7.0. The entry “Turfstar Plus” had the highest numerical mean rank score of 7.0 followed closely by “Citation II” and “Sonoran” (both with mean May quality scores of 6.7). There were twelve additional entries which had mean quality scores of 6.3. Another nineteen entries which had mean quality scores of 6.0 for May. “Pick YNC” had a mean quality score of 5.0, while “Barverdi annual” and “Gulf annual” ryegrasses had mean quality scores of 4.0 and 3.0, respectively (Table 5).

Turfgrass quality scores ranged from 2.0 (“Gulf annual”) to 6.3 “Paragon” and “97-1111” in June. There were fourteen entries which had mean June quality scores of 6.0. “Turfstar Plus” was the only PT containing mixture to have a mean score of 6.0 at this time. “Pick YNC” and “Gulf annual” had mean June quality scores of 4.0 and 2.0, respectively (Table 5).

For “average spring” turf quality (mean of April, May and June) quality scores ranged from 2.3 to 6.0. “Interim” and “Gulf annual” had mean spring quality average score of 2.4 and 2.3, respectively. The entry “97-1197” ranked numerically first for spring quality (mean = 6.0) followed closely by seven other entries, all with mean spring quality values of 5.9 (Table 5). These included the entries of “97-1111”, “Imagine/Lynx/Pegasus”, “97-1107”, “97-3808”, “Sonoran”, “Premier II” and “97-3809”. Among the PT containing mixtures “Turfstar Plus”, “First cut” and “Catalina/Winterplay” had mean spring quality scores of 5.8, 5.3 and 5.2, respectively. “Pick YNC” hybrid ryegrass produced a “spring” mean quality score of 4.1. “Gulf annual” finished with a mean score of 2.3 (Table 5).

“Winter” and “spring” quality scores showed some interaction between entries. For example, the entry “M59-6-63” ranked numerically highest (with four other entries) for winter quality with a mean score of 6.8, but decreased to a mean “spring” quality average of 5.4. The same was essentially true for the entries “First cut” and “Catalina/Winterplay”(Tables 4,5).

The entry “97-1197” ranked in the middle of all entries for “winter” quality mean score of 5.6, while in the spring the mean quality score for “97-1197” was 6.0 (Tables 4, 5).

Those that had both high quality score rankings for both “spring” and “winter” periods included “Imagine/Lynx/Pegasus”, “Sonoran”, and “97-1111”. There were twelve entries that finished with overall quality means within the range of 6.0 to 6.3. Eight entries finished with overall quality scores of 4.9 or less. “Gulf annual” had an overall quality average of 2.9. “Pick YNC” hybrid had a overall quality average of 4.8 (Table 10).

### **Turfgrass Texture**

Turfgrass texture scores were assigned on six dates from December 1997 to June 1998 using the NTEP evaluation scale of 1-9. Texture values represent relative leaf width among plants within a plot. The entry effect was significant on all evaluation dates at  $P=0.001$ .

For December 1997 mean texture scores ranged from 3.0 to 7.7. “Gulf annual” had the coarsest leaves (lowest visual scores) and “Sonoran” ranked numerically first (mean = 7.7), followed closely by “95 1” and “First cut”. Both of these entries had mean December texture scores of 7.3 (Table 6). Eleven other entries had mean texture scores of 7.0. Entries with mean scores of 5.0 or less would be noticeable to the lay person as “wider than the other grasses.” “Pick YNC” had the highest numerical rank for leaf texture among the hybrid or annual ryegrass (mean = 5.3) (Table 6).

January mean turfgrass texture scores ranged from 4.0 to 8.0. The PT containing entries “First cut” and “Catalina/Winterplay” had mean texture scores of 8.0, exhibiting very fine turf texture. These were followed closely by the entries “Catalina”, “Leaderboard”, “LP 9” and “Turfstar Plus”, all which had mean values of 7.7 (Table 6). Fourteen entries had mean texture values of 5.7 or less with four having values of 4.6 or lower.

For March, entries ranked similar to that of January. The entries in the test ranged from 3.3 (“Gulf annual”) to 7.7 (“Catalina/Winterplay”) (Table 6). “Winter averages” for texture ranged from 3.4 (“Gulf annual”) to 7.4 for both the mixtures “first cut” and “Catalina/Winterplay.” Pick YNC had a “winter” texture average of 5.1 while “Barverdi annual” had a mean score of 4.4 (Table 6).

April mean texture scores ranged from 3.0 to 7.3 (Table 7). “Catalina/Winterplay”, “First cut” and “Turfstar Plus” (all mixtures containing PT) ranked in the top numerically for fine leaf texture. The ryegrasses “Charger”, “LP 9”, “Vivid/Cathedral/Select 1”, “Sonoran” and “MP 5” all had mean texture scores of 7.0 exhibiting fine turf. The “Gulf annual” was by far the coarsest grass (Table 7).

May leaf texture mean scores ranged from 3.0 to 8.3. Texture scores for entries were very similar to those previously observed in April. At the close of the test in June leaf texture expression was at a maximum, as entry means ranged from 2.0 to 8.7. The PT mixtures of “Catalina/Winterplay” ranked numerically highest with a mean score of 8.7, followed closely by the ryegrass LA20-6-PRMC and the PT mixture “First cut.” Both of these had mean June texture entries of 7.5.

Thirteen other entries had mean June texture scores in the range of 7.0 to 7.3. “Pick YNC” hybrid had a mean score of 5.0, “Barverdi annual” 3.7 and “Gulf annual” finished with a mean of 2.0 (Table 7).

Mean texture ratings were generally consistent among entries over the course of the test and “winter” and “spring” averages were very similar to the final “seasonal” averages. Basically for overall texture, the PT containing mixtures (“Catalina/Winterplay”, “First cut” and “Turfstar Plus”) had the finer looking textures. The perennial ryegrass “Leaderboard”, “Catalina”, “lp 9” and “Sonoran” were also quite fine in texture (Tables 6, 7).

## **Turfgrass Density**

Turfgrass density scores using the NTEP scale of 1-9 were assigned to plots during the months of January, May and June. On all dates the entry effect was significant at  $P=0.001$ .

In January turfgrass density scores ranged from 4.3 ("TPD") to 8.0 ("Catalina/Winterplay"). "Pick YNC" hybrid ryegrass (6.3) was much denser than "Gulf annual" (4.7), "Interim" intermediate ryegrass (4.3). The experimental perennial ryegrass accession "M59-6-663" was also very dense in appearance (mean = 7.7), closely followed by the cultivars "Laredo" and "Charger II" (means = 7.3) (Table 8).

May mean entry scores for density ranged from 2.3 to 7.7. The PT containing mixtures "First cut" and "Catalina/Winterplay" had the greatest numerical means of 7.7 followed closely by "Leaderboard" perennial ryegrass blend and the "Turf Star" plus PT mixture. Six entries in the test had mean texture values of 7.0 or greater, while ten entries had mean texture values of 5.0 or less. "Pick YNC" hybrid had a mean texture score of 5.0, while Gulf had a mean texture score of 2.3 for May (Table 8).

In June mean entry density scores ranged from 2.0 to 7.7. "Catalina/Winterplay" and "Premier II" ryegrass had mean density scores of 7.7 and 7.0, respectively. "Gulf annual" had a mean density score of 2.0. The performance of entries for visual density was fairly consistent for entries from winter to spring. The entry "M59-6-663" was very dense in the winter (mean = 7.7) which decreased slightly in the spring (mean = 6.3) to yield a seasonal average of 7.0 (Tables 7,8 and ,10).

For the entire year average, "Catalina/Winterplay" the perennial ryegrasses "M59-6-663" and "Leaderboard" had overall season mean density values of 7.0 or greater. "Pick YNC" hybrid had a mean density value of 5.5 compared to "Gulf annual" which scored a seasonal average of 3.4 (Table 10).

## **Turfgrass Uniformity**

Turfgrass uniformity is a visual estimate of how homogeneous a plot appears in terms of overall general appearance, color and texture. A turf can be light green in color with wide leaf blades and not exceptionally dense. If it is uniform in its appearance it still receives an appropriately high uniformity score. Uniformity values were assigned to plots during the months of March, April, May and June using the NTEP 1-9 progressive scale. On all evaluation dates, the overseed "entry effect" was significant at the  $P=0.001$  value.

March uniformity mean scores among entries ranged from 3.3 to 7.0 (Table 9). The entries "TPD", "Gulf annual" and "Interim" had mean uniformity values of 3.7 or less. The PT containing mixture of "Catalina/Winterplay" had the largest numerical mean score of 7.0. Five other entries had identical mean value scores of 6.3. These included "Paragon", "Majesty", "Leaderboard", "Imagine/Lynx/Pegasus" and "Catalina." There were thirty entries which had mean uniformity scores of 5.3 or less. Of these, twelve had mean March uniformity scores of 4.7 or less (Table 9).

As daytime temperatures increased, perennial ryegrass germplasm appeared more uniform than the PT containing mixtures, although there was a noticeable decline in uniformity in April. The entries "97-3807", "97-3809" and "97-1164" had mean uniformity values of 6.0 at this time (Table 9). The PT containing mixtures of "First cut", "Turfstar Plus" and "Catalina/Winterplay" had uniformity values of 5.3, 4.7 and 4.3, respectively. This illustrates the onset of the difference of appearance within a perennial ryegrass/*Poa trivialis* mixture in the spring (turf is unstressed). "Pick YNC" hybrid had a mean April uniformity score of 4.3, while "Gulf annual" had a mean value of 2.7 (Table 9).

In June (close of the test), mean entry scores for uniformity ranged from 2.0 to 6.0. "Paragon", "97-1149", "97-1197" and "Catalina/Winterplay" had mean uniformity values of 6.0. Twenty entries had mean uniformity scores of 4.7 or less. Six of these scored mean uniformity values of 3.7 or less (Table 9). The "spring" uniformity values (averages of April, May and June) ranged from 2.2 to 5.9. "Gulf annual" and "Interim" hybrid ryegrass had average spring uniformity scores of 2.2 and 2.4, respectively. The entries "97-3809", "97-3807", "97-1142" and "Premier II" were among the most uniform appearing plots throughout the spring, although the ratings were not exceptionally high (Table 9).

The percent plot which exhibited necrotic brown tissue in June was used as a measure of transition (decline of the cool season overseed grass). Entry means ranged from 10% necrosis to 85% necrosis (data not shown). The following overseed entries had the following percent plot necrosis. "Gulf annual" (85%), "Interim" intermediate ryegrass (85%), "Vision Quest" (38%), "Barverdi annual" (38%), "TPD" (28%), "Pick YNC hybrid" (27%), "EP37" (10%), "EPH" (10%).

All other entries had no necrosis at the close of the test. The LSD value for the percent plot necrosis in June 1998 was (8%).

## CONCLUSIONS

1. New experimental accessions of perennial ryegrass were darker in color than most of the commercially available germplasm included in this test.
2. Ryegrass germplasm had better turfgrass quality after April, than did mixtures of perennial ryegrass with Poa trivialis.
3. Poa trivialis performed well in December, January and March. General appearance for total plot leaf texture was best generally among the Poa trivialis containing mixtures.
4. Hybrid (or intermediate) ryegrasses (L. which are crosses between perennial X annual ryegrass, were generally closer to annual ryegrass in performance.
5. L. hybridum (Pick YNC) had better turf performance on most occasions when compared to annual ryegrass alone.
6. Intermediate and annual ryegrasses did show signs of decline in June (more so than ryegrass or Poa trivialis blends), which was desirable from a transition standpoint.

Appendix Table A. Overseed entries included in 1997-1998 overseed turfgrass trials, University of Arizona.

<u>ENTRY</u>	<u>COMPOSITION<sup>1</sup></u>	<u>SEED RATE LBS/1000 FT<sup>2</sup></u>
1. Catalina	100% PR	19
2. Catalina/Winterplay	80% Catalina PR/20% Winter Play PT	15
3. Sonoran	100% PR	19
4. Charger II	100% PR	19
5. MP-5	100% PR	19
6. EP 37	100% PR	19
7. LP 9	100% PR	19
8. Citation II	100% PR	19
9. Majesty	100% PR	19
10. Divine	100% PR	19
11. Gulf	100% AR	19
12. Pick YNC	100% LH	19
13. Leaderboard	40% Panther PR/30% Omega PR/30% Mardi Gras PR	19
14. Paragon	100% PR	19
15. Laredo	100% PR	19
16. Interim	100% AR	19
17. First cut	85% VIP III PR/15% Stardust PT	15
18. Vision Quest	100% PR	19
19. Imag/Lynx/Peg	33% Imagine PR/33% Lynx PR/33% Pegasus PR	19
20. Barverdi	100% AR	19
21. 95-1	100% PR	19
22. Pro-Select	100% PR (blend?)	19
23. Premier II	100% PR	19
24. Turfstar Plus	90% PR/10% PT	15
25. EPH	100% PR or LH?	19
26. TPD	100% PR	19
27. WX5-195 HF	100% PR	19
28. Vivid/Cath/Sel I	33% Vivid PR/33% Cathedral PR/33% Select I PR	19
29. Select I	100% PR	19
30. 97-1157	100% PR	19
31. 97-1107	100% PR	19
32. 97-1143	100% PR	19
33. 97-1108	100% PR	19
34. 97-1159	100% PR	19
35. 97-1164	100% PR	19
36. 97-1109	100% PR	19
37. 97-1104	100% PR	19
38. 97-1111	100% PR	19
39. 97-1106	100% PR	19
40. 97-1149	100% PR	19
41. 97-1150	100% PR	19
42. 97-1142	100% PR	19
43. 97-1197	100% PR	19

44. 97-3809	100% PR	19
45. 97-1196	100% PR	19
46. 97-3807	100% PR	19
47. 97-3806	100% PR	19
48. 97-3808	100% PR	19
49. P68-7-21	100% PR	19
50. M59-6-663	100% PR	19
51. LA20-6-PRMC	100% PR	19

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<sup>1</sup>Composition by species type

PR = perennial ryegrass/*Lolium perenne*  
AR = annual ryegrass/*Lolium multiflorum*  
PT = roughstalk bluegrass/*Poa trivialis*  
LH = hybrid or intermediate ryegrass/*Lolium hybridum*

<sup>2</sup> Seed rate in lbs seed/1000 ft<sup>2</sup>.



Table 1. Mean percent<sup>1</sup> plot<sup>2</sup> cover of overseed entries 1997-1998. University of Arizona.

<u>ENTRY</u>	<u>MEAN</u>
Laredo	98
Interim	98
WX5-195 HF	98
Cat/wntreply	97
97-1159	97
95-1	96
Vision Quest	96
Imgn/Lynx/Pgss	96
Leaderboard	95
EPH	94
Majesty	94
Sonoran	93
Barverdi	93
97-1111	93
M59-6-663	93
First cut	93
Premier II	93
Gulf	92
Pro-Select	92
Catalina	92
97-3808	92
LP 9	91
Turfstar plus	90
97-1143	90
Pick .hybred YNC	89
EP 37	88
Select 1	88
97-1149	88
Charger II	87
Vivd/Cthd2/Slct 1	87
LA20-6-PRMC	87
P68-7-21	86
Citation II	84
97-1104	83
97-1107	83
97-3806	83
97-1109	82
Divine	82
TPD	82
97-1142	80
97-1197	80
Paragon	80
97-1150	78
MP 5	78
97-3809	78
97-1196	78
97-1157	77
97-3807	75
97-1106	72
97-1164	68
97-1108	53
TEST MEAN <sup>3</sup>	87
LSD VALUE <sup>4</sup>	18

<sup>1</sup>Percent of plot with established turf December 17, 1997.

<sup>2</sup>Values are the means of three replications.

<sup>3</sup>Test Mean = mean of all entries.

<sup>4</sup>LSD Value = mean separation statistic. Entries whose means differ greater than the LSD value are statistically different from each other.

Table 2. Mean<sup>1</sup> turfgrass color<sup>2</sup> scores of overseed entries 1997-1998. University of Arizona.

<u>ENTRY</u>	<u>DEC</u>	<u>JAN</u>	<u>MAR</u>	<u>WINTER AVG</u>
97-1143	8.5	8.0	8.0	7.9
97-1159	7.7	7.7	7.3	7.6
97-1111	7.7	7.7	7.0	7.4
97-1109	6.7	7.7	7.7	7.3
97-1150	6.7	7.0	8.0	7.2
M59-6-663	7.7	6.0	8.0	7.2
97-1107	7.0	7.3	7.3	7.2
97-1106	6.3	7.3	7.7	7.1
97-1142	7.0	6.3	8.0	7.1
97-1197	6.7	7.3	7.3	7.1
97-1108	6.3	7.0	7.7	7.0
97-3809	5.5	7.3	7.7	7.0
97-1196	7.0	7.3	6.7	7.0
97-3808	6.0	7.0	7.3	6.9
97-1164	6.5	6.3	7.7	6.8
97-1157	6.3	7.3	6.7	6.8
97-3806	7.5	6.7	6.7	6.8
95-1	6.0	6.7	7.0	6.6
97-1104	5.3	6.7	7.7	6.6
Imgn/Lynx/Pgss	6.7	6.7	6.0	6.4
Majesty	6.7	6.0	6.7	6.4
97-3807	6.5	6.0	7.0	6.4
97-1149	7.0	6.3	6.3	6.4
LP 9	7.0	6.0	6.0	6.3
P68-7-21	6.0	6.7	6.3	6.3
EP 37	6.3	5.7	6.3	6.1
Premier II	6.0	6.0	6.3	6.1
Cat/wntreply	6.7	6.0	5.0	5.9
Sonoran	5.7	6.0	6.0	5.9
Select I	5.7	6.0	6.0	5.9
LA20-6-PRMC	5.0	6.7	6.0	5.9
Catalina	5.7	5.7	6.3	5.9
Paragon	5.7	6.0	6.0	5.9
WX5-195 HF	6.0	5.7	6.0	5.9
Divine	5.7	6.0	5.7	5.8
Charger II	5.7	5.7	5.7	5.7
Vivd/Cathd2/Slct 1	5.3	5.7	6.0	5.7
MP 5	5.0	6.7	5.0	5.6
Turfstar Plus	5.7	6.0	4.7	5.4
Leaderboard	5.7	5.3	5.3	5.4
Pro-Select	5.3	5.7	5.3	5.4
Citation II	5.5	5.3	5.3	5.4
Pick hybrid YNC	5.7	5.7	4.7	5.3
Laredo	5.3	5.7	5.0	5.3
EPH	5.0	5.3	5.3	5.2
First cut	4.7	5.7	5.0	5.1
TPD	4.3	5.7	5.0	5.0
Vision quest	5.0	4.7	5.0	4.9
Gulf	4.0	4.0	3.3	3.8
Interim	3.7	4.0	3.7	3.8
Barverdi	4.0	4.0	3.3	3.8
TEST MEAN <sup>3</sup>	5.8	5.8	5.6	5.7
LSD VALUE <sup>4</sup>	1.5	1.3	1.5	1.2

<sup>1</sup>Values are the mean of three replications.

<sup>2</sup>Color 1-9. 1 = dead, 9 = darkest green.

<sup>3</sup>Test Mean = mean of all entries.

<sup>4</sup>LSD Value = mean separation statistic. Entries whose means differ greater than the LSD value are statistically different from each other.

Table 3. Mean<sup>1</sup> turfgrass color<sup>2</sup> scores of overseed entries 1997-1998. University of Arizona.

<u>ENTRY</u>	<u>APR</u>	<u>MAY</u>	<u>JUNE</u>	<u>SPRING AVG</u>
97-1197	8.0	7.7	7.0	7.6
97-1142	8.0	7.7	6.7	7.4
97-1143	7.3	7.7	6.7	7.2
97-3809	7.7	7.0	7.0	7.2
95-1	7.7	6.7	7.0	7.1
97-1150	7.3	6.7	7.3	7.1
97-1109	8.0	6.3	6.7	7.0
97-1196	7.0	7.0	7.0	7.0
M59-6-663	7.7	7.0	6.3	7.0
97-3808	7.3	7.0	6.3	6.9
97-1108	7.3	6.7	6.3	6.8
97-1111	6.7	7.0	6.7	6.8
97-1157	6.3	6.7	7.0	6.7
97-1159	6.3	6.7	7.0	6.7
97-3807	6.7	6.7	6.3	6.6
97-1106	7.0	6.7	6.0	6.6
97-1104	7.0	6.3	6.0	6.4
97-1164	7.0	6.3	5.7	6.3
97-1107	6.3	6.0	6.3	6.2
97-3806	6.3	6.7	5.7	6.2
Premier II	6.7	6.0	6.5	6.2
97-1149	6.0	6.0	6.5	6.1
Majesty	6.0	6.3	6.0	6.1
Paragon	5.7	6.0	6.3	6.0
Select I	6.0	6.3	5.7	6.0
Citation II	5.7	6.3	5.7	5.9
Imgn/Lynx/Pgss	6.0	5.7	5.7	5.8
Catalina	5.3	5.7	5.7	5.6
LA20-6-PRMC	6.0	5.3	5.5	5.6
LP 9	6.0	5.0	5.7	5.6
Sonoran	5.0	5.7	5.7	5.4
EP 37	5.3	6.0	5.0	5.4
P68-7-21	5.3	5.7	5.3	5.4
Leaderboard	5.3	5.3	5.3	5.3
WX5-195 HF	5.3	5.7	5.0	5.3
Vivd/Cthd2/Slct1	5.0	5.7	5.3	5.3
Charger II	5.3	5.3	5.0	5.2
Divine	4.7	5.3	5.7	5.2
Pro-Select	4.7	5.3	5.5	5.1
Laredo	5.0	4.7	5.3	5.0
Cat/wntreply	4.7	5.0	5.0	4.9
MP 5	4.3	5.0	4.7	4.7
TPD	4.0	5.0	5.0	4.7
Turfstar plus	3.7	5.3	4.7	4.6
First cut	4.0	4.7	4.7	4.4
EPH	4.3	4.7	4.3	4.4
Pick hybrid YNC	3.7	4.3	4.0	4.0
Vision quest	4.0	4.0	3.3	3.8
Barverdi	3.0	3.7	3.0	3.2
Interim	2.7	3.0	2.0	2.6
Gulf	2.0	3.0	1.7	2.2
TEST MEAN <sup>3</sup>	5.8	5.8	5.6	5.7
LSD VALUE <sup>4</sup>	1.5	1.3	1.5	1.2

<sup>1</sup>Values are the mean of three replications.

<sup>2</sup>Color 1-9. 1 = dead, 9 = darkest green.

<sup>3</sup>Test Mean = mean of all entries.

<sup>4</sup>LSD Value = mean separation statistic. Entries whose means differ greater than the LSD value are statistically different from each other.

Table 4. Mean<sup>1</sup> turfgrass quality<sup>2</sup> scores overseed fairway entries 1997-1998. University of Arizona

<u>ENTRY</u>	<u>DEC</u>	<u>JAN</u>	<u>MAR</u>	<u>WINTER AVG</u>
Catalina	7.3	6.7	6.3	6.8
M59-6-663	7.3	7.3	5.7	6.8
Cat/wntprly	6.3	7.7	6.3	6.8
First cut	7.0	7.3	6.0	6.8
Imgn/Lynx/Pgss	6.7	7.0	6.7	6.8
Sonoran	6.7	6.7	6.7	6.7
97-1111	7.0	7.0	5.7	6.6
LP 9	7.0	6.7	6.0	6.6
Leaderboard	7.0	7.0	5.7	6.6
WX5-195 HF	7.7	6.7	5.3	6.6
Laredo	6.7	6.7	5.7	6.3
Turfstar plus	7.0	7.0	5.0	6.3
97-1159	7.0	7.0	5.3	6.3
Charger II	6.3	6.7	5.7	6.2
Pro-Select	7.0	6.7	5.0	6.2
Select 1	6.3	6.7	5.7	6.2
Majesty	6.0	6.7	6.0	6.2
Premier II	6.7	7.0	5.0	6.2
EP 37	6.7	6.3	5.3	6.1
97-1107	6.0	6.3	6.0	6.1
95-1	6.3	6.0	5.7	6.0
Divine	5.7	6.3	5.7	5.9
Vivd/Cthd2/Slct1	6.3	6.0	5.3	5.9
97-1104	6.3	5.7	5.7	5.9
Paragon	5.3	6.7	5.3	5.8
97-3808	6.0	6.3	5.3	5.8
LA20-6-PRMC	5.7	6.7	5.0	5.8
97-1157	5.7	5.7	5.7	5.7
P68-7-21	6.0	5.7	5.3	5.7
Citation II	6.5	6.0	5.0	5.6
97-3806	6.5	6.0	5.0	5.6
MP 5	4.5	7.0	4.7	5.6
EPH	6.3	6.0	4.3	5.6
97-1149	6.0	6.3	4.7	5.6
97-1150	6.0	5.3	5.3	5.6
97-1197	5.7	6.0	5.0	5.6
Pick hybrid YNC	5.7	6.3	4.7	5.6
97-1143	6.5	6.0	4.7	5.4
97-1142	5.0	6.3	5.0	5.4
97-1196	6.0	5.7	5.0	5.4
97-3807	5.0	5.7	5.0	5.3
97-1109	5.3	5.0	5.3	5.2
97-1106	5.7	5.3	4.3	5.1
97-1108	5.3	5.3	4.3	5.0
97-3809	5.5	5.0	4.7	5.0
97-1164	5.5	5.0	4.3	4.9
Vision quest	5.0	5.7	4.0	4.9
Barverdi	4.7	5.3	4.0	4.7
TPD	4.0	4.3	3.3	3.9
Interim	3.7	4.3	3.3	3.8
Gulf	3.3	4.0	3.0	3.4
TEST MEAN <sup>3</sup>	6.0	6.2	5.2	5.8
LSD VALUE <sup>4</sup>	1.7	1.5	1.4	1.2

<sup>1</sup>Values are the mean of three replications.

<sup>2</sup>Quality 1-9. 1 = dead, 9 = best possible.

<sup>3</sup>Test Mean = mean of all entries.

<sup>4</sup>LSD Value = mean separation statistic. Entries whose means differ greater than the LSD value are statistically different from each other.

Table 5. Mean<sup>1</sup> turfgrass quality<sup>2</sup> scores overseed fairway entries 1997-1998. University of Arizona.

<u>ENTRY</u>	<u>DEC</u>	<u>JAN</u>	<u>MAR</u>	<u>WINTER AVG</u>
97-1197	5.7	6.3	6.0	6.0
Imgn/Lynx/Pgss	5.3	6.3	6.0	5.9
97-1107	5.7	6.0	6.0	5.9
97-1111	5.0	6.3	6.3	5.9
Sonoran	5.7	6.7	5.3	5.9
Premier II	5.7	6.3	6.0	5.9
97-3809	5.7	6.0	6.0	5.9
97-3808	5.7	6.0	6.0	5.9
Leaderboard	5.0	6.3	6.0	5.8
Paragon	5.0	6.0	6.3	5.8
Turfstar plus	4.7	7.0	6.0	5.8
Vivd/Cthd2/Slet1	5.3	6.3	5.7	5.8
95-1	5.3	6.0	6.0	5.8
Majesty	5.3	6.0	5.7	5.7
Divine	5.3	6.0	5.7	5.7
97-1196	4.7	6.3	6.0	5.7
Citation II	4.3	6.7	5.7	5.6
97-1157	5.3	6.0	5.3	5.6
97-1150	5.0	6.0	5.7	5.6
97-1142	5.0	6.3	5.3	5.6
97-3806	4.7	6.3	5.7	5.6
LA20-6-PRMC	4.7	6.3	6.0	5.5
LP 9	5.7	5.7	5.0	5.4
Select 1	5.0	6.0	5.3	5.4
P68-7-21	5.3	6.0	5.0	5.4
M59-6-663	4.0	6.3	6.0	5.4
Catalina	5.0	5.0	6.0	5.3
Charger II	4.7	5.7	5.7	5.3
First cut	4.7	6.0	5.3	5.3
Pro-Select	5.0	5.7	5.3	5.3
97-1143	4.0	6.0	6.0	5.3
97-1159	4.0	6.3	5.7	5.3
97-1164	5.0	6.0	5.0	5.3
97-1104	5.0	6.0	5.0	5.3
97-1106	4.7	6.0	5.3	5.3
97-3807	5.3	5.7	5.0	5.3
97-1109	5.0	5.3	5.3	5.2
97-1149	4.7	6.0	5.5	5.2
Cat/wntprly	4.3	6.0	5.3	5.2
MP 5	4.3	5.7	5.5	5.1
WX5-195 HF	4.7	5.7	5.0	5.1
97-1108	4.0	6.0	4.7	4.9
EP 37	4.0	5.7	4.3	4.7
Laredo	4.0	5.3	4.7	4.7
Pick hybrid YNC	3.3	5.0	4.0	4.1
EPH	3.7	5.0	3.7	4.1
Vision quest	2.7	4.0	4.0	3.6
TPD	2.7	4.0	2.7	3.1
Barverdi	2.3	4.0	2.7	3.0
Interim	2.3	3.0	2.0	2.4
Gulf	2.0	3.0	2.0	2.3
TEST MEAN <sup>3</sup>	4.6	5.8	5.2	5.2
LSD VALUE <sup>4</sup>	1.3	1.3	1.5	1.1

<sup>1</sup>Values are the mean of three replications.

<sup>2</sup>Quality 1-9. 1 = dead, 9 = best possible.

<sup>3</sup>Test Mean = mean of all entries.

<sup>4</sup>LSD Value = mean separation statistic. Entries whose means differ greater than the LSD value are statistically different from each other.

Table 6. Mean<sup>1</sup> turfgrass texture<sup>2</sup> scores overseed fairway entries 1997-1998. University of Arizona.

<u>ENTRY</u>	<u>DEC</u>	<u>JAN</u>	<u>MAR</u>	<u>WINTER AVG</u>
First cut	7.3	8.0	7.0	7.4
Cat/wnttrply	6.7	8.0	7.7	7.4
Catalina	7.0	7.7	7.0	7.2
LP 9	7.0	7.7	6.7	7.1
Leaderboard	7.0	7.7	6.7	7.1
Sonoran	7.7	7.0	6.3	7.0
Imgn/Lynx/Pgss	6.7	7.0	7.3	7.0
95-1	7.3	7.0	6.7	7.0
MP 5	7.0	7.0	6.7	6.9
Paragon	7.0	7.0	6.7	6.9
Turfstar plus	6.7	7.7	6.3	6.9
Charger II	6.3	7.3	6.7	6.8
WX5-195 HF	7.0	7.0	6.3	6.8
Select 1	7.0	7.3	6.0	6.8
M59-6-663	7.0	7.3	6.0	6.8
97-1159	6.0	7.0	6.7	6.6
Majesty	6.3	6.7	6.7	6.6
Laredo	7.0	7.0	5.7	6.6
EP 37	6.7	6.7	6.0	6.4
Premier II	6.7	6.7	6.0	6.4
Divine	5.7	7.0	6.3	6.3
Pro-Select	6.3	7.0	5.7	6.3
Vivd/Cthd2/Slct1	6.3	6.3	6.3	6.3
97-1111	6.7	6.0	6.3	6.3
P68-7-21	7.0	6.3	5.7	6.3
LA20-6-PRMC	6.7	6.0	6.3	6.3
97-1157	6.3	6.0	6.3	6.2
97-1104	6.3	6.0	6.3	6.2
97-1197	6.3	6.3	6.0	6.2
97-3808	6.5	6.3	6.0	6.2
97-3806	6.5	6.0	6.3	6.2
97-1150	7.0	5.3	6.0	6.1
97-3807	6.0	6.3	5.7	6.1
97-1107	6.0	6.0	6.0	6.0
97-1106	6.7	6.0	5.3	6.0
97-1149	6.0	5.7	6.3	6.0
97-1196	6.0	6.3	5.7	6.0
Citation II	6.0	6.0	6.0	5.9
97-1164	6.5	5.7	5.7	5.9
97-1142	6.0	6.0	5.7	5.9
97-3809	6.0	5.7	6.0	5.8
97-1108	6.0	5.3	5.7	5.6
97-1109	5.7	5.3	5.3	5.4
EPH	6.0	5.3	4.7	5.3
97-1143	5.0	5.3	5.3	5.3
Pick hybred YNC	5.3	5.3	4.7	5.1
Vision quest	5.0	4.7	3.7	4.4
Barverdi	4.3	5.0	3.7	4.3
TPD	4.0	4.3	4.0	4.1
Interim	3.7	4.3	3.7	3.9
Gulf	3.0	4.0	3.3	3.4
TEST MEAN <sup>3</sup>	6.3	6.3	5.9	6.2
LSD VALUE <sup>4</sup>	1.2	1.2	1.0	0.7

<sup>1</sup>Values are the mean of three replications.

<sup>2</sup>Texture 1-9. 1 = dead, 9 = best possible.

<sup>3</sup>Test Mean = mean of all entries.

<sup>4</sup>LSD Value = mean separation statistic. Entries whose means differ greater than the LSD value are statistically different from each other.

Table 7. Mean<sup>1</sup> turfgrass texture<sup>2</sup> scores overseed fairway entries 1997-1998. University of Arizona.

<u>ENTRY</u>	<u>APR</u>	<u>MAY</u>	<u>JUNE</u>	<u>SPRING AVG</u>
Cat/wntprply	7.3	8.3	8.7	8.1
First cut	7.0	8.0	7.3	7.4
Leaderboard	6.7	7.7	7.3	7.2
Turfstar plus	7.0	7.3	7.5	7.2
Sonoran	7.0	7.0	7.3	7.1
Charger II	7.0	7.0	7.0	7.0
MP 5	7.0	7.0	7.0	7.0
LP 9	7.0	7.3	6.7	7.0
LA20-6-PRMC	6.7	7.0	7.5	6.9
Catalina	6.7	7.3	6.7	6.9
95-1	6.7	6.7	7.0	6.8
P68-7-21	6.7	6.7	7.0	6.8
Premier II	6.7	6.7	7.0	6.8
Pro-Select	6.7	6.7	7.0	6.7
Majesty	6.3	6.7	7.0	6.7
Divine	6.7	6.7	6.7	6.7
Vivd/Cthd2/Slet1	7.0	6.3	6.7	6.7
EP 37	6.3	7.0	6.3	6.6
WX5-195 HF	6.3	6.7	6.7	6.6
Select 1	6.7	6.3	6.7	6.6
97-1111	6.7	6.0	7.0	6.6
Citation II	6.3	6.7	6.7	6.6
Paragon	6.7	6.3	6.7	6.6
97-1107	6.3	6.3	7.0	6.6
M59-6-663	6.3	6.3	7.0	6.6
97-1104	6.0	7.0	6.3	6.4
97-3806	6.7	6.3	6.5	6.4
Imgn/Lynx/Pgss	6.0	6.3	6.7	6.3
97-1159	6.7	6.3	6.0	6.3
97-1149	6.3	6.3	6.5	6.3
97-1142	6.0	6.3	6.7	6.3
97-3809	6.3	6.0	6.7	6.3
Laredo	6.3	6.0	6.3	6.2
97-1150	6.0	6.0	6.7	6.2
97-1197	5.7	6.7	6.3	6.2
97-1109	5.7	6.3	6.3	6.1
97-1157	6.0	6.3	6.0	6.1
97-1164	6.0	6.0	6.3	6.1
97-1106	6.0	5.7	6.7	6.1
97-3807	6.0	6.0	6.3	6.1
97-3808	5.7	6.3	6.3	6.1
97-1143	6.3	5.7	6.0	6.0
97-1108	6.0	5.7	6.3	6.0
97-1196	5.7	6.0	5.7	5.8
Pick hybrid YNC	4.7	5.3	5.0	5.0
EPH	4.3	5.7	4.7	4.9
Vision quest	3.7	4.7	5.0	4.4
Barverdi	4.0	5.0	3.7	4.2
TPD	4.0	4.3	3.0	3.8
Interim	3.7	3.3	3.0	3.3
Gulf	3.0	3.0	2.0	2.7
TEST MEAN <sup>3</sup>	6.1	6.3	6.3	6.2
LSD VALUE <sup>4</sup>	0.9	1.0	1.0	0.6

<sup>1</sup>Values are the mean of three replications.

<sup>2</sup>Texture 1-9. 1 = dead, 9 = best possible.

<sup>3</sup>Test Mean = mean of all entries.

<sup>4</sup>LSD Value = mean separation statistic. Entries whose means differ greater than the LSD value are statistically different from each other.

Table 8. Mean<sup>1</sup> turfgrass density<sup>2</sup> scores overseed fairway entries 1997-1998. University of Arizona.

<u>ENTRY</u>	<u>JAN</u>	<u>MAY</u>	<u>JUNE</u>	<u>SPRING AVG</u>
Cat/wntprply	8.0	7.7	7.7	7.7
Leaderboard	7.0	7.3	6.7	7.0
First cut	7.0	7.7	6.0	6.8
Turfstar plus	6.7	7.3	6.5	6.8
Premier II	6.7	6.7	7.0	6.7
Catalina	6.0	6.7	6.3	6.5
LP 9	6.3	7.0	6.0	6.5
95-1	6.7	6.3	6.7	6.5
97-1111	5.7	6.7	6.3	6.5
97-1150	4.7	6.3	6.7	6.5
Sonoran	6.7	6.7	6.0	6.3
Majesty	6.7	6.3	6.3	6.3
Divine	6.3	6.7	6.0	6.3
Paragon	5.7	6.3	6.3	6.3
Select 1	7.0	7.0	5.7	6.3
97-1109	4.7	6.3	6.3	6.3
P68-7-21	6.3	6.7	6.0	6.3
M59-6-663	7.7	6.3	6.3	6.3
LA20-6-PRMC	6.0	6.7	6.0	6.3
Charger II	7.3	6.3	6.0	6.2
MP 5	6.3	6.7	5.0	6.2
Vivd/Cthd2/Slct1	6.7	6.3	6.0	6.2
97-1107	6.0	6.0	6.3	6.2
97-1143	5.0	6.0	6.3	6.2
97-1159	6.0	6.0	6.3	6.2
97-1142	5.3	6.3	6.0	6.2
97-1197	5.0	6.3	6.0	6.2
Imgn/Lynx/Pgss	7.0	6.3	5.7	6.0
WX5-195 HF	6.3	6.0	6.0	6.0
97-1104	5.3	6.3	5.7	6.0
97-3809	5.0	6.0	6.0	6.0
97-1196	5.3	6.0	6.0	6.0
Citation II	6.0	6.0	5.7	5.8
Laredo	7.3	6.0	5.7	5.8
97-1157	6.0	6.3	5.3	5.8
97-1149	6.0	6.0	6.0	5.8
97-3807	5.0	6.0	5.7	5.8
97-3808	5.0	6.0	5.7	5.8
EP 37	5.7	6.3	5.0	5.7
Pro-Select	6.0	6.0	5.3	5.7
97-1106	5.7	5.7	5.3	5.5
97-3806	5.7	6.0	5.0	5.5
97-1164	5.0	5.7	5.0	5.3
97-1108	5.7	5.0	5.3	5.2
Pick hybrid YNC	6.3	5.0	4.3	4.7
EPH	5.7	4.7	4.3	4.5
Vision quest	5.7	4.3	4.3	4.3
Barverdi	5.3	4.0	3.7	3.8
TPD	4.3	3.7	3.0	3.3
Interim	4.3	3.0	3.0	3.0
Gulf	4.7	2.3	2.0	2.2
TEST MEAN <sup>3</sup>	6.0	6.0	5.6	5.8
LSD VALUE <sup>4</sup>	1.5	1.0	1.2	0.9

<sup>1</sup>Values are the mean of three replications.

<sup>2</sup>Density 1-9. 1 = dead, 9 = best possible.

<sup>3</sup>Test Mean = mean of all entries.

<sup>4</sup>LSD Value = mean separation statistic. Entries whose means differ greater than the LSD value are statistically different from each other.



Table 9. Mean<sup>1</sup> turfgrass uniformity<sup>2</sup> scores overseed fairway entries 1997-1998. University of Arizona.

<u>ENTRY</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUNE</u>	<u>SPRING AVG</u>
97-3809	5.0	6.0	6.0	5.7	5.9
97-3807	5.3	6.0	5.7	5.3	5.7
97-1142	5.0	5.3	5.7	5.7	5.6
Premier II	5.0	5.7	5.3	5.5	5.5
Select 1	5.3	5.3	5.7	5.3	5.4
97-1157	6.0	5.7	5.3	5.3	5.4
Paragon	6.3	5.0	5.3	6.0	5.4
97-1106	5.7	5.7	5.3	5.3	5.4
97-1197	5.3	5.0	5.3	6.0	5.4
Citation II	5.7	5.3	5.7	5.0	5.3
Vivd/Cthd2/Slct1	5.3	5.7	5.0	5.3	5.3
97-1143	4.7	4.7	5.7	5.7	5.3
97-1164	4.7	6.0	5.3	4.7	5.3
97-3808	5.7	5.3	5.3	5.3	5.3
97-3806	4.7	5.3	5.0	5.5	5.3
97-1108	4.7	5.7	5.3	4.7	5.2
97-1149	4.3	5.3	4.7	6.0	5.2
97-1196	5.0	4.7	5.3	5.7	5.2
First cut	5.7	5.3	5.3	5.0	5.2
MP 5	5.0	5.7	5.0	4.5	5.2
97-1107	5.3	5.0	5.3	5.0	5.1
97-1109	5.7	5.3	4.7	5.3	5.1
97-1111	5.7	5.3	5.0	5.0	5.1
95-1	5.3	4.3	5.3	5.7	5.1
M59-6-663	6.0	4.7	5.0	5.7	5.1
Cat/wntprly	7.0	4.3	4.7	6.0	5.0
Sonoran	6.0	5.3	5.0	4.7	5.0
Turfstar plus	6.0	4.7	5.3	5.0	5.0
97-1159	5.0	4.3	5.3	5.3	5.0
97-1104	6.0	4.7	5.7	4.7	5.0
97-1150	5.3	4.7	5.0	5.0	5.0
Majesty	6.3	4.7	4.7	5.3	4.9
Pro-Select	5.0	4.7	5.0	5.0	4.9
LA20-6-PRMC	5.3	4.7	4.7	5.5	4.8
Catalina	6.3	4.7	4.7	5.0	4.8
P68-7-21	6.0	5.3	4.3	4.7	4.8
Divine	5.3	4.7	4.3	4.7	4.6
EP 37	5.3	4.3	4.7	4.3	4.4
Leaderboard	6.3	4.0	4.3	5.0	4.4
Charger II	5.7	4.7	4.0	4.3	4.3
Imgn/Lynx/Pgss	6.3	4.0	4.7	4.3	4.3
WX5-195 HF	6.0	4.3	4.3	4.3	4.3
LP 9	5.3	4.3	4.0	4.3	4.2
Pick hybrid YNC	4.3	4.3	3.7	4.3	4.1
Laredo	5.7	4.0	4.0	4.0	4.0
EPH	4.0	3.7	3.7	3.7	3.7
TPD	3.3	3.3	3.0	3.7	3.3
Vision quest	4.0	3.0	3.3	3.3	3.2
Barverdi	4.0	3.3	3.3	3.0	3.2
Interim	3.7	2.7	2.7	2.0	2.4
Gulf	3.7	2.7	2.0	2.0	2.2
TEST MEAN <sup>3</sup>	5.3	4.8	4.8	4.8	4.8
LSD VALUE <sup>4</sup>	1.6	1.1	1.1	1.2	0.8

<sup>1</sup>Values are the mean of three replications.

<sup>2</sup>Uniformity scores 1-9. 1 = dead, 9 = best.

<sup>3</sup>Test Mean = mean of all entries.

<sup>4</sup>LSD Value = mean separation statistic. Entries whose means differ greater than the LSD value are statistically different from each other.

Table 10. Yearly mean<sup>1</sup> color, quality, density and texture scores<sup>2</sup> 1997-1998 overseed trials. University of Arizona.

<u>ENTRY</u>	<u>COLOR</u>	<u>ENTRY</u>	<u>QUALITY</u>	<u>ENTRY</u>	<u>DENSITY</u>	<u>ENTRY</u>	<u>TEXTURE</u>
97-1143	7.6	Imgn/Lynx/Pgss	6.3	Cat/wntnrply	7.8	Cat/wntnrply	7.8
97-1197	7.3	Sonoran	6.3	Leaderboard	7.0	First cut	7.4
97-1142	7.3	97-1111	6.2	M59-6-663	7.0	Leaderboard	7.2
97-1109	7.2	Leaderboard	6.2	First cut	6.9	Catalina	7.1
97-1150	7.2	M59-6-663	6.1	Charger II	6.8	Turfstar plus	7.1
97-1159	7.1	Catalina	6.1	Turfstar plus	6.8	Sonoran	7.1
97-1111	7.1	First cut	6.1	Premier II	6.7	LP 9	7.1
97-3809	7.1	Premier II	6.1	Select 1	6.7	MP 5	6.9
M59-6-663	7.1	Turfstar plus	6.1	Laredo	6.6	Charger II	6.9
97-1196	7.0	Cat/wntnrply	6.0	95-1	6.6	95-1	6.9
97-1108	6.9	LP 9	6.0	Sonoran	6.5	Paragon	6.7
97-3808	6.9	97-1107	6.0	Majesty	6.5	Imgn/Lynx/Pgss	6.7
95-1	6.8	Majesty	5.9	Imgn/Lynx/Pgss	6.5	WX5-195 HF	6.7
97-1106	6.8	95-1	5.9	LP 9	6.4	Select 1	6.7
97-1157	6.7	WX5-195 HF	5.8	Vivd/Cthd2/Slct1	6.4	M59-6-663	6.7
97-1107	6.7	Vivd/Cthd2/Slct1	5.8	Divine	6.3	LA20-6-PRMC	6.6
97-1164	6.6	Select 1	5.8	P68-7-21	6.3	Majesty	6.6
97-1104	6.5	97-3808	5.8	Catalina	6.3	Premier II	6.6
97-3807	6.5	97-1159	5.8	MP 5	6.3	P68-7-21	6.6
97-3806	6.5	Charger II	5.8	WX5-195 HF	6.2	Pro-Select	6.5
Majesty	6.3	Divine	5.8	LA20-6-PRMC	6.2	EP 37	6.5
97-1149	6.3	Paragon	5.8	97-1107	6.1	Divine	6.5
Premier II	6.1	Pro-Select	5.8	97-1159	6.1	Vivd/Cthd2/Slct1	6.5
Imgn/Lynx/Pgss	6.1	97-1197	5.8	97-1111	6.1	97-1159	6.5
Paragon	5.9	LA20-6-PRMC	5.6	Paragon	6.0	97-1111	6.4
Select 1	5.9	97-1157	5.6	Citation II	5.9	Laredo	6.4
LP 9	5.9	97-1104	5.6	97-1157	5.9	97-1104	6.3
P68-7-21	5.9	Citation II	5.6	97-1149	5.9	97-3806	6.3
EP 37	5.8	97-3806	5.6	Pro-Select	5.8	97-1107	6.3
Catalina	5.7	97-1150	5.6	97-1142	5.8	Citation II	6.3
LA20-6-PRMC	5.7	P68-7-21	5.6	EP 37	5.7	97-1197	6.2
Sonoran	5.7	97-1196	5.5	97-1104	5.7	97-1157	6.2
Citation II	5.6	Laredo	5.5	97-1196	5.7	97-1149	6.2
WX5-195 HF	5.6	97-1142	5.5	97-1143	5.6	97-1150	6.2
Divine	5.5	97-3809	5.4	97-1106	5.6	97-3808	6.2
Vivd/Cthd2/Slct1	5.5	97-1149	5.4	97-1150	5.6	97-1142	6.1
Charger II	5.4	EP 37	5.4	97-1197	5.6	97-3809	6.1
Cat/wntnrply	5.4	97-1143	5.4	97-3806	5.6	97-3807	6.1
Leaderboard	5.4	MP 5	5.3	Pick hybrid YNC	5.5	97-1106	6.1
Pro-Select	5.3	97-3807	5.3	97-1109	5.5	97-1164	6.0
Laredo	5.2	97-1109	5.2	97-3809	5.5	97-1196	5.9
MP 5	5.1	97-1106	5.2	97-1108	5.4	97-1108	5.8
Turfstar plus	5.0	97-1164	5.1	97-3807	5.4	97-1109	5.8
EPH	4.8	97-1108	4.9	97-3808	5.4	97-1143	5.7
TPD	4.8	Pick hybrid YNC	4.8	97-1164	5.2	EPH	5.1
First cut	4.8	EPH	4.8	EPH	5.1	Pick hybrid YNC	5.1
Pick hybrid YNC	4.7	Vision quest	4.2	Vision quest	5.0	Vision quest	4.4
Vision quest	4.3	Barverdi	3.8	Barverdi	4.6	Barverdi	4.3
Barverdi	3.5	TPD	3.5	TPD	3.8	TPD	3.9
Interim	3.2	Interim	3.1	Interim	3.7	Interim	3.6
Gulf	3.0	Gulf	2.9	Gulf	3.4	Gulf	3.1
TEST MEAN <sup>3</sup>	5.9	--	5.5	--	5.9	--	6.2
LSD VALUE <sup>4</sup>	0.9	--	1.0	--	1.1	--	0.5

<sup>1</sup>All variables on scale of 1-9. 1 = dead, 9 = most desirable condition.

<sup>2</sup>Values are the mean of three replications.

<sup>3</sup>Test Mean = mean of all entries.

<sup>4</sup>LSD Value = mean separation statistic. Entries whose means differ greater than the LSD value are statistically different from each other.