For highest quality turf with effective seedhead control, we currently recommend Scott's Iron S plus Embark. Agriplex does not antagonize the seedhead control from Embark but does not give as good of a masking effect as does the Scott's product.

Data in table 7 shows the results of a study of Prograss and plant growth regulators to control annual bluegrass in fairway turf. This study is being conducted at six golf courses in Michigan: Blythefield Country Club and Kent Country Club, both in Grand Rapids; Walnut Hills Country Club in East Lansing; Orchard Lake Country Club in Orchard Lake; Bloomfield Hills Country Club in Bloomfield Hills; and Barton Hills Country Club in Ann Arbor. The study was initiated in August of 1987 and will be conducted for at least one more year. The PGR treatments (Cutless and Scott's TGR) are applied twice a year (April and August) while Prograss is applied twice in the fall (September and October). Examining the data shows that none of the treatments have caused much change in the amount of annual bluegrass when compared to the control. However, differences between golf courses is significant implying that management factors may be more important than the currently available chemicals. It will be very interesting to follow this study over the next year.

Many superintendents are trying to convert their fairways from annual bluegrass to creeping bentgrass. The quickest and most popular method to convert fairways is use Roundup and then reseed with creeping bentgrass. However, significant amounts of annual bluegrass germinate along with the bentgrass with the resulting fairways containing only 40 to 80 percent bentgrass. Prograss, a selective annual bluegrass herbicide, has been used after seeding the bentgrass to control the germinating annual bluegrass. Rates and timing of the Prograss application are extremely important because the seedling bentgrass can be severely injured by Prograss. We investigated three Prograss rates applied at either 4 + 8 weeks after bentgrass germination (WAG) or at 6 + 10 WAG. The Prograss was applied to plots that were seeded with either 'Penncross' creeping bentgrass or annual bluegrass. Data in table 8 shows the result for creeping bentgrass and annual bluegrass, respectively. If Prograss applications are delayed to 6 + 10 WAG then the bentgrass is less injured and establishes a little more quickly. However, the annual bluegrass is also less affected with the net result being more annual bluegrass. Also, the 3/8 plus 3/4 lb AI/A rate seems to be the best since it does not injure the bentgrass as severely as the other rates tested. The 4 + 8 WAG applications are more effective for controlling annual bluegrass and should be used in situations where less than ideal playing conditions can be tolerated the following spring. Where maximum grass cover is desired the 6 + 10 WAG treatment schedule will give the best results although more annual bluegrass will be present. Thus, a trade off between turf quality and annual bluegrass quantity must be decided. The least annual bluegrass will be found where early (4 + 8 WAG) applications are made but the turf will be more injured and it will take a longer period of time for the bentgrass to establish and give uniform cover. Faster establishment will occur by waiting longer after germination to apply the Prograss (6 + 10 WAG) but more annual bluegrass will remain in the turf.

TABLE 7. Data on change in percentage annual bluegrass and percent control data for 1988.

PERCENTAGE ANNUAL BLUEGRASS

| Treatment | Location | Initial 8-87 | | | | | | 4-88 | | | | | | 8-88 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 1 | 2 | 3 | 4 | 5 | 6 | 1 | 2 | 3 | 4 | 5 | 6 |
| Cutless 0.5 lb AI/A | | 94 | 48 | 64 | 66 | 33 | 64 | 91 | 30 | 61 | 41 | 44 | 56 | 92 | 27 | 62 | 26 | 21 | 52 |
| Cutless 0.75 lb AI/A | | 89 | 70 | 70 | 60 | 34 | 60 | 83 | 65 | 50 | 46 | 65 | 52 | 86 | 53 | 49 | 27 | 23 | 42 |
| Scott's TGR 115 lbs/A 0.29 lbs AI/A PP-333 | | 94 | 65 | 59 | 47 | 32 | 51 | 95 | 52 | 48 | 26 | 53 | 49 | 95 | 43 | 42 | 16 | 12 | 41 |
| Prograss 0.75 + 0.75 lbs AI/A | | 77 | 74 | 69 | 53 | 28 | 71 | 75 | 61 | 66 | 32 | 43 | 74 | 75 | 55 | 67 | 19 | 10 | 75 |
| Prograss 0.75 + 1.5 lbs AI/A | | 94 | 53 | 49 | 64 | 39 | 56 | 70 | 32 | 40 | 18 | 19 | 39 | 95 | 30 | 48 | 29 | 8 | 39 |
| Prograss 0.38 + 1.5 lbs AI/A | | 94 | 59 | 51 | 67 | 32 | 66 | 79 | 38 | 33 | 10 | 19 | 51 | 93 | 44 | 50 | 31 | 18 | 46 |
| Control | | 85 | 60 | 78 | 53 | 36 | 65 | 79 | 51 | 67 | 43 | 63 | 52 | 82 | 43 | 68 | 26 | 25 | 40 |
| | $\bar{x}$ | 90 | 61 | 63 | 59 | 33 | 62 | 81 | 47 | 52 | 30 | 44 | 53 | 88 | 42 | 55 | 25 | 17 | 48 |

Percent Control of Annual Bluegrass

| Treatment | Location | 4-88 | | | | | | | 8-88 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | $\bar{x}$ | 1 | 2 | 3 | 4 | 5 | 6 | $\bar{x}$ |
| Cutless 0.5 lb AI/A | | 3 | 36 | 19 | 37 | 0 | 17 | 19 | 2 | 46 | 20 | 62 | 39 | 31 | 33 |
| Cutless 0.75 lb AI/A | | 7 | 9 | 29 | 21 | 0 | 13 | 13 | 4 | 29 | 31 | 63 | 33 | 38 | 33 |
| Scott's TGR 115 lbs/A 0.29 lbs AI/A PP-333 | | 0 | 26 | 21 | 43 | 0 | 6 | 16 | 0 | 44 | 35 | 68 | 61 | 23 | 38 |
| Prograss 0.75 + 0.75 lbs AI/A | | 2 | 22 | 5 | 38 | 1 | 6 | 12 | 6 | 30 | 4 | 65 | 62 | 3 | 28 |
| Prograss 0.75 + 1.5 lbs AI/A | | 26 | 40 | 14 | 73 | 50 | 26 | 38 | 0 | 45 | 8 | 56 | 78 | 29 | 36 |
| Prograss 0.38 + 1.5 lbs AI/A | | 16 | 33 | 34 | 85 | 34 | 24 | 39 | 2 | 28 | 9 | 54 | 47 | 31 | 28 |
| Control | | 10 | 15 | 16 | 18 | 0 | 18 | 13 | 5 | 30 | 14 | 53 | 36 | 37 | 29 |
| | $\bar{x}$ | 9 | 26 | 20 | 45 | 12 | 16 | $\bar{x}$ | 3 | 36 | 17 | 60 | 51 | 27 | $\bar{x}$ |