

Bermudagrass Suppression in Seashore Paspalum Grasses

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Seashore paspalum has the potential to be one of the most environmentally competitive turfgrasses in the near future. Since paspalum grass and bermudagrass are adapted to the same areas contamination is likely with the two grass species. Therefore, herbicide control for bermudagrass encroachment into paspalum is an important management tool.

Dr. Ronny Duncan and I conducted two field studies at the Georgia Station during 1998 and 1999 to determine the timing, rates and frequency of Prograss (herbicide) plus Cutless (plant growth regular) applications needed to suppress bermudagrass and effects of these treatments on tolerance of paspalum turfgrasses. Treatments were applied to three bermudagrass

cultivars (common, Tifway and TilEagle) and three paspalum cultivars (Sea Isle 1, Sea Isle 2000 and K-3). Plugs of each cultivar (4 inches in diameter and 2 inches deep) were transplanted in the same plot 30 days before the first Prograss plus Cutless treatments were made.

Dates and Timing of Treatments

Prograss plus Cutless treatments were initiated on April 1 at Location I and on July 1 at Location II in 1998. Both locations were moved to new sites in 1999. The recommended Prograss plus Cutless rate is 1.5 + 0.75 lb ai/A and this will be referred to as the X rate. Treatments at Location I were applied initially at the X rate on April 1 and treatments were repeated at either 1/4, 1/2 or X rates at various intervals. from four to six weeks in one to four applications following the initial treatment. Treatments at Location II were initially applied at X, 2X or 3X rates and repeated at either X or 2X rates in one or two application at four week intervals.

How Did Prograss Plus Cutless Treatments Perform?

Bermudagrass suppression and paspalum injury ratings were made at various times from two weeks after the initial treatments until late September. This was for 26 weeks at Location I and for 13 weeks at Location II.

Bermudagrass Suppression

Prograss plus Cutless treatments initiated during early April when bermudagrass was just breaking dormancy (mean air temperature for two weeks prior to treatment was 55° F in 1998 and 59° F in 1999) suppressed a higher percentage of bermudagrass than when treatments were delayed until early summer when bermudagrass was actively growing (mean air temperature for two weeks prior to treatment was 73° F in 1998 and 82° F in 1999). When treatments were applied

April 1, the suppression of Tifway was consistently higher than common bermudagrass while TifEagle bermudagrass suppression was higher than either Tifway or common. When the X rate of Prograss plus Cutless was applied April 1. The suppression of TifEagle was 78%, common bermudagrass was 67% and Tifway was 39% by 26 weeks. The suppression was improved when the X rate was followed by repeated applications, but repeated treatments also caused higher injury to paspalum grasses.

All Prograss plus Cutless treatments applied early July generally suppressed TifEagle bermudagrass almost completely when final ratings were made at 13 weeks. The early summer treatments did not suppress common or Tifway bermudagrass as effectively as treatments made initially during the spring. This was revealed by the higher common bermudagrass suppression in 1999 when treated twice at the X rate during early April which was 98% at 26 weeks, compared to only 51% at 6 weeks when the same treatments were made during early summer.

Summary Bermudagrass Suppression

The timing of Prograss plus Cutless was important in obtaining maximum bermudagrass suppression. Treatments should be initiated during early spring just as the bermudagrass starts to break dormancy. Treatments applied after bermudagrass is actively growing will have less activity and result in less suppression.

Paspalum Injury

When Prograss plus Cutless treatments are made to suppress bermudagrass growing in paspalum turfgrasses, it is desirable to obtain maximum bermudagrass suppression with minimum injury to the desired turf. However, in most instances, the injury to a desirable turf will probably be higher when mixed perennial grasses are treated when they are growing in the same adapted area than normally obtained when the desirable turf is growing with annuals. Therefore, turfgrass injury levels under these conditions will be expected to be higher and turfgrass managers should be aware that higher plant injury will occur.

A single Prograss plus Cutless treatment applied to paspalum cultivars when the turf was breaking dormancy in early April at the X rate caused severe injury (65%) for two to six weeks. Even though paspalum gradually recovered from the initial April treatment, the injury from repeated applications applied four to six weeks later did not damage the paspalum cultivars as severely. Maximum injury from repeated treatments were 45% for Sea Isle I, 37% for Sea Isle 2000 and 32% for K-3. Treatments applied initially at X rate in early April and followed by four timely 1/4X rates during spring and summer provided the best bermudagrass suppression (70%) in five of six treatments (average of two years and three cultivars). Paspalum tolerance from these sequential treatments was equal or better than from other treatments. The injury from these treatments was <30% in five out of six times(over

three rating dates for two years) for Sea Isle I and K-3 and four times out of six for Sea Isle 2000.

Single applications of Prograss plus Cutless applied to actively growing paspalum on July 1 did not injure the turf as severely (maximum injury was 34% for Sea Isle I, 37% for Sea Isle 2000 and 46% for K-3) as when applied initially on April 1 (maximum injury was 61% for Sea Isle I, 65% for Sea Isle 2000 and 64% for K-3). However, repeated applications made to turf treated initially on July 1 caused severe injury (>50%) throughout the summer.

Summary

- 1. Best bermudagrass suppression was obtained when Prograss plus Cutlers were applied at the X rate during early spring (April 1) and followed by four timely 1/4X applications. The first 1/4X repeated application should be made six weeks after the initial X rate and the second, third and fourth 1/4X applications should be made at four week intervals.**
- 2. Paspalum cultivars were severely injured for four to six weeks from initial Prograss plus Cutlers treatments applied at X rate in spring. The cultivars tolerated the four repeated applications at 1/4X when applied during late spring and summer when followed the X rate in early April.**
- 3. Additional studies will be conducted during 2000 and 2001 to expand the above research to suppress bermudagrass and not cause undesirable paspalum injury.**