

PROGRASS - A SELECTIVE ANNUAL BLUEGRASS CONTROL

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Prograss (common name - ethofumesate) is a recently labeled product for pre and postemergence annual bluegrass control in turf. This herbicide offers what turf managers have needed for nearly 40 years - safe and effective annual bluegrass control. We have been testing this herbicide since 1984. The research displayed is two of our tests that were initiated in the fall of 1986.

The first study was designed to examine the effectiveness of Prograss and tridiphane for removal of annual bluegrass from established Kentucky bluegrass turf. Prograss is most effective when two applications are made 30 days apart. The current label recommendations for Kentucky bluegrass are 0.75 + 0.75 lbs ai/A. We were interested in testing higher rates to observe the safety margin on Kentucky bluegrass. Thus, our rates went from 2 + 1 to 3 + 2 lbs ai/A. Prograss was very effective at all rates tested (Table 2). Annual bluegrass control ranged from 95% for the 2 + 2 and 3 + 2 lbs ai/A rates to 83% for the 3 + 1 lb ai/A rates. Tridiphane also was very effective with the 6 and 3 lb ai/A rates giving 90 and 84% control, respectively. The higher rates of Prograss caused some injury to the Kentucky bluegrass in the fall, turning the turf a steel blue color, but by spring the injury had disappeared.

The second study was designed to determine whether the initial or final rate was more important for controlling annual bluegrass. Rates of 0.75, 1.0, 1.25, and 1.5 lbs ai/A were selected and tested in all possible combinations (Table 3). The most important observation was that second rate is much more important than the initial rate.

A rate of 1.0 + 1.5 lbs ai/A gave 56.7% annual bluegrass kill but when the rates were reversed to 1.5 + 1.0 lb ai/A only 26.7% kill was observed. The first application of Prograss seems to set up the annual bluegrass for injury from the second application.

The unique aspect of Prograss is its pre and postemergence activity. That is, it will kill the annual bluegrass that is present and prevent the soil seed reservoir from reinfesting the treated area. Further testing of Prograss is needed, but this herbicide shows tremendous potential for the turfgrass market.

TABLE 2. Response of Annual Bluegrass to ethofumesate applications.

| Rates (lbs ai/A) ^a | Injury ^b | | % Bareground ^c |
|-------------------------------|---------------------|---------|---------------------------|
| | 10/20/86 | 11/4/86 | 5/27/87 |
| 0.75 + 0.75 | 8.7 | 7.3 | 5.0 |
| 0.75 + 1.0 | 8.7 | 7.3 | 13.3 |
| 0.75 + 1.25 | 8.7 | 6.7 | 23.3 |
| 0.75 + 1.5 | 8.7 | 7.0 | 26.7 |
| 1.0 + 0.75 | 8.3 | 7.3 | 6.7 |
| 1.0 + 1.0 | 8.0 | 6.7 | 15.0 |
| 1.0 + 1.25 | 8.7 | 6.7 | 13.3 |
| 1.0 + 1.5 | 8.7 | 6.7 | 56.7 |
| 1.25 + 0.75 | 8.7 | 8.7 | 6.7 |
| 1.25 + 1.0 | 9.0 | 8.0 | 21.7 |
| 1.25 + 1.25 | 8.7 | 7.8 | 33.3 |
| 1.25 + 1.5 | 9.0 | 7.7 | 58.3 |
| 1.5 + 0.75 | 9.0 | 8.3 | 15.0 |
| 1.5 + 1.0 | 9.0 | 8.0 | 26.7 |
| 1.5 + 1.25 | 9.0 | 7.7 | 41.7 |
| 1.5 + 1.5 | 9.0 | 8.0 | 66.7 |
| Control | 7.2 | 7.8 | 0 |
| 0.75 + x ^d | 8.4 | 7.1 | 17.1 |
| 1.0 + x | 8.4 | 6.8 | 22.9 |
| 1.25 + x | 8.8 | 8.0 | 30.0 |
| 1.5 + x | 9.0 | 8.0 | 37.5 |
| x + 0.75 ^e | 8.4 | 7.9 | 8.3 |
| x + 1.0 | 8.4 | 7.5 | 19.2 |
| x + 1.25 | 8.4 | 7.3 | 27.9 |
| x + 1.50 | 8.4 | 7.4 | 52.1 |

a - Initial application on 9/16/86 and second application on 10/17/86.

b - Injury on a scale of 1-9 with 9 = no phytotoxicity and 1 = completely dead turf.

c - % Bareground was a visual estimate of annual bluegrass kill.

d - The means reported are averaged over all values of the 2nd rate. (e.g. the means for 0.75 + x are the average of (0.75 + 0.75) + (0.75 + 1.0) + (0.75 + 1.25) + (0.75 + 1.5).

e - The means reported are averaged over all values of the 2nd rate.

TABLE 3. Control of Annual Bluegrass in established Kentucky Bluegrass.

| <u>Herbicide^a</u> | <u>Rate (lbs/A)</u> | <u>% Annual Bluegrass Control</u> |
|------------------------------|---------------------|-----------------------------------|
| Prograss | 2 + 2 | 95 |
| Prograss | 3 + 2 | 95 |
| Prograss | 2 + 1 | 92 |
| Tridiphane | 6 | 90 |
| Tridiphane | 3 | 84 |
| Prograss | 3 + 1 | 83 |
| Control | | 14 |
| | | LSD .05 20. |

a - Initial application on 9/16/86 with second Prograss application on 10/15/86.