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## Preemergence Control of Crabgrass

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Chemicals for pest control in turf have historically received little interest from the agricultural chemical industry. Most of the products used in the turf industry were developed for agricultural crops and were considered for use in turf if the use in major crops was economically viable. This view of the turf industry by the agricultural chemical industry has been changed by two developments. First, the growth of the lawn care industry has dramatically increased the number of acres of turf treated. Second, certain sectors of the turf industry are perceived as less price conscious and agricultural chemical companies believe that higher profit margins can be generated in turf than in agricultural crops. For these reasons and others, an increasing number of new products have or are being developed for use in turf. Perhaps the greatest number of new products are found in the preemergence annual grass category.

In the mid 1980s, pendimethalin was introduced by O.M. Scott and Lesco as an effective, inexpensive herbicide for annual grass control. In 1992 Dimension® was brought to the marketplace by Monsanto and this year Barricade® was introduced by Sandoz. Pendimethalin and prodiamine are from the same dinitroaniline chemical family as are Balan® and Team® preemergence herbicides. Rhone-Poulenc is close to releasing a preemergence herbicide which is also from the dinitroaniline family.

The control of crabgrass in turf continues to generate interest among turf managers in the industry particularly to compare older products versus the newer chemistries. This study was established in the spring of 1993 to examine the performance of Dimension®, Barricade®, pendimethalin, butralin, and Team® herbicides for the control of crabgrass. Treatments were applied on May 10. Granular treatments were applied using a shaker bottle while spray treatments were applied with a 4 nozzle boom using 8002 spray tips while delivering 52 GPA at 40 PSI.

Data collected on August 3 showed that most treatments were providing excellent control.

There are three likely explanations for this outstanding level of control: first, the newer herbicides tend to be more persistent, providing longer periods of control; second, the cool spring delayed crabgrass germination and slowed development; and third, the time of application was optimal and right before crabgrass germination. This last point can't be overemphasized. A preemergence application put out on April 1 would have an extra 40 days to dissipate and would likely lose effectiveness earlier in the growing season. Thus, premerge applications should be timed just prior to crabgrass germination.

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All herbicides tested with the exception of granular Betasan performed exceptionally well. Split applications of Dimension® worked well even at very low rates. Barricade® also was very effective at all rates tested even down to 0.38 lbs ai/A.

The arsenal of preemergence herbicides available to the turf manager is diverse but with enough choices and performance to give season-long annual grass control in Michigan. With all the different products currently available, it is up to the turf manager to make the right choice of product based upon level of control desired, cost of application, and safety to the treated turf species.

Herbicide Treatment	Rate (lbs ai/A)	Percent Crabgrass		
		7/9/93	7/20/93	8/3/93
Dimension + Dimension 1EC	.125 + .125	0	0	0
Dimension 1 EC	0.25	0	0	0
Dimension 1 EC	0.375	0.3	0	0
EXP 30742B 2.3G	6.0	0	0	0
Dimension 1 EC	0.188	0	0	0
Dimension + Dimension 1 EC	0.125 + 0.063	0	0	0
Dimension + Fert. 1.15G	1.5 + 1.5	0	0.3	0
Pend on Fert. 1.21G	3.0	0	0	0
Barricade 65WDG	0.38	0	0	0
Dimension 1EC	0.50	0	0	0
Barricade 65WDG	0.50	0	0	0
Gal/Team/Fert. 1.09G	250 lbs Prod/A	0	0.7	0
EXP 30742B 2.3G	6.02	0	0	0
Pre-M 60WG	2 + 1.5	0	0	0
Pre-M + Dimension 60DG + 1EC	1.5 + 0.10	0	0	0
Gallery + Dimension 75DF + 1 EC	0.375 + 0.188	0	0	0
Barricade + Dimension 65WDG + 1EC	0.5 + 0.10	1	0	0
Barricade + Dimension 65WDG + 1EC	0.32 + 0.188	0	0	0
Dimension + Dimension 1EC	0.188 + 0.063	0	0	0
Dimension + Dimension 1EC	0.125 + 0.188	0	0	0
EXP31068A 5G	6.0	0	0	0
Dimension 1EC	0.125	0	0	0
DCPA + Dimension 6F + 1EC	5.2 + 0.188	0	0	0
Pre-M + Dimension 60DG + 1EC	1.0 + 0.188	0	0.3	0
Gallery + Dimension 75DF	0.56 + 0.10	0	0	0
Betasan + Dimension 4EC + 1EC	5.0 + 0.188	0	0	0
Team on Fert. 1.15G	3.0	0	0	0
Team on Fert. 1.15G	2.0	0	0.3	0
Team on Fert. 1.15G	1.5 + 1.5	0	0	0

Herbicide Treatment	Rate (lbs ai/A)	Percent Crabgrass		
		7/9/93	7/20/93	8/3/93
Barricade 65WDG	0.75	0	0	0
Barricade 65WDG	1.0	0	0	0
Tupersan + Dimension 50WP + 1EC	9.0 + 0.10	0	0	0
Tupersan + Dimension 50WP + 1EC	6.0 + 0.188	0	0.3	0.3
EXP30911A 5G	5.0	0	0	0.3
Betasan + Dimension 4EC + 1EC	7.5 + 0.10	0	0	0.3
EXP31068A 5G	6.0	0	1.7	0.7
Dimension + Dimension 1EC	0.063 + 0.125	0	0	0.7
Dimension + Dimension 1EC	0.188 + 0.125	0	0	0.7
Gal/Fert/Team 0.82G	250 lb Prod/A	0	0.3	0.7
Barricade 65WDG	0.65	0	0.3	0.7
Dimension + Dimension 1EC	0.063 + 0.063	0	0	1
Ronstar G-BIO 2G	3.0	0	0	1
Pend on Fert. 1.21G	2.0	1.7	0	1.3
Betasan G	7.5	0	0	2
Dimension + Dimension 1EC	0.063 + 0.188	0	0.7	2
Dimension 1EC	0.063	0.7	6.7	4.3
Betasan G	10.0	0	4	5
Pend on Fert. 1.21G	1.5 + 1.5	0	5.7	6.7
DCPA + Dimension 6F + 1EC	7.9 + 0.10	10	23.3	43.3
Control	5.0	16.7	45	58.3