





## New Preemergence Herbicides For Use in Turf

by J. E. Haley

Crabgrass (*Digitaria* spp.) is a common and persistent weed in Illinois turf. It germinates in late spring and throughout the summer on sunny, moist sites. Once established, crabgrasses, with their spreading growth habit crowd out desirable turf. This is especially a problem in spring plantings or areas where the turf is weakened by disease or poor maintenance. Crabgrass can be controlled by application of preemergence or postemergence herbicides. New crabgrass control herbicides that should receive full registration during 1991 are Barricade, Dimension, and Impact.

#### Barricade

Barricade (prodiamine, Sandoz Crop Protection), a new preemergence crabgrass control herbicide, is similar to other herbicides currently available. It must be applied early in the spring prior to weed germination and has no postemergence properties. Irrigation or rainfall should follow application to carry the herbicide down to the soil surface. Very little of the herbicide is translocated to leaves, stems and seeds. Barricade is strongly absorbed on the soil and is not readily leached so there is very little runoff with this herbicide. It degrades more rapidly under anaerobic conditions than under aerobic conditions. This would indicate that herbicide breakdown might present a problem during very wet years, on heavily irrigated sights or in locations that flood frequently.

Barricade is safe to use on Kentucky bluegrass, fine fescue, tall fescue, perennial ryegrass, zoysiagrass, bermudagrass, centipedegrass and St. Augustinegrass. Bentgrasses are not tolerant to Barricade. Annual grasses controlled or partially suppressed with preemergence applications of Barricade include annual bluegrass, crabgrass, foxtail, goosegrass and rescuegrass. Among the many broadleaf weeds controlled or suppressed with Barricade are common chickweed, henbit, prostrate spurge and knotweed.

One advantage of Barricade is that it is a very long lasting herbicide. Rates as low as 0.3 to 0.75 lb. ai/A can control crabgrass from 2 to 6 months. Studies at the University of Illinois indicate that rates of 0.5 lb. ai/A when applied in late April, consistantly provide season long control of crabgrass under a variety of environmental conditions. The long residual activity of Barricade is important to those turf managers that can't return to a site to reapply preemergence material. Since Barricade does not degrade rapidly, it may inhibit germination of desired turfgrass if seeded too soon after herbicide application. This could present a problem with fall renovation of a site that was treated with Barricade in the spring. It is necessary to wait 4-6 months before broadcasting seed over an area treated with 0.75 lb. ai/A Barricade. If slit seeding, a 3-4 month waiting period is needed. Turf established in the fall should not be treated with Barricade the following spring until the turf has completely filled in.

#### Dimension

Another new preemergence herbicide soon to be released is Dimension (dithiopyr, Monsanto). What makes Dimension different from other available preemergence materials is that Dimension can also control crabgrass in the early postemergence (cont'd. page 6)

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stages. Dimension does not prevent the weed seeds from germinating but stops their development probably through inhibition of cell division or development. It is absorbed through the roots and shoots and unlike many preemergence herbicides does not need to be watered in, however, irrigation or rainfall after application improves herbicide performance. Dimension is broken down in the soil by both chemical and microbial action.

Turfgrass species that are tolerant to Dimension include Kentucky bluegrass, tall fescue, perennial ryegrass and some varieties of fine fescue. It is also safe to use on creeping and colonial bentgrass maintained at fairway mowing height. Warm season turfgrasses tolerant to Dimension include buffalograss, zoysiagrass, bermudagrass, centipedegrass, bahiagrass, kikuyugrass, and St. Augustinegrass. Weeds that are controlled or suppressed with preemergence applications of Dimension are barnyardgrass, annual bluegrass, crabgrass, foxtail, goosegrass, chickweed, henbit, oxalis, woodscorrel, spurge and corn speedwell. It is likely that more weeds will be added to the label as research continues on this herbicide.

Turf managers have greater flexibility in their weed control program when using Dimension for late preemergence - early postemergence crabgrass control. Lawn care operators can offer crabgrass control to new customers contracted in late May or early June. Golf course superintendents can apply crabgrass control materials later in the spring when time and seasonal help are more plentiful. If some of the crabgrass plants have tillered, Dimension can be mixed with MSMA for quicker and better control of older plants. Fall renovation of a turf treated with Dimension in the spring should not be a problem. The site can be overseeded 3 months following herbicide application, although it is a good idea to increase the seeding rate. Dimension should only be applied to a mature turf that has developed a secondary root system or has been mowed 1-2 times. Dimension application rates vary depending on the site and weeds to be controlled. Preemergence or early season postemergence control of crabgrass is found with 0.25 to 0.5 lb. ai/A of Dimension, while preemergence control of goosegrass, annual bluegrass or broadleaf weeds may require rates of 0.5 to 0.75 lb. ai/A. When applied vary early in the season, reapplication may be necessary as some herbicide breakdown has been observed when applied in late April.

#### Impact

Impact (quinclorac, BASF) is another new herbicide with both pre and postemergence crabgrass control properties. It is absorbed by the coleoptile, the leaves and the roots. To maximize herbicide uptake, Impact should not be watered for 24 hours following application. However rainfall or irrigation 2-7 days after application will improve weed control. Some adsorption to the soil occurs with Impact and leaching varies depending on soil type, organic matter and soil percolation rate.

Impact is safe to use on annual bluegrass, Kentucky bluegrass, annual and perennial ryegrass, tall fescue and zoysiagrass. Bermudagrass is thought to be tolerant to Impact, however injury has been observed in some university studies. Fine fescue is only moderately tolerant. It should not be applied to bentgrass, bahiagrass, St. Augustine, or centipedegrass. Impact controls a variety of weeds found in turf. Some weeds that are highly

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or moderately susceptible to applications of Impact include crabgrass, foxtail, barnyardgrass, white clover, speedwell, dandelion, buckhorn plantain, and spurge. For crabgrass control, Impact is best applied in late spring or early summer. It can control susceptible grasses up to the 3-5 tiller stage of growth and some broadleaf weeds in the seedling to 4 leaf stage.

Unlike Barricade or Dimension, Impact can be used in conjunction with overseeding or establishment. Slit seeded grass is thought to be more tolerant but seed can be broadcast with good results. This is an important advantage when establishing or renovating a site in late spring. Impact also provides good crabgrass control once the crabgrass begins to flower. Lawn care applicators could find this a selling point when promoting their service to potential clients in mid to late summer.

Barricade, Dimension, and Impact have unique properties that may have a place in your weed control program. When using these products or any of the herbicides currently on the market please follow label instructions carefully.

	Openings		Un	der Constructio	n		In Planning	
1.	Florida	41	1.	California	43	1.	California	116
2.	South Carolina	21	2.	Michigan	42	2.	Florida	93
3.	California	17	3.	Florida	39	3.	Michigan	35
T-4.	Michigan	15	T-4.	Georgia	28	T-4.	Pennsylvania	30
T-4.	North Carolina	15	T-4.	Ohio	28	T-4.	Virginia	30
6.	Texas	13	6.	Illinois	24	T-6.	Ohio	28
T-7.	Georgia	11	T-7.	North Carolina	21	T-6.	New York	28
T-7.	Illinois	11	T-7.	South Carolina	21	T-6.	Georgia	28
9.	Minnesota	10	T-7.	Virginia	21	9.	North Carolina	27
T-10.	New York	8	T-10.	New York	20	10.	Illinois	26
T-10.	Pennsylvania	8	T-10.	Pennsylvania	20	11.	Indiana	25
T-10.	Arizona	8	12.	Minnesota	17	12.	South Carolina	23
	All Others	111		All Others	236		All Others	292
	Total	289		Total	560		Total	781



### Rieke Heads "Down Under"

Dr. Paul E. Rieke, noted turfgrass soils specialist, is leaving Michigan State University; but only for a six-month sabbatical leave in the land of the Kiwi, New Zealand. Paul and his wife, Anne, departed March 1st for Palmerston North, New Zealand where they will be based during the sabbatical. It has been 20 years since Dr. Rieke last had a sabbatical leave and he has been looking forward to rejuvenating his own knowledge and skills during his stay "down under".

Throughout the next six months Dr. Rieke will be studying and writing at Massey University. He will also be conducting some research at the New Zealand Institute of Turf Culture nearby. One of Dr. Rieke's goals during his sabbatical will be the starting of a book on turfgrass soils and fertility. Besides doing research and writing, Dr. Rieke will also have an opportunity to visit turfgrass installations throughout New Zealand.

Current plans call for Dr. Rieke to return to East Lansing in early September in time to prepare for fall term classes. In addition to sharing his experiences with students he will be reporting on his trip at the 62nd Annual Michigan Turfgrass Conference next January.

Golf Course Openings in 1990 - National Summary

	Daily Fee	Municipal	Private	Total
New courses	123	26	57	206
Expansions	43	11	29	83
Total courses	166	37	86	289

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