
A GUIDE TO LANDSCAPE MANAGEMENT

CONTENTS

Innovations have always been part of the landscape management industry, but particularly in the last 10 years.

Landscape managers continue to be more educated and better trained than their predecessors. Our universities have seen to that.

People, too, expect their lawns and landscapes to appear more attractive. This has evolved through a well-planned, overt program of public education by the farsighted green industry itself.

Therefore, better tools have become not a luxury but a necessity. And industry suppliers like Elanco are providing these tools for more intensive maintenance.

Significant improvements in equipment and chemicals have allowed the landscape manager to produce a higher quality landscape, more efficiently and effectively. Proper use of these new products requires continual learning and training.

New chemicals have been introduced which yield better control at a better value. But these improved products require, by definition, more care in practical use.

This new generation of landscape manager needs a thorough understanding of all the tools available, and a dedication to properly use chemicals in particular. To keep chemicals as a part of the effective overall landscape program, proper stewardship will continue to be needed and expanded.

We at Elanco are doing everything in our power to help you learn and understand how to use chemicals safely and effectively.

This year's "Guide to Landscape Management" is part of our service to you.



William H. Culpepper
Director, Specialty Products
Elanco Products Co.
Indianapolis, IN



Weed and disease control of tees and greens

Golf course tees and greens are among the most intensely-maintained turf in the country. Preventative measures can be taken to assure healthy, weed-free and disease-free turf.

PAGE 4

Weed control of golf course fairways

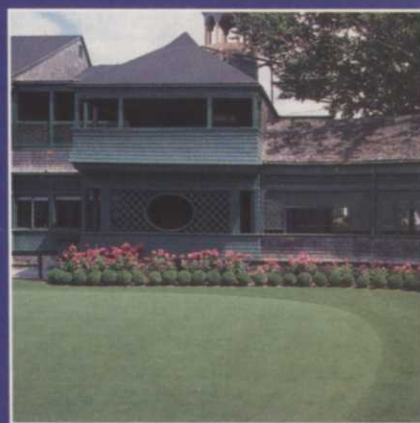
Conscientious superintendents, concerned with the beauty and playability of their golf courses, can't afford to wait until unwanted weeds begin to appear.

PAGE 6

Weed control of home lawns

Research has shown that most homeowners prefer a "green, weed-free lawn." So lawn care companies must assure a quick green-up with fertilizers and controlling weeds with pre-emergence herbicides.

PAGE 8



Weed and disease control for ornamentals

Because of the trend toward more complex landscape designs, preventing weeds in plant beds is becoming a higher priority.

PAGE 16

Weed control of lakes and ponds

Aquatic weeds are not only unsightly, costly and upsetting to nature's balance, they have been extremely difficult to control—until now.

PAGE 18

Disease control for golf course greens and tees



■ ■ *It does a good job retarding the poa annua without retarding the growth of the bentgrass.* ■ ■

—Doug Petersan
Hutchinson, Kan.

The maintenance of disease-free greens and tees is critical in order to provide a high quality playing surface for the golfer. Preventative measures are the best method for keeping greens and tees disease-free and of high quality.

This allows the turf manager to control the turf pathogens before they reach the vital symptom state, when control measures become more costly, not to mention the fact that the damage is already evident, unsightly and detrimental to the health of the overall turf.

The golf course superintendent can choose from several common fungicides when developing his disease control program. However, one special fungicide, Rubigan 50W, has been proven especially effective for disease control programs.

Rubigan has the three key features superintendents are looking for in a fungicide: (1) a broad spectrum of diseases controlled that includes dollar spot, copper spot, large brown patch, pink and gray snow mold, stripe smut, red thread, and pink patch; (2) 14 to 21 days of dependable dollar spot control for as low as 10 cents per 1,000 sq. ft. per day of control; and (3) tank mix flexibility with common fungicides like



■ ■ *I'm a true believer in this product.* ■ ■

—Neil DeWerff
Hays, Kan.

Daconil 2787, which can expand the spectrum of control and enhance control of large brown patch.

An East Coast superintendent who has had success with Rubigan is Brian Cowan of Eastward Ho Country Club in Harwich, Mass., on Cape Cod. Cowan uses Rubigan mainly for poa control on his Seaside bentgrass greens.

"I've used it for four years now on six greens," Cowan says. "They're doing very well. The percentage of poa on them is less than the others."

Cowan usually makes three applications, in early July, early August, and late August or early September at a rate of $\frac{3}{10}$ oz. per 1,000 sq. ft. This season he will make four applications since he began in early June.

Cowan also plans to expand his use of Rubigan to six more greens. "It works well on dollar spot and fusarium, although we only get a little brown patch in the Cape," he says. "I've been very happy with it. I haven't seen any drawbacks."

Experience from regular use by superintendents shows Rubigan to be an important addition to a rotational disease program. With its multi sites of inhibition, Rubigan also helps reduce the worry of pathogens developing

resistance to fungicide treatments.

An extra benefit of Rubigan to golf course superintendents in cool-season and transition zone areas is the gradual reduction of poa annua, reduction that can only be achieved with cumulative rates of 2-3 oz. per 1,000 sq. ft. combined with proper management practices. Depending on personal preference, disease-free poa can be maintained, or it can be gradually reduced.

Doug Petersan of Prairie Dunes Country Club in Hutchinson, Kan., enters his third year of Rubigan use. He looks for two-fold control on his bentgrass greens.

"The thing that impresses me about Rubigan is the poa annua control besides its fungicidal quality," he says. "It does a good job retarding the poa annua without retarding the growth of the bentgrass (greens)."

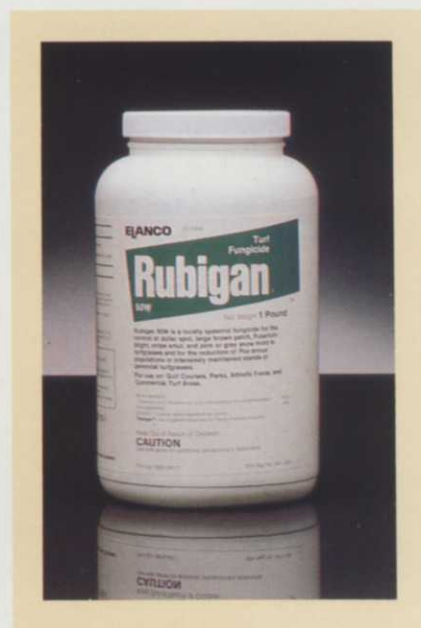
Petersan has used Rubigan on tees and says he is considering spot treatments in some fairway areas.

Petersan uses Rubigan at $\frac{1}{4}$ oz. per 1,000 sq. ft. around May 15. By July 15, four applications bring the total to 1 oz.

On July 15, Aug. 1, and Aug. 15, Petersan uses $\frac{1}{2}$ oz. per 1,000 sq. ft.,



Prairie Dunes Country Club, Hutchinson, Kansas



bringing the total to 2½ oz. After Labor Day, he aerates and topdresses his greens and then fills the aerator holes with sand three to four days after the initial topdressing.

He then seeds his Pennncross bentgrass seed at ½ lb. per 1,000 sq. ft. Three weeks later, Petersan uses Rubigan at ½ oz. per 1,000 sq. ft.

"In the spring we can see almost every aerator hole with a plug of healthy-appearing bentgrass," he says.

Fellow Kansas superintendent Neil DeWerff of Smokey Hill Country Club in Hays began using Rubigan two years ago. At the time, his Pennncross greens were approximately 35 percent poa annua. Now he says the percentage is down to

10 percent or less on the 13 greens he treats with Rubigan.

"On the 13 greens we've treated with Rubigan, we've never used another product (fungicide)," says DeWerff.

He uses a ½ oz. application per 1,000 sq. ft. every three weeks in the spring and then switches to ¼ oz. per 1,000 sq. ft. in the summer months.

"I'm a true believer in this product," says DeWerff, noting that he hasn't had dollar spot problems on his course since he moved to Rubigan.

Given its dependable and economical disease control, Rubigan 50W is, indeed, an important weapon in the wise superintendent's arsenal of maintenance products.

■ ■ It works well on dollar spot and fusarium... ■ ■

—Brian Cowan
Harwich, Mass.

Weed control for golf course fairways

Conscientious golf course superintendents, concerned with the beauty and playability of their courses, can't afford to wait until unwanted species like crabgrass, goosegrass and other annual weed grasses begin to appear on their fairways.

After weeds appear, it is too late to correct the impact on turf quality that has already occurred. So superintendents choose pre-emergence herbicide programs to control weeds before they become visible.

Many herbicides are available to provide control of different weeds for varying periods of time. Two proven performers for annual grass control are the granular pre-emergence herbicides Balan and Team, both of which are also available on fertilizer carriers through selected formulators.

Balan is the leading granular pre-emergence herbicide in use for golf course fairways. The eight- to ten-week control of a single Balan application yields excellent crabgrass and poa annua



■ ■ *It's great for resistant strains of dollar spot.* ■ ■

—Doug Johnson
Newton, Mass.

control with maximum overseeding safety. Balan's low price also allows the superintendent to make a second application if longer control is needed. This predictable length of control by Balan offers the turf manager flexibility to use the cultural practices he needs to maintain the best growing environment.

On the other hand, superintendents

wanting longer-lasting control of crabgrass and goosegrass with a single application now have a product that fits this need. Team offers effective pre-emergence control of crabgrass and goosegrass for 18 to 20 weeks at an affordable price.

University research has shown Team to provide a higher percentage control of crabgrass than other available pre-emergence herbicides. Team is labelled for use on all common turfgrasses used on fairways and roughs, including bentgrass. Team is not labelled for use on bentgrass greens.

Another advantage of Team and Balan is their ease of application. These two granular products can be applied in one-half the time as sprayable herbicides because of the faster refill time, wider application pattern and no need to dodge obstacles in the fairway, plus clay particles spread more accurately, simplify equipment calibration and have no spray drift concerns.

"Applying Team is very easy," claims Howard Gaskill, who supervises three 18-hole golf courses for the Baltimore (Md.) County Department of Recreation & Parks.

The product has worked well for Gaskill, who was able to keep his perennial ryegrass fairways playable despite a record-setting drought and heavy traffic on the public courses this summer.

"I'm really quite pleased with our crabgrass control. The weather has been so bad that we've not been able to



Crooked Stick Country Club,
Indianapolis, Ind.

maintain a dense stand of turf, which is the best crabgrass control."

With the increase in higher quality fairway management programs has come the need for disease control. Rubigan 50W is an excellent fungicide to use in a fairway disease program.

"I've used it not only for disease control, but to control poa annua, too," says Doug Johnson, golf course superintendent at Pine Brook Country Club in Newton, Mass., just outside of Boston. "It's great for resistant strains of dollar spot. I started out with just fairways, basically as a fungicide, then last year decided to give it a try on greens, using it heavier to wipe out the poa."

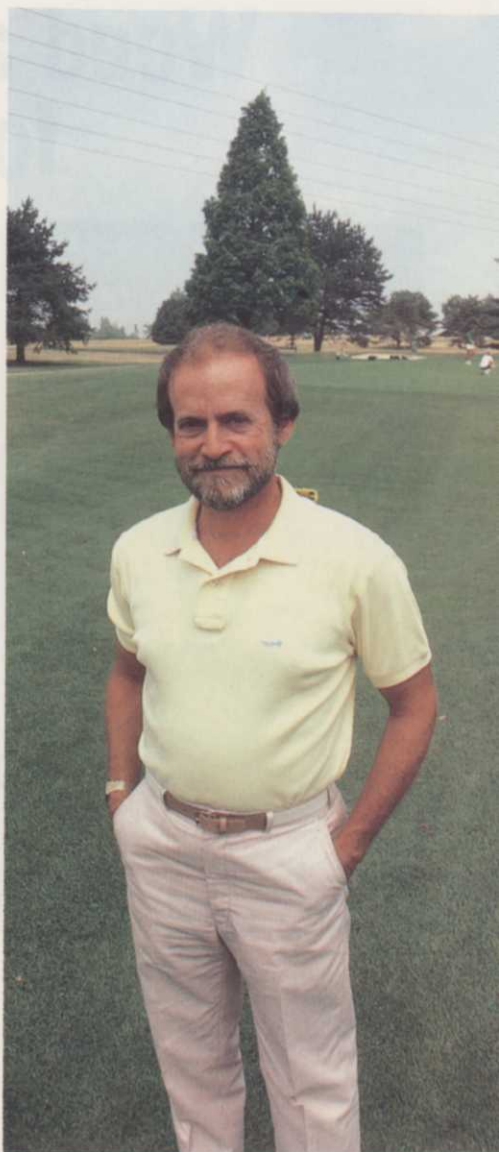
For disease control, especially dollar spot, on his poa/bentgrass fairways, Johnson uses Rubigan in early July, early August, and late August.

Johnson has used the product successfully for four seasons. "I think I might have been the first guy up around here to use it; now there's quite a few," he says. "It's a great fungicide."

Rubigan's control of a broad spectrum of common diseases allows for less product inventory since one product can solve a variety of problems. In addition, Rubigan has been proven unique in that it controls all three pathogens of the fusarium blight complex. This eliminates the need to try to correctly identify the specific pathogen. A preventative treatment of 2 oz. per 1,000 sq. ft. at 30-day intervals will solve his expanding disease problem.

Also, Rubigan is a natural for use in preventative dollar spot programs on bentgrass fairways. An application of Rubigan 50W will give 14 to 21 days of control at $\frac{2}{10}$ oz. per 1,000 sq. ft. or 30 days of control at $\frac{4}{10}$ oz. per 1,000 sq. ft. There's no better value fungicide for fairway dollar spot control.

Whether it's annual weeds or diseases, applications of Balan, Team or Rubigan 50W can help keep the beauty and playability of golf course fairways at their optimum for golf course superintendents.



■ ■ I'm really quite pleased with our crabgrass control. ■ ■

—Howard Gaskill
Baltimore, Md.

Weed and disease control for home lawns



■ ■ From what I've seen,
it's done a super job. ■ ■

—Mike Lancaster
Fairfax, Va.

Research has shown, time and time again, that most homeowners prefer a "green, weed-free lawn." At least homeowners who care enough about their yards to enlist the help of a professional lawn care company.

Not only do homeowners want to take pride in a well-kept property, a well-maintained lawn can increase a home's value significantly.

So the professional lawn care company's major priorities are assuring a quick green-up with fertilizers and controlling weeds with pre-emergence herbicides.

Why pre-emergence herbicides? Because they work early, controlling unwanted weeds that detract from the yard's beauty before spring germination.

Minimizing callbacks is critical to the success of a profitable lawn care company. Products which provide consistent control throughout the season help reduce these callbacks. That's one of the reasons why Team is an extremely popular choice of lawn care operators in



■ ■ It looks like it's working
pretty well. ■ ■

—Jim Johnson (left) and Bill Rowland
Topeka, Kan.

the part of the country where home lawns are composed of cool-season turfgrasses.

Few products on the market provide the 16- to 20-week control of crabgrass and goosegrass like Team, and it's gentle on cool-season turf like bluegrass and ryegrass. Team has provided consistent control across this cool-season turfgrass area.

A combination of benefin and trifluralin, Team is available on an easy-to-spread clay granular or through selected formulations as a sprayable or on a fertilizer granular.

Lawn Doctor of Fairfax, Va., is one of the largest lawn care companies in the Washington, D.C., area with 4,000 customers. Co-managers Bob DeKraft and Mike Lancaster ordered 60 tons of Team this spring. The results have been startling.

"I thought we'd see crabgrass really bad at the end of July. But we're not seeing it at all this year," says DeKraft. "We applied it with fertilizer in March.

Our new customers got it in late April."

Adds Lancaster: "I'm quite impressed with it. From what I've seen, it's done a super job."

Bill Rowland and Jim Johnson of Leprechaun Lawns in Topeka, Kan., used Team for the first time this spring. They used it in combination with fertilizer in two applications: one in March or April, and one in May or June.

With Team, Rowland looks for control of crabgrass and foxtail. Thus far the results have been positive.

"It looks like it's working pretty well," says Johnson. "The areas I've seen where we've used the product look good." Balan and Balan/fertilizer combinations are also available to lawn care operators. In the cool-season tier of states where control of annual grasses is needed for 10 to 12 weeks, Balan provides dependable control at a very affordable price.

As the lawn care market develops, lawn care operators should consider going a step farther, giving their



■ ■ It's been 90 to 95 percent effective. ■ ■

—Vince Flecker
Indianapolis, Ind.



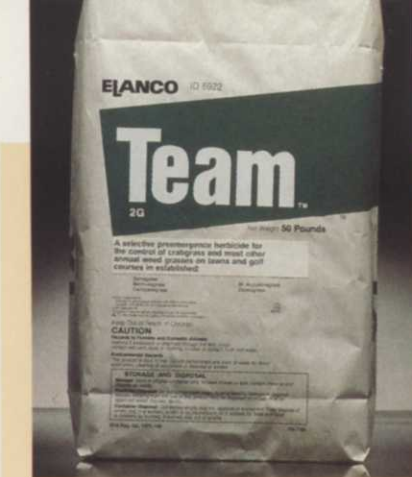
■ ■ We're not seeing (crabgrass) at all this year. ■ ■

—Bob DeKraft
Fairfax, Va.

customers disease control with applications of Rubigan fungicide. Rubigan controls the two most common lawn diseases, fusarium blight complex and dollar spot, either preventatively or curatively.

Rubigan has been proven unique in that it controls all three pathogens of the fusarium blight complex. This eliminates the need to try to correctly identify the specific pathogen. A preventative treatment of 2 oz. per 1,000 sq. ft. at 30-day intervals will solve this expanding disease problem.

Also, Rubigan is a natural for use in preventative or curative dollar spot control. An application of Rubigan 50W



will give 14 to 21 days of control at $\frac{2}{10}$ oz. per 1,000 sq. ft. or 30 days of control at $\frac{4}{10}$ oz. per 1,000 sq. ft. There's no better value fungicide for dollar spot control.

And, while your applicators are out on their rounds, another service to offer customers is weed control in ornamental beds with Surflan or Treflan. Both products provide over-the-top control of a wide range of annual grasses and broadleaf weeds in 150 species of ornamentals. Surflan is available in a sprayable formulation while Treflan is an easy-to-use granular.

Vince Flecker has found Surflan plus Roundup suits his Shur-Spray Lawn Care

operation.

"We use it primarily for control along fencelines and around trees," says the Indianapolis LCO. "I drove by a site yesterday that we treated in the spring. It's been 90 to 95 percent effective, which I feel is pretty good. The best thing about it is that it's safe around trees."

Shur-Spray first used the wettable powder formulation four years ago, but has since changed to the liquid formulation.

Team, Balan, Rubigan, Surflan or Treflan can provide lawn care operators with the performance needed to have satisfied customers with fewer callbacks.

Dollar spotless.

Look closely at this course. No dollar spot in sight. Not even resistant dollar spot, thanks to Rubigan.

Rubigan controls dollar spot on your tees, greens and fairways for only about 10 cents per 1,000 square feet. That's all.

Just one application gives you a full 28 days control. Apply only 0.4 oz. of Rubigan per 1,000 square feet for dependable 28-day control. Or 0.2 oz. for 14 days. You can't find a better fungicide value than Rubigan.

Now look closer at this course. Notice there's also no fusarium blight,



**Dollar for dollar, nothing controls
dollar spot better than Rubigan.[®]**

**For more information
use the attached
postage paid
business reply card**

For more information
use the attached
postage paid
business reply card

Name _____

Title _____

Firm _____

Address _____

City _____

State _____ Zip _____

Telephone (_____) _____

My primary business at this location is: (please check one only)

Golf Course Superintendent

Lawn Care Applicator

Schools, Parks, Cemeteries

Nursery

Other _____

SOUTH-Warm Season Turf

NORTH-Cool Season Turf

Please send me more information on the following products:

Balan®

Rubigan® 50W

XL™

Treflan®

Rubigan® EC

Sonar®

Surflan®

Team™



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

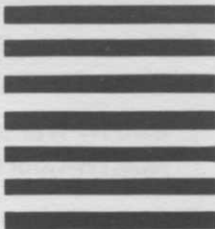
BUSINESS REPLY MAIL

FIRST CLASS PERMIT NO. 5626 INDIANAPOLIS, INDIANA

POSTAGE WILL BE PAID BY ADDRESSEE

Elanco Specialty Products

Dept. E-455
Lilly Corporate Center
Indianapolis, IN 46285



necrotic ring spot, summer patch or take-all patch. And no large brown patch, either, with a Daconil 2787® tank mix. Nothing but clean, beautiful turf. No other fungicide controls so much for so little.

Only Rubigan is labeled to prevent and treat all these harmful diseases. No wonder Rubigan is the superintendents' choice for dependable dollar spot control in all types of weather.

Once you apply Rubigan, it's absorbed almost instantly through the leaves and roots so it won't wash off.

Its multi-sites of inhibition also mean less resistance problems.

This year, make your course look this spotless. Make it dollar spotless with Rubigan. Dollar for dollar, nothing controls dollar spot better. See your Elanco distributor. Or call toll-free: 1-800-ELANPRO. In Indiana, call collect: 317-261-6102.

Elanco Products Company
A Division of Eli Lilly and Company
Lilly Corporate Center
Dept. E-455, Indianapolis, IN 46285, U.S.A.
Rubigan®—(fenarimol, Elanco Products Company)
Daconil 2787®—(chlorothalonil, SDS Biotech Corporation)



Weed and disease control for ornamentals



■ ■ *It's a time-saver and a labor-saver.* ■ ■

—Jimmy Collins
Houston, Tex.

Because of the trend toward more complex and beautiful landscape designs, preventing weed encroachment in more and larger plant beds is becoming a higher priority of landscape managers everywhere.

Two factors are foremost in the landscape manager's mind when selecting the appropriate herbicide: safety to plantings and length of control. Safety because ornamental materials are a costly part of the landscape, and length of control because longer residual means fewer herbicide treatments.

Two products which have excellent safety margins and longer-lasting control of weeds in plant beds are Surflan and Treflan. Season-long control of grassy and broadleaf weeds in more than 150 species of ornamentals is possible with them.

Treflan is a granular formulation offering the most convenient and economical control of annual grasses and broadleaf weeds. Surflan is a liquid that can be sprayed around the base of established plants or broadcast over the top of plants. Surflan can be tank-mixed with other herbicides such as Fusilade, Poast, or Goal to control specific weed problems.

In areas where vegetation exists such as fence rows, sidewalks, and around trees, Surflan can be tank-mixed with Roundup for complete weed control. Roundup provides the knockdown required to kill the existing vegetation, and Surflan provides the residual control necessary to keep the susceptible weeds

from germinating for the entire season.

To treat 1,000 sq. ft., mix 3 oz. of Surflan A.S. (liquid measure) with 4 oz. of Roundup in 2 gal. of water. Spray the entire area to wet only, not to drip.

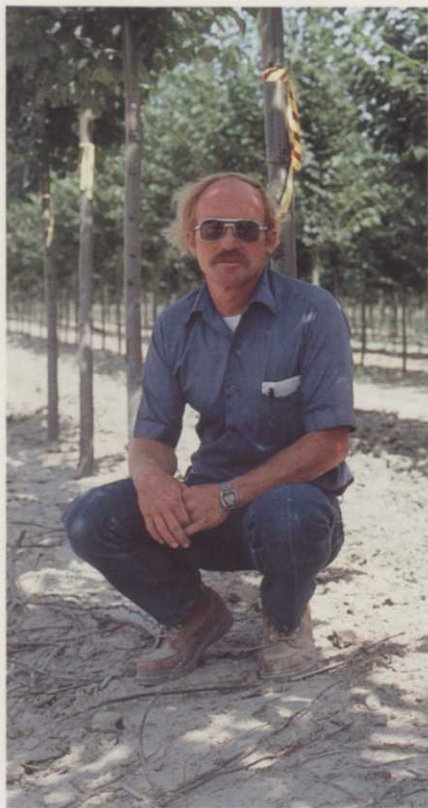
"We've used Surflan in combination with Roundup around trees," says John Luper, superintendent at Bardmoor Country Club, Seminole, Fla. "We've cut back considerably—perhaps as much as 20 to 30 percent—the number of times that we have to spray around trees and ditchbanks."

"I can't say enough about the product. It's a time saver and labor saver," says Jimmy Collins, operations manager for Earth Tone Development in Houston, Tex.

Collins applies Surflan around March 1 to ornamental beds. If weeds appear, he'll do a second application of Surflan and Roundup as needed. He also applies the mixture regularly in August.

In the past, Collins has applied Surflan at a rate of 2 qts. per acre, but has found better control with 4 qts. per acre. His crew has also discovered the Surflan/Roundup mix works well in expansion joints in concrete areas, although he still uses the product most frequently in ornamental beds.

In Whiteland, Ind., state-certified applicator Dave Jenkins of Maschmeyer Nursery uses the Surflan/Roundup mix for control between the rows of the nursery's 3 million trees. His goal is bareground control so there's no competition between the weeds and



■ ■ I'm real happy with it. It does a good job. ■ ■

—Dave Jenkins
Whiteland, Ind.

trees for the soil's nutrients.

He sprays all 300 acres single-handedly. This is his fifth year using the mix.

"I'm real happy with it. It does a good job. We use 120 gallons a year and I've only got 20 left," he says. Jenkins says sometimes in the early spring he uses Surflan by itself and then mixes with Roundup later in the spring for post-emergent control.

He uses Surflan at the rate of 1 gal. per acre per year.

One of the most devastating diseases of ornamentals is powdery mildew. Locally systemic fungicides like Rubigan EC are rapidly absorbed and used by ornamentals to prevent and control powdery mildew.

Rubigan has been proven effective and economical for powdery mildew or roses, myrtle, lilacs and other popular ornamental plantings. Without damage to roses and ornamentals by powdery mildew, they remain as beautiful as they are popular.

Landscape plantings provide a valuable addition to the landscape. Controlling weeds and diseases in these plantings with Surflan, Treflan and Rubigan is necessary to maximize their beauty and value.



Weed control for ponds and lakes



■ ■ *It's rare to see hydrilla in those places.* ■ ■

—Mike Mahler
Polk County, Fla.

Aquatic weeds are not only unsightly, costly and upsetting to nature's balance, they have been extremely difficult to control—until now. Sonar is the first aquatic weed control product that controls hydrilla, milfoil, and other problem weeds without affecting water quality or wildlife.

Unlike other aquatic herbicides, Sonar is not a restricted use herbicide. Sonar carries no label restrictions against fishing, swimming, or drinking treated water, which allows it to be used without interrupting water use. It has no detrimental effect on fish, game birds, insects or other organisms like plankton. Neither is it harmful to nearby trees and shrubs that are not growing in the water.

"With Sonar, we were able to put the lakes back to the condition they were in before hydrilla came in," says Mike Mahler, operations coordinator for Polk County (Fla.) Environmental Services. "We've had some lakes that were



■ ■ *With Sonar, we got 99 percent control without re-treating.* ■ ■

—Will Davis
Lake County, Fla.

virtually 100 percent surfaced out in hydrilla before we used Sonar. Now, it's rare to see hydrilla in those places.

"On a per-acre, per-year-of-control basis, Sonar is also cheaper than any other material."

In ponds, lakes and reservoirs, Sonar has shown its effectiveness on a variety of aquatic weeds while often leaving desirable populations of native plants (with proper application). One application has lasted one to two years, showing Sonar to be an economical method of long-lasting weed control.

More than 50 species of submersed plants, emersed and floating plants, as well as shoreline grasses, have proven susceptible to Sonar. The list includes such hard-to-control species as hydrilla, milfoil, pondweed and duckweed.

"If I had to say there was one big advantage to Sonar, it's very selective on the plants it controls," notes Will Davis, executive director of the Lake County

(Fla.) Water Authority. "Hydrilla is our main problem, and Sonar is our primary chemical for treating it. With Sonar, we got 99 percent control on Lake Yale without re-treating. There was no cost-effective method of getting a lake clean until Sonar came along. I don't know of a chemical on the market that can even come close to it."

Sonar controls water weeds slowly, usually 30 to 90 days, without oxygen depletion or fish kill. Sonar's selectivity lets desirable aquatic plants become re-established so that nature's balance is gently restored.

This new aquatic herbicide, which comes in both liquid and pellet formulation, is also easy to apply. With the low application rates, treatments of Sonar pellets can be made on one acre of water in just three to five minutes.

With new Sonar, there is now an easy way to control those aquatic weed problems without interrupting your water use.



After treatment with Sonar, this lake (top photo) is clear of unsightly weeds.

Compare that to the photo taken before treatment (bottom photo).

ELANCO PRODUCTS

	GREENS & TEES		FAIRWAYS & ROUGHS					Dis co
	Disease control	Poa annua control	Disease control	Crabgrass and goose-grass control	Poa annua control	Winter annual control	Fertilizer combinations	
Rubigan	●	●	●					
Surflan				●	●	●	●	
Team 2G				●	●		●	
XL Herbicide 2G				●	●	●	●	
Balan Herbicide 2.5G				●	●		●	
Treflan Emulsifiable Concentrate								
Sonar Herbicide								