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# WT&T

## Landscape Weed Control Guide

drift. Combinations offer the best control in most cases. Products sold in combination formulations simplify handling and mixing since compatibility problems have been

solved in manufacturing (such as Trimec where the formulation process eliminates the tendency for 2,4-D or MCPP to crystallize out of solution). Manufacturers add sur-

factants to some products to improve product performance and adherence. Some of these combinations are Amizine (amitrole and

*Continues on page 44*

### Summary of herbicide treatments on control of weeds in turfgrasses in Georgia. (B.J. Johnson)

Treatments	Herbicide	Rate	Weed species <sup>a</sup>								
			Crab-grass	Goose-grass	Henbit	Common chick-weed	Spur-weed	Parsley-piert	Hop clover	Corn speedwell	Annual bluegrass
		lb/A									
	Atrazine	2.0			Po	Po	Po	Po	Po	Po	Po
	Bensulide	10.0	P					P		Po	P
	Benefin	3.0	P		P	P				P	P
	DCPA	10.0	P			P				P	
	DSMA	3.0	Po								
	Ethofumesate										P, Po <sup>c</sup>
	Glyphosate <sup>b</sup>	0.5			Po	Po	Po	Po	Po	Po	Po
	Metribuzin	0.5		Po	Po	Po	Po	Po	Po	Po	Po
	Metribuzin + MSMA	0.12+									
		2.0	Po	Po							
	MSMA	2.0	Po								
	Oxadiazon	3.0	P	P				P	P	P	P
	Paraquat <sup>b</sup>	0.5			Po	Po	Po	Po	Po	Po	Po
	Pronamide	0.75				P				P, Po	P, Po
	2,4-D <sup>d</sup>	1.0			Po	Po	Po	Po	Po	Po	
	2,4-D+dicamba <sup>d</sup>	1.0+									
		0.5			Po	Po	Po	Po	Po	Po	
	2,4-D+mecoprop + dicamba <sup>d</sup>	1.0+									
		0.5+									
		0.1			Po	Po	Po	Po	Po	Po	

<sup>a</sup>Weeds controlled from preemergence treatments are represented with P and those with postemergence treatments are represented with Po.

<sup>b</sup>Turfgrass must be completely dormant when paraquat and glyphosate are used. Paraquat has restricted use and applicator must be certified. Glyphosate does not have specific label for turf except for renovation.

<sup>c</sup>Safe to apply to bermudagrass overseeded with ryegrass.

<sup>d</sup>Repeated treatments at 2-week interval may be needed for effective control.

### Lawn grass tolerance to herbicides in Georgia. (B.J. Johnson, Univ. of Georgia)

Turfgrasses	Herbicides								
	Benefin	DCPA	Bensulide	Oxadiazon	Atrazine	DSMA MSMA	2,4-D <sup>1</sup>	Paraquat	Glyphosate
Bermuda	T	T	T	T	S*	T	T	S*	S*
Zoysia	T	T	T	T	S*	S-I	T	S	S
Centipede	T	T	T	T	T	S	S*	S	S
St. Augustine	T	T	T		T	S	S	S	S
Tall fescue	T	T	T	T	S	T	T	S	S
Bahia	T	T	T		S-I	S-I	T	S	S

T = Tolerance; safe to use herbicide at recommended rates.

S = Sensitive; Do not use this herbicide.

S-I = Intermediately tolerant; use herbicide with care since grass may be injured.

\*Tolerant to herbicides when turfgrass is dormant.

<sup>1</sup>Includes mecoprop and/or dicamba.



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# WT&T

## Landscape Weed Control Guide

simazine), various Banvel combinations (dicamba plus), Broadside (MSMA and cacodylic acid), Chlorea (sod, sodium chlorate, diuron), Dowpon (dalapon and sodium TCA), Fenamine (amitrole, fenac, atrazine), Hopkins Rout G-8 (bromacil and diuron), Krovar (bromacil and diuron), MonDak (MSMA and dicamba), Pramitol 5PS (prometon, simazine, chlorate), Tordon (picloram and 2,4-D), Urox (monuron and TCA), Vegemec (prometon and 2,4-D), Weedmaster (dicamba and 2,4-D), and Weedone (2,4-D and dichlorprop). See list for separate brush control herbicides.

### Equipment and Methods

The greatest advances in equipment and methods have come from nurserymen and lawn care companies. These were adapted mainly from agriculture, such as the rope wick applicator and irrigation injection. One specialized technique currently being tried by Chem-Lawn is a holster-mounted canister of specialty herbicide which can be injected into the spray hose at the site by the applicator. When needed for a special situation, the

applicator can easily inject a proportioned amount of chemical into the flow of the spray at the gun.

The need or usefulness of chemicals has not diminished. Integrated pest management programs have not eliminated the need for landscape pesticides. If anything, it has improved the use of chemicals and put decision-making more in the hands of the applicator instead of the manufacturer. The safety of chemicals has been enhanced by this, especially for restricted use products applied by certified applicators. Chemicals, such as the phenoxy's, are safer than ever in the hands of trained personnel.

### Brush Control Herbicides

amitrole	diuron (Karmex)
asulam (Asulox)	fenac
atrazine	fosamine (Krenite)
bromacil (Hyvar)	linuron (Lorox)
bromoxynil	MSMA (Ansar)
cacodylic acid	monuron (Urox)
dalapon (Dowpon)	picloram (Tordon)
dicamba (Banvel)	prometon (Pramitol)
dichlorprop	tebuthiuron (Spike)
dinitrophenol	triclopyr (Garlon)
dinoseb	2,4-D

### Addresses

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Wilmington, DE 19805

Ciba Geigy Corp.  
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Greensboro, NC 27409  
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Somerset, NJ 08873  
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Crystal Chemical Co.  
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203-222-3000

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### How do you advertise?

Method	Percentage
Direct Mail	18.0%
Trade Shows	15.0%
Advertising in Publications	12.0%
Direct Response	10.0%
Telemarketing	8.0%
Referrals	7.0%
Other	30.0%

### Average lawn firm spends \$7,456 on ads and promo

The average reader of **LAWN CARE INDUSTRY** spends \$7,456 a year on advertising, a recent survey by the magazine shows.

The respondents to the survey indicated that they spent an average of 1.9 percent of their annual revenues on advertising and promotion.

The percentage of respondents using various forms of advertising in "Yellow Pages" (75.2 percent), newspaper (52.2 percent), direct mail (74.5 percent), personal solicitation (52.2 percent), door hanger (23.2 percent), radio (14.4 percent), homegardener show display (77.8 percent), phone solicitation (14.1 percent), referrals (77.2 percent).

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## LAWN CARE INDUSTRY

Serving lawn maintenance and chemical lawn care professionals

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### PLCAA to Indy in '82 and '83

The Professional Lawn Care Association of America (PLCAA) Conference and Trade Shows for next year and 1983 will be held at the Indianapolis Convention Center.

Dates for next year's conference and trade show will be Nov. 18-19. Dates for the 1983 meeting will be Nov. 4-5. Exhibitors for both years will be the Indianapolis Hotel Regency Hotel.

The next two shows will be held on Tuesday through Thursday of the weeks involved. The last two days of the show has been on Wednesday through Friday at the Commodore Convention Center in Louisville. The 1981 conference and show was held last month.

For further information, contact PLCAA, Suite 1717, 418 N. Michigan Ave., Chicago, IL 60611, 312-462-0928.

### \$4-million 2,4-D 'war chest,' state-of-the-art weed control presented at weed symposium

Handfuls of lawn care businessmen, manufacturers, suppliers and exhibitors gathered for their industry efforts to support the availability of herbicide 2,4-D and latest weed control research at the recent symposium on Turfgrass Weeds held at Columbus, Ohio, home of

Chemical Lawn Care, Inc. The two-day event featured 19 speakers on 21 topics centered on weed control. Among the speakers was Dr. J. S. "Skip" Skaggs.

Dr. Skaggs' research...  
...the weed control...  
...should be stressed.

Chemical's Dr. Skaggs...  
...weed control...  
...should be stressed.

The impact of herbicides on turfgrass...  
...weeds...  
...should be stressed.

That there is the buildup of herbicides in soil...  
...15 years of testing.

That herbicides can...  
...herbicide...  
...not used.

That for some weeds, 100 percent control is not an economically viable goal for lawn care businessmen to aim for.

That lawn care businessmen should emphasize weed "control" and not weed "eradication" in business programs with some problem weeds.

Chemical's Dr. Skaggs...  
...herbicide...  
...should be stressed.

Highlights of the symposium...  
...LAWN CARE INDUSTRY...  
...in-depth report on the talks...  
...of the symposium.

It is hard to imagine a new...

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### QUICK STARTS

### How do you advertise?

Ohio lawn workshop next month	6
Two new Mobay pesticides	8
Price rollback for Ronstar	11
Lawn care supplier marketplace	14
Mid-Am Show next month	21

Next month PLCAA Show Report  
February: Weed Control  
March: Insect Control



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# USE



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Wherever you use it, Roundup® herbicide helps make weed control around your customers' homes fast, easy and effective. Just one application of Roundup controls tough labeled weeds right down to the roots, so they won't grow back. That means less need for time-consuming repeat treatments.

And Roundup has no residual soil activity, so it can't wash or leach from treated areas to injure desirable vegetation.

Whether you apply Roundup with a backpack sprayer or a hand-held wiper, it effectively controls weeds

wherever they grow. Around shrubs and bushes. In sidewalk cracks. Along driveways. At the base of trees. Along fences. In and around flowering ornamentals. Spot lawn renovation. Edging around obstacles. You name it—there's virtually no limit to the uses of Roundup!

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# USGA SPECIFICATIONS PROPER GREEN CONSTRUCTION SOLVES PROBLEMS LATER

By BRIAN SILVA

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Soil compaction is the most serious problem of intensively used turf-grass sites.

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Brian Silva is a USGA Green Section agronomist for the Northeast region. He was graduated from the University of Massachusetts and taught at Lake City Community College in Florida prior to joining USGA.

An ideally completed round of golf on a par 72 golf course would find one using 36 of these strokes on the putting green. In addition to the time spent during play on the greens in a round, a similar amount of time is often spent discussing characteristics such as speed, color, shot holding capacity, surface grain and contours, and the like.

Certainly greens receive the closest scrutiny of any feature on the golf course. This attention requires that great care be taken in the design and construction of putting greens and their immediate surroundings.

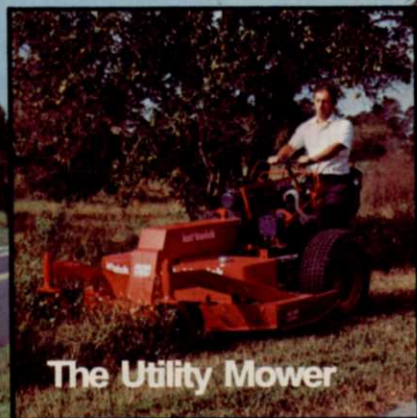
Architecturally, a putting green

should appear natural, as if it were part of the original site. Putting surfaces and collars should be designed so that surface water is drained away rapidly and efficiently. Contouring of the green should provide a minimum of two, and preferably, three or four directions in which surface water can flow. No more than 60% of the surface run-off should be drained in a single direction. Water should be directed away from the normal line of play, yet all too often greens are designed with a single surface drainage pattern which directs the water to the approach area of the

*Continues on page 50*



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front of the green. This approach area is perennially wet and susceptible to mower damage, disease incidence, compaction and annual weed encroachment. In cold climates, these back-to-front drainage greens are susceptible to ice cover formation as snow cover melts at the rear of the green during the warm part of a winter day. The water then has to travel the length of the green in leaving the putting surface and often refreezes as temperatures drop in the late afternoon and early evening. Additionally, low spots and pockets should be avoided as should channeling of the water over restricted portions of the green collar.

Contemporary greens are raised above fairway level as opposed to the fairway-type greens found on many older courses. The raised green offers greater visibility and shot holding characteristics, allows improved surface drainage and also permits better air drainage and circulation.

The architectural tenet "form follows function" can well be applied to putting green design. For example, a green on a long par 4, where a golfer would be expected to play the approach shot with a fairway wood or long iron, should be designed with a long axis. If bunkered, the bunkers should be wide set, allowing the golfer the opportunity to roll the shot to the green. Conversely, on a short approach, the golfer is expected to hit a high shot and the green can be fronted with bunkers and possess a relatively short axis. An approach shot of intermediate length would dictate a compromise of these two green designs.

While there are various methods of putting green and collar construction, there is general agreement on a number of points. First of all, a means must be provided for the removal of excess water. This removal will help to prevent the waterlogged conditions conducive to disease incidence, shallow rooting, inadequate aeration and overall poor turf condition. Secondly, the green must retain sufficient moisture and nutrients in the rootzone. Lastly, the putting green and collar should be resistant to compaction. Soil compaction is the

most serious problem encountered on intensively used turfgrass sites.

The United States Golf Association Green Section Specifications for Putting Green Construction represent the most thoroughly researched and tested method of putting green construction. Originally proposed in 1960, the Green Section specifications have been refined as a result of additional research and in-field experience.

This method of putting green and collar construction details a process by which the green and its immediate surroundings are constructed in layers. Subsurface drainage tile lines are covered with a four-in. blanket of pea gravel. An intermediate layer of coarse sand to a two-in. depth is spread evenly over the pea gravel and followed by a 12 to 14-in. layer of topsoil mixture.

Close adherence to these specifications will result in the formation of a perched water table. This perched water table will permit the relatively coarse textured topmix to markedly increase its water holding capacity. However, under conditions of heavy rainfall, the topmix of a green constructed in this manner will drain excess water rapidly. In short, the topmix can be made to hold more water than it would were layering not involved, but it cannot be made to retain water in sufficient quantities to be deleterious to plant growth.

Recent research has shown that the coarse sand layer can be omitted during construction under certain conditions. This intermediate layer functions mainly to prevent the washing of finer soil particles into the drainage system of the green and to assist in water retention in the topmix. Close to ten years of research has shown that a proper particle size relationship between the topmix and gravel can eliminate the necessity for the coarse sand layer without significantly reducing the water retention capacity of the topmix or damaging the gravel layer through particle migration during drainage. The decision regarding the necessity for the coarse sand layer can only be made through particle size analysis of the topmix and gravel to be used in construction.



**The drainage tile** is inset in four-inches of pea gravel, which is then covered with a layer of coarse sand and a foot of topsoil.

The success of any method of putting green and collar construction depends greatly upon the physical and chemical characteristics of the soil mixture or topmix in which the turf will be growing. The heavy traffic received by greens and collars requires that the topmix be sufficiently resistant to compaction in order to retain the aeration essential to the growth and development of a healthy root system. A proper infiltration rate will allow for the rapid movement of excess water into and through the soil profile. Again, the soil mixture should be able to retain moisture and nutrients in quantities sufficient for plant growth.

Native soils which provide these characteristics to the proper degree are almost nonexistent. In order to assure the proper characteristics, a soil mixture must be developed through the aid of physical soil analysis. The variability of available construction materials such as sand, soil and organic matter, and the required physical and chemical characteristics, rule out the determination of a topmix by any other means. Too many greens have been constructed, with less than desired results, from a soil mixture that "looked good" or was fine for growing agricultural crops.

Once the proper blend of materials has been determined for the topmix through extensive testing, the proper mixing of these materials becomes the next step in construction. Off-site mixing is essen-

*Continues on page 52*