

Weed control:

# turf vs. ornamental beds

**Some products suited for turf can damage ornamental beds, and vice versa. Before you use postemergents on adjacent areas, learn which products to avoid**

BY JEFFREY F. DERR



**Weeds commonly move from turf areas into ornamental beds and from beds to turf areas. The control strategies may be different in the two areas, however.**

**M**y previous article ("Control T & O Crossover Weeds," *Landscape Management* November 1999), discussed weeds that are common to turf and ornamental areas. Since you may maintain both turf and ornamental beds, I discussed the herbicides that can be applied to both areas to control these crossover weeds. If you can use the same products in both lawns and ornamental beds, your weed management program becomes much less complex.

Unfortunately, some chemicals can only be applied to turf, and others can only be applied to ornamentals. You should know how to use these products to avoid damage to desirable plants.

## Differences matter

A major difference between turf and ornamental beds is that we are maintaining a perennial grass in our lawns while maintaining predominantly annual and perennial broadleaf species in landscape beds. The tolerance of broadleaves to an herbicide is often quite different from that seen in a perennial grass. This is especially true for postemergent herbicides. The similarities in weed control in lawns and ornamental beds occur primarily with preemergent crabgrass herbicides.

Ornamental grasses are becoming increasingly important in landscapes and herbicide use in these plants is quite similar to that used in turfgrass. Herbicide tolerance in nongrass monocots such as daylily, liriopie and tulip, however, can be different from that in turfgrasses. Due to the diversity of plants being grown in ornamental beds, it is important to have an understanding of herbicide tolerance across ornamental beds and turf.

The differences that occur in turf and ornamental herbicides fall primarily into three categories: 1. post-emergence herbicides used for broadleaf weed control

in turf; 2. herbicides used for perennial grass control in ornamentals; and 3. nonselective herbicides used in ornamentals.

### Turf damage control

A number of selective postemergence broadleaf herbicides are used in lawns, including 2,4-D; 2,4-DP; MCPP; MCPA; dicamba; and triclopyr. They are often referred to as growth-regulator herbicides and are usually applied in two-way or three-way combinations for broader-spectrum broadleaf control. As with broadleaf weeds, broadleaf ornamentals are usually quite sensitive to members in this group. Their exposure to small quantities of these herbicides can cause systemic damage. These chemicals can also damage conifers and nongrass monocots.

There are three major ways that injury to broadleaf ornamentals can occur with these herbicides: spray drift, vapor drift and root uptake. Use caution when applying these compounds to avoid spray droplet drift into ornamental beds (they should be applied when winds are light). Granular formulations could be used in certain situations where spraying would be difficult, but although granular formulations eliminate the potential for spray drift, they still can damage broadleaf ornamentals through root uptake.

Vapor drift occurs when these products are applied under high temperatures (especially over 85 degrees F). These chemicals leave the soil surface as a vapor and move with wind to sensitive crops. The risk is greatest with ester formulations, which are more volatile than amine formulations. Thus, when making applications in late spring or summer when trees and shrubs are actively growing, you would prefer amine formulations to minimize vapor drift. It would be safer to apply ester formulations after deciduous trees and shrubs have dropped their leaves in fall.

All of these growth-regulator compounds are mobile in the soil. After rain or irrigation leaches these compounds into the soil, the potential exists for tree or shrub roots to absorb these herbicides. Overapplication within the dripline of a tree or shrub can lead to root uptake and damage.

### Target the application

The compounds in the 2,4-D group are difficult to clean out of a sprayer. It might be better to use a different sprayer to apply these compounds than one used to apply fungicides and insecticides to ornamental beds.

**TABLE 1**

*Herbicides used predominantly in cool and/or warm season turf species.*

<b>Growth regulators:</b> 2,4-D 2,4-DP dicamba MCPA MCPP triclopyr	<b>Triazines:</b> atrazine metribuzen	<b>Other:</b> imazaquin MSMA quinclorac
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**TABLE 2**

*Herbicides used predominantly in ornamental beds.*

<b>Postemergence grass:</b> clethodim fluzafop sethoxydim	<b>Nonselective:</b> diquat glufosinate glyphosate pelargonic acid	<b>Other:</b> dichlobenil oxyfluorfen pronamide
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Trace amounts of a growth regulator herbicide can cause severe damage to broadleaf ornamentals.

Quinclorac (Drive) is one of the newer herbicides registered for turf use. Besides controlling crabgrass, quinclorac also controls certain broadleaves, such as white clover. Because of this broadleaf activity, it must be used with caution around ornamentals. It, like the 2,4-D group, is both leaf and root absorbed. Avoid spray drift into ornamental beds and ensure that the correct rate is being applied to avoid exposing tree and shrub roots to high levels of this chemical.



While the triazine herbicides atrazine and metribuzen can be applied to certain warm-season turf species, they cannot be applied to ornamental beds. Both

compounds are absorbed by leaves and roots. By a similar fashion, imazaquin (Image) is used predominantly on turf and will damage certain ornamental species. It can be used on certain woody ornamentals, however. The organic arsenical MSMA is used primarily on turf for postemergence control of crabgrass, yellow nutsedge and certain broadleaf weeds. Avoid drift onto ornamental species.

**Most of the postemergence grass herbicides applied to broadleaf ornamentals cannot be used for grass control in turf.**

*continued on page 80*



J. DERR

continued from page 79

### Ornamental bed options

One group of compounds that can be used in broadleaf and nongrass monocots are the postemergence grass herbicides. This group includes fluazifop (Fusilade II/Ornamec), sethoxydim (Vantage) and clethodim (Envoy). Fenoxaprop (Acclaim Extra) is also in this group but certain turf species will tolerate fenoxaprop. Turf species generally have less tolerance to fluazifop, sethoxydim and clethodim than to fenoxaprop.

Postemergence grass herbicides have an opposite control spectrum than the 2,4-D group. These control grasses and do not affect other monocots (like daylily) or broadleaves, and are used to control perennial grasses like quackgrass, bermudagrass and johnsongrass. In some cases, certain turfgrass species will tolerate one or more of these compounds. In most situations, however, drift will damage Kentucky bluegrass, perennial ryegrass, tall fescue, bermudagrass and other turf species.

The postemergence grass herbicides are primarily absorbed by leaves. They can exhibit preemergence effects but have very short half-lives in soil. Since postemergence grass herbicides have short soil residual action, the primary concern is spray drift onto turf areas.

Several other herbicides are used to control certain perennial grasses in ornamental crops. Dichlobenil (Barrier/Casoron) and pronamide (Kerb) will control perennial grasses such as tall fescue. Pronamide can be

**Determine the tolerance of both the turf species and ornamental species when applying herbicides in a landscape.**

used on bermudagrass turf but will damage most cool-season grasses (it is applied as a sprayed application). Avoid spray drift onto turfgrass.

Dichlobenil is applied in granular form. When used in woody ornamental beds, ensure that granules are not being thrown into turf areas. If heavy rains occur soon after an application of these herbicides,

continued on page 82

## Herbicide eases timing problems

Chris Randall, grounds management manager for Bland Landscaping, Apex, NC, knows the drill. If weather or other factors prevent him from taking care of his clients on time and weeds emerge, he expects a call from his upscale residential or industrial clients.

"I'll have to send a spray technician back to the site to re-apply a herbicide, adding to costs, lowering profit margins and damaging the company's credibility," Randall says. "Relying only on preemergence products increases our vulnerability because of the narrow application window."

His clients want reliable, broad-spectrum postemergence weed control, he notes. "We lose money when we have to retreat a property. We need effective products that enlarge the treatment window."



**Eric Eibelheuser, IPM coordinator for Bland Landscaping, treats a commercial account.**

continued on page 82

continued from page 80

damage could occur to turf areas downhill from the treated areas.

Oxyfluorfen (Goal) is used as a sprayed treatment in conifers and deciduous trees, and is applied in various granular formulations for weed control in woody ornamental beds. It has both foliar and soil activity and can burn herbaceous species. Oxyfluorfen does not cause systemic injury but can cause unacceptable damage if sufficient spray drift occurs.

### Nonselective products

Nonselective postemergence herbicides are usually the only option for controlling emerged broadleaf weeds in ornamental beds. This group includes glyphosate (Roundup Pro), glufosinate (Finale), diquat (Reward) and pelargonic acid (Scythe). Since they are nonselective, they must be kept off the foliage of ornamentals as well as turfgrass.

Directed sprays can be used in upright-growing woody ornamental species. Apply with caution so spray drift to turf does not occur. There are a limited number of places where these compounds can be used in turf, such as dormant applications of glyphosate in bermudagrass.

Diquat and pelargonic acid are contact herbicides. If spray drift did occur, turfgrasses would be expected to quickly outgrow the damage. Since glyphosate and glufosinate are systemic, turf exposed to these two chemicals will show damage for a longer period of time.

These compounds can be used safely and effectively in turf or landscape beds for weed control, but you have to be more careful when applying these compounds due to the potential for damaging nontarget plants. Make sure you've calibrated sprayers and granular applicators correctly and avoid applications on windy days. Use the formulation least likely to move off-site if sensitive species are nearby and check the herbicide label to determine tolerant species and any special use precautions.

— *The author is a professor of Weed Science with Virginia Tech.*

continued from page 80

### Timing issues

It's an industry-wide concern for professional contractors with growing client lists, a limited labor pool and an already narrow treatment window that may shrink even more with wet or cold weather. These companies feel the time crunch every spring.

Bert McCarty, associate professor at Clemson University's horticulture department in Clemson, SC, says the pre-emergence window is often hard to determine. "Preemergence herbicide timing is a crap shoot and the logistics

of treating a large clientele make the problem even more difficult."

McCarty has tested a new postemergence herbicide quinclorac (Drive DF), now available from TopPro Specialties, which offers breathing room for spring herbicide applications. "Drive helps widen the window of opportunity," he says. "It expands the time lawn care operators can apply pre-emergence herbicides."

The new material controls crabgrass, clover, dandelion and other early spring weed and grass problems as a postemergence application and offers residual control. An applicator may delay pre-emergence application several weeks, then use it in a tank mix with the usual preemergence herbicides to clean up target weeds and limit callbacks.

"This may be a solution for LCOs' spring application timing problems," McCarty says.

He also noted the rapid control. "It is quick and effective on crabgrass with almost total elimination in five to seven days. Most products don't work that quickly or that effectively."

### The art of timing

Timing problems are not confined to the South. Bill Pound, turfgrass extension specialist at The Ohio State University, says the short transition between winter and summer in Ohio can cause similar timing problems.

"Lawn care operators may miss the crabgrass window if they don't apply preemergence herbicides until late April or early May," he says.

Nick Christians, Iowa State University, has been impressed with the material's speed of control. "I was surprised that it kills crabgrass within 24 hours. It's also effective on clover."

Drive is labeled for both cool-and warm-season turfgrasses.

For more information, contact TopPro Specialties, a business unit of BASF Corporation and Micro Flo Company at 800-451-8461. The Web site is

[www.topprospecialties.com](http://www.topprospecialties.com).



Eibelheuser applies an early summer herbicide treatment on an upscale account.

VERN STRICKLAND