

Weed Identification and Control in *sportsTURF*

by Jeffrey F. Derr

Spring has arrived, and more people will be outdoors enjoying the warm weather. Managers of sports turf will want the sites they maintain to be in top condition for spring use. One important management concern for spring is weed control.

Weeds affect our recreational activities in a number of ways. Weeds reduce the aesthetic value of our parks, golf courses and ball fields. But they have other impacts besides effects on turf appearance.

Some weeds, such as sandbur, pose a hazard to people walking barefoot in turf areas. Weed flowers can attract bees, posing a hazard to those sensitive to bee stings. Poison ivy causes a skin rash in sensitive individuals. Common ragweed pollen causes allergies in late summer, when the plants are in bloom. Weeds growing on golf greens can affect play by altering ball movement. Weeds growing in cracks are a problem in tennis courts. They block water flow in drainage ditches, and interfere with swimming and boating in our lakes and rivers. Weeds can harbor insect and disease pests, which then can move to desired plants.

For these and other reasons, managers need to develop a weed management plan for properties they maintain. An important component of such a plan is weed identification. One must know the major weeds present at each site.

Why is this important? Weed identification will be our guide when choosing chemical control options and determining time of application. Weed identification can also point us to situations that can be corrected through cultural control strategies.

Weed identification

Weeds can be divided into grasses, grass-like plants and broadleaf weeds. The grass family includes common weeds, such as crabgrass, goosegrass, annual bluegrass and dallisgrass. The

grass-like group includes sedges, rushes and certain members of the lily family. Prostrate spurge, common chickweed and dandelion are examples of broadleaf weeds.

One needs to be able to separate these plant groups. The herbicides we use for grass control generally have no effect on sedges; and, conversely, most of our sedge herbicides have no effect on grasses. Further, the postemergence broadleaf herbicides will not control grasses.



Crabgrass is a common weed that belongs to the grass family. It is classified as an annual, and can be controlled quite well with preemergence herbicides.

Courtesy: Bradd Pavur

How do we tell these plant groups apart? Grasses have narrow leaves with parallel veins, and the leaves are two-ranked. Stems are either round or flattened. The root system is fibrous. Sedges are similar to grasses in that their leaves are long and narrow with parallel veins. But sedges have triangular stems, and the leaves emerge from three sides (three ranked).

Rushes generally have round stems, and primarily occur in aquatic sites or other moist areas. Weedy members of the lily family include wild onion, wild garlic and greenbrier.

Grasses, sedges, rushes and lilies are all monocots. When these plants germinate from seed, they have one seed leaf (cotyledon). In monocots, the flower parts occur in threes - for example, three petals and three sepals.

Broadleaves are dicots - they have two seed leaves at germination. Dicots generally have broad leaves with netted veins. Don't be fooled by this, certain broadleaves, such as buckhorn plantain, have somewhat narrow leaves. The root system of broadleaves is characterized by a taproot, and flower parts occur in twos, fours or fives.

It's a good idea to have at least one weed identification guide on your shelf. Listed are some of the guides I use:

- *Weeds of Southern Turfgrass*, the Cooperative Extension Service, University of Georgia, Athens, GA.

- *Weeds of the Northeast*, Cornell University Press, Ithaca, NY, ISBN 0-8014-8334-4.

- *Weeds of the West*, Pioneer of Jackson Hole, Jackson, WY, ISBN 0-941570-13-4.

Weed life cycle

While we need to be able to identify our major weeds, we also need to know their life cycle. Weeds can be classified as annuals, biennials or perennials. The ability to distinguish between the different types becomes important when selecting methods of control.

Comparing crabgrass control with bermudagrass control in turf provides a good example. Crabgrass, an annual, can be controlled quite well with pre-emergence herbicides. Perennial

weeds are generally not controlled by preemergence herbicides. As a general rule of thumb with some exceptions, we use preemergence herbicides to control annual weeds and postemergence herbicides to control perennials.

Annuals must germinate from seed each growing season. This category can be divided into summer annuals and winter annuals. Summer annuals germinate in spring and early summer. They usually die off with the first frost. Winter annuals germinate in fall or early spring, and die off with the onset of hot, dry weather in late spring or early summer.

One needs to know when a weed germinates to set the timing of herbicide application. A crabgrass prevention herbicide applied in March is long gone by the time annual bluegrass is germinating in September. Preemergence herbicide applications for winter annual weed control must be made in August; but for summer annuals, these chemicals must be applied in March or April.

Examples of summer annual grasses include large crabgrass, goosegrass and yellow foxtail. Common summer annuals in turf are prostrate spurge, prostrate knotweed and lespedeza. Annual bluegrass and annual ryegrass behave as winter annuals. Common chickweed, henbit and corn speedwell are examples of winter annual broadleaves.

Biennials take two years to complete their life cycle and spread strictly by seed. They germinate from seed, produce a rosette the first year, and then flower in the second year. Plants die after flowering. There are only a few biennials, and they are broadleaves. Examples include wild carrot, musk thistle and common mullein.

Perennials live for many years. Simple perennials, such as dandelion and plantain, spread strictly by seed. Creeping perennials, like bermudagrass, white clover and yellow nutsedge, spread vegetatively by rhizomes, tubers or stolons, in addition to being spread by seed. Important perennial grass weeds include dallisgrass, quackgrass, nimblewill and bermudagrass. Yellow and purple nutsedge are common perennial sedges in turf, especially in wet sites. Ground ivy, common blue violet and Virginia buttonweed are examples of perennial broadleaves.

Weed management in turf

The three main weed management strategies are cultural, biological and chemical control. At present there are very few biological control options for weeds, so this strategy is essentially not an option for sports turf applications. This is an active area of research, so we may see development

of specific insects or diseases to suppress weeds in the future. But for now, turf managers must rely on a combination of cultural and chemical control for weed problems.

The goal of cultural control is to allow turf to compete with weeds more effectively. Choose a turf variety that

Continued on pg. 31

CYGNET TURF

BEEN THERE.....

DONE IT.....



JACK KENT COOKE STADIUM • WASHINGTON REDSKINS
 FOXBORO STADIUM • NEW ENGLAND PATRIOTS
 ARROWHEAD STADIUM • KANSAS CITY CHIEFS
 JACKSONVILLE STADIUM • JACKSONVILLE JAGUARS
 ERICSSON STADIUM • CAROLINA PANTHERS
 SOLDIER FIELD • CHICAGO BEARS
 CLEVELAND STADIUM • CLEVELAND BROWNS
 JOE ROBBIE STADIUM • MIAMI DOLPHINS
 JACOBS FIELD • CLEVELAND INDIANS
 BUSCH STADIUM • ST. LOUIS CARDINALS
 KAUFFMAN STADIUM • KANSAS CITY ROYALS
 BALTIMORE RAVENS TRAINING FACILITY
 PHILADELPHIA EAGLES TRAINING FACILITY
 ST. LOUIS RAMS TRAINING FACILITY
 OHIO STATE
 UNIVERSITY OF TOLEDO
 UNIVERSITY OF MICHIGAN
 UNIVERSITY OF IOWA
 BOWLING GREEN STATE UNIVERSITY
 WESTERN MICHIGAN UNIVERSITY
 OHIO UNIVERSITY

Whether it's to strip a field, or install a field using our turf or yours, CYGNET TURF is able to perform under all kinds of conditions and is able to respond to most emergencies. Our patented equipment is able to cut and install from very thin, to very thick turf. So, when you are ready to install....give CYGNET a call!

CYGNET TURF

4711 Insley Road
 North Baltimore, Ohio 45672
 Phone: (419) 354-1112 • Farm (419) 655-2020
 Fax: (419) 352-1244

is well suited for the areas being maintained. Mowing height has a major impact on weed density. The higher the mowing height, the fewer the number of weeds at a site. Weed seed requires light for germination and development. A thick, dense turf will restrict light penetration to the soil surface and suppress weed germination.

Any disorder that thins turf will lead to increased weed growth. Maintain appropriate fertilization, irrigation and soil pH for optimum turf growth, and control insect and disease pests. Also, correct soil compaction problems. Certain weeds, like prostrate knotweed and goosegrass, can grow better in dry, compacted soil than in desired turfgrass species. Other weeds, like annual bluegrass and yellow nutsedge, grow well in wet sites. Create an environment that is best suited for turfgrass growth.

Chemical control

There are a variety of preemergence and postemergence herbicides registered for use on turf. Consult herbicide labels for specific directions on use. Some products can only be used on established turf, and will damage turf if applied at seeding or soon after. Check which turf species can be treated with a given herbicide.

Annual grasses: Annual grasses are usually controlled chemically with preemergence herbicides (crabgrass prevention). Goosegrass germinates a little later than crabgrass, so split applications are often used to control this weed. Most of the preemergence crabgrass herbicides will not control emerged crabgrass, so proper application timing is important. The available products differ in how long they control crabgrass. Shorter residual products need repeat applications for season-long control. This is especially true in southern states, which have a longer crabgrass season. Crabgrass can also be controlled postemergence in turf. Applications are most effective when applied prior to tilling.

Perennial grasses: There are no selective controls for most perennial grasses that infest turf areas. In most cases, the only option is to kill all

plants using a nonselective postemergence herbicide, and then reseed the treated area after the weed has been controlled.

Perennial sedges: Perennials account for most of the sedge problems in turf, especially yellow nutsedge. Perennial sedges are primarily controlled with postemergence herbicides. Yellow nutsedge will stand out in turf during the summer, as it grows above the turf. Plants are treated when they are actively growing and have sufficient foliage to absorb the chemical. Mowing must be restricted for a week after application to allow for chemical absorption and translocation. Repeat applications are often required for season-long control.

Annual and perennial broadleaves: Broadleaf weeds have generally been controlled with postemergence herbicides. These products are usually a mixture of two or three active ingredients. Do not apply these products during windy conditions, due to the potential for injury to ornamentals or other sensitive broadleaves growing nearby. Certain broadleaves can be controlled from seed using preemergence herbicides. A postemergence herbicide can be applied to control existing weeds. Follow with a preemergence herbicide application to stop further germination of the weed. Check the herbicide label to see if that product will control the predominant broadleaves on your fields.

Sports turf managers must develop a year-round weed management program. This program can be developed by scouting for and identifying weeds when they are in flower. Scout summer weeds in late summer or early fall, and scout winter weeds in spring when they are blooming. Appropriate cultural and chemical controls can then be chosen to manage these species. Such a program will improve the appearance of your turf, and will prevent weeds from getting the best of you. □

Jeffrey Derr is an associate professor of weed science at Virginia Tech. He conducts research on weed management in turf, ornamentals and other horticultural crops.

THE NEW GROUNDS PRO™ IS MORE THAN A MOWER.



It's a spreader.



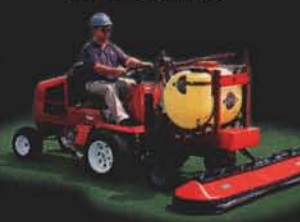
It's a sweeper.



It's a dump cart.



It's a blower.



It's a sprayer.

IT'S A GROUNDS MAINTENANCE SYSTEM

For a free Grounds Pro 2000 video, request one through our website at www.toro.com/grounds/sports.

TORO

©1998 The Toro Company

Circle 120 on Postage Free Card