TECH CENTER

Weed control strategies for sports fields

Developing a game plan means scouting the opponent—identifying the weeds, recording their location, and learning their lifecycle.

by Gil Landry, Ph.D.
and Tim Murphy, Ph.D

■ Controlling weeds in sports fields is often the ultimate challenge.

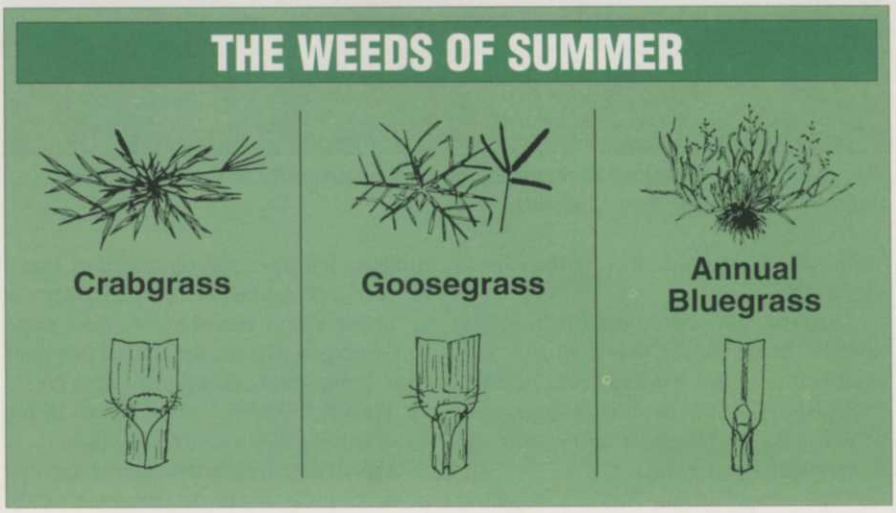
The athletic events themselves are big obstacles to maintaining a high quality, safe turf. Wear, soil compaction and divoting serve as open invitations to sports field's enemy number one: weeds.

As coaches drill teams into shape and develop game plans or strategies, so should turfgrass managers. This begins with shaping up the grass through proper management: fertilization, irrigation, mowing and cultivation.

Just as the best defense is a good offense, a healthy, vigorous turf is much less prone to weed problems than a weak one. So first spend your time and money conditioning the field through proper management. It will save you time and money later.

Developing a game plan involves assessing or scouting the opponent and then developing proper strategies. Turf managers scout by identifying the weeds, recording their location, and learning their lifecycle.

Proper identification is essential. After all, if what looks like a sweep right ends up being a reverse left, you're in big trouble.



Many publications are available that aid in weed identification and weed control program development. Well-trained sales representatives and local county extension agents can also be very helpful. Once the weeds are identified, a control strategy can be developed.

Common weeds—The most common weeds include various species of crabgrass, goosegrass (also called silver crabgrass or crowfoot) and annual bluegrass (aka *Poa annua*). Other common weeds might include purple and yellow nutsedge, wild garlic, clovers, dandelion and various winter annuals such as henbit and common chickweed.

Crabgrass and goosegrass, both summer annuals, can be controlled with herbicides. Crabgrass starts germinating in the spring when soil temperatures at a four-inch depth reach 53-58° F. Goosegrass usually germinates about two to eight weeks later than crabgrass when soil temperatures reach 60-65° F.

University research shows that the effectiveness of pre-emergence herbicides varies in controlling crabgrass and goosegrass. Refer to weed control guides or recommendations available through most land grant universities.

Additionally, the effectiveness of many pre-emergence herbicides can be increased by using split or sequential applications: one-half when the herbicide is normally applied and a second half-application 8 to 10 weeks later. This extends the life of the active ingredient and has been shown to increase effectiveness, particularly against goosegrass.

In the case of a winter annual such as annual bluegrass, germination occurs in the late summer and fall when soil temperatures drop to 70-75° F. It can also be controlled by both pre-emergence and post-emergence herbicides.

After the scouting has been done, developing a game plan or strategy involves becoming thoroughly familiar with the her-

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The authors keep Sanford Stadium, home of the University of Georgia football team in Athens, Ga., free of weeds.

bicide label and consideration of the following factors:

Turfgrass tolerance: Does the turfgrass tolerate the herbicide? (For example, dormant bermudagrass has excellent tolerance to glyphosate but will be severely damaged if treated in the later stages of spring green-up or while actively growing.)

Time of application: This can influence turfgrass tolerance and control. (For example, turfgrass herbicide injury increases as air temperatures exceed 90° F. Also, some post-emergence herbicides applied just prior to or during spring growth may delay green-up. Finally, the more mature a weed is, the less effective a herbicide usually will be.)

Application frequency: Repeat applications are necessary to control some weeds. (For example, two applications of oryzalin or benefin at intervals of 8 to 10 weeks will generally give better control of goosegrass than a single application. Also, two applications of MSMA at a 5- to 7-day interval is more effective for crabgrass control than two applications at a 14-day interval.

Application equipment: Selecting a sprayable or granular formulation will depend on the application equipment available. Generally, sprayable and granular formulations of the same pre-emergence herbicide are equally effective.

Economics: Remember: materials are priced differently, and the most expensive materials are not necessarily the most effective. Also, cost comparisons should be made based on the cost per acre treated, not on the costs per unit of product.

Cultural management—The meshing of a weed control program with a cultural management program is like bringing the offense and defense together. For years, it was not acceptable to follow pre-emergence applications with core cultivation. However, a number of studies have shown that coring and even vertical mowing after herbicide application does not increase weed problems. Therefore, if soil compaction is a problem, don't avoid coring.

Sports fields frequently need renovation. So if areas need re-seeding, either use post-emergence herbicides or allow adequate time for pre-emergence herbicides to dissipate before re-seeding.

Proper herbicide use can be one of the most effective tools available to the sports turf manager. However, it also can be somewhat like a running back who can run 100 yards in 9.4 seconds. He has the potential to be great, but he's not worth much if he fumbles half the time he touches the ball.

Likewise, if you control weeds with post-emergence herbicides but the turfgrass lacks adequate fertility or water, it will not recover and fill in the area previously occupied by weeds. That's like the fullback taking out the linebacker and the tailback slipping in the backfield. It looked good for a while, but it failed to advance the game plan.

Although we often think that taking time to develop a strategy is only for the fortunate few with big staffs and plenty of time, we should recognize that without a strategy or plan, we simply are reacting. If we plan, we begin building and refining a program.

—Dr. Landry is a professor of agronomy at the University of Georgia and president of the national Sports Turf Managers Association. Dr. Murphy is an associate professor of agronomy at the University of Georgia.

Ammonium sulfate reduces summer patch

■ Ammonium sulfate fertilizer (21-0-0-24S) suppresses summer patch, a fungal disease attacking the roots of turfgrasses, says Dr. Joseph Heckman of Rutgers University.

Heckman says the intensity of this turf disease increases during hot, humid summers. While summer patch can cause problems for homeowners, the turf market—especially golf course managers—must deal with it on a larger scale. Summer patch affects Kentucky bluegrass, annual bluegrass and fine fescues.

"Ammonium sulfate reduces soil pH almost immediately, and that has been shown to suppress summer patch in our test on Kentucky bluegrass," says Rutgers pathologist David Thompson, who worked with Heckman and Bruce Clarke on the study. "Urea lowers the pH in the long term, but in the short term it actually increases the soil pH and urea does not suppress summer patch."

Neither calcium nitrate nor potassium nitrate offer the pH lowering effect found with ammonium sulfate, Thompson says.

Tests in 1991 showed a 60 to 80 percent reduction in summer patch when ammonium sulfate was applied, and a 35 to 45 percent when sulfur-coated ruea was applied, compared to urea or nitrate. Thompson also says ammonium sulfate caused a delay of three to five weeks in the development of symptoms while sulfur-coated urea only showed a one- to two-week delay of symptoms compared to nitrate nitrogen.

Plan ahead for Japanese bettles

■ Warm weather next spring will bring with it the arrival of Japanese beetles. These voracious insects begin their summer feeding frenzy in late June or early July in most cool-season areas, a practice they keep up through August. Some may even linger until late September.

Although adult Japanese beetles seem especially attracted to roses, annuals, vegetables and grapes, they can—and do—feed on more than 250 kinds of plants, according to Dr. Lee Hellman, an extension entomologist with the University of Maryland. Just one or two of the insects can virtually destroy a flower in a matter of hours.

When it comes to control, there's good news and bad news. The good news is that control methods are available; the bad news is that none of them is completely effective, Hellman says.

Although insecticides will kill Japanese beetles that eat or walk on treated leaves, they remain effective for only a few days—a week at the most. You may need to spray some ornamental plants several times during the summer to prevent serious damage caused by the beetles as they migrate from one yard to another.

The most common insecticides for use against Japanese beetles are malathion and carbaryl (Sevin).

Both are effective, if applied according to label directions. They may be used on fruit trees, but may involve a pre-harvest waiting period.