



Golf Turf Weed Management: *NOW'S THE TIME*

By Dr. Frank S. Rossi
Department of Horticulture
University of Wisconsin-Madison

Perspective

The 1992 and 1993 growing seasons will be remembered as seasons without spring and summer. The prolonged cool-wet periods did not allow for active grass growth; even weed growth, including annual bluegrass, was relatively slow. Looking out over the Wisconsin landscape in 1994, one could not help but notice the bounty of dandelions, yellow rocket, ground ivy, clover, annual bluegrass seedheads and finally the summer annual grasses (crabgrass, foxtail, fall panicum, etc.). The weed specialists at the UW-Madison have speculated that weed seed banks remained intact through 1992-93 because of poor conditions, thereby increasing seed amounts each year.

Early spring 1994 brought intermittent moist-warm conditions that encouraged weed seed germination. These conditions were followed by more stressful mid-spring frosts and drought that encouraged weeds to set seed. The result is a sea of colors—yellow for dandelion and yellow rocket; white for annual bluegrass and clover; blue for ground ivy. For the average person this was pure joy. For the agronomist, a more fleeting joy was followed by the recognition that flowering indicates more weeds to manage this year and more weed seeds for next year.

Each month during the growing season, I have the opportunity to be on Wisconsin Public Radio with my friend Larry Meiller. The spring shows are always the hardest. Many homeowners call and want to know what to do about their weeds. In most cases, their weeds are dandelions, clover and ground ivy (creeping charlie, creeping jenny, gill-over-the-ground). My answers are standard; *if you have a chronic weed problem, something is wrong with the growing conditions on your site and the best time to control these weeds is in the late summer to*

mid-fall. I think they hate me for it! Nevertheless, we need to remember the best time to control perennial broadleaf weeds is in the fall, but also, preemergence grass control including annual bluegrass management can be done when things are winding down. We might adjust our mindset to focus on weed management in the fall, just as we focus our fertility in the fall.

Perennial Broadleaf Weed Management

I know as a golf course superintendent, less than 0.5% of budgetary dollars are allocated to broadleaf weed control. I bet even less thought goes into making these decisions. Simply, if we manage a dense turf in the playing area, weeds cannot establish. Interestingly, this year many superintendents received complaints about weed growth in rough areas adjacent to play. Typically, rough areas receive less intensive management and the weeds and grasses are left to compete for resources. The weeds usually are able to establish and persist.

Spring herbicide applications of inexpensive combinations that include 2,4-D, dicamba, MCPP, 2,4-DP, MCPA, etc. are usually effective, particularly if used in conjunction with light fertilization that encourages grass growth. Additionally, advances in granular herbicide formulation technology provides the flexibility of using a granular (less involved than getting the sprayer up and going) and affords high levels of control. Still, springtime is usually hectic; short staff, actively growing turf needs mowing, many players, finishing projects, etc. Holding off your herbicide application can add challenges to an otherwise easy procedure.

High temperatures of late spring can cause herbicides to volatilize from a solid or liquid to a gas vapor. The vapor could be moved by wind and injure adjacent ornamental plants or

the neighbors' vegetables. Also, as the season progresses the plant matures and directs photosynthates (food) to leaf production and seed set and away from storage organs, such as the dandelion tap root or ground ivy stolons. Therefore, unless the herbicide is shipped with the plant's food to the storage organs, it will not be killed.

Fall applications of the above mentioned mixtures remain the most economical and efficient means of weed control. The introduction of *Confront* and *Gallery* from the DowElanco corporation in the last 5 years provides additional flexibility to fall weed management. *Confront*, a pre-mix combination of clopyralid and triclopyr (found in several Turflon formulations) is a post-emergence broadleaf herbicide. It is extremely active on clover and other hard-to-control weeds such as violets, ground ivy and oxalis. Two interesting aspects of *Confront* activity include its ability to control weeds at temperatures as low as 37° F and it has been observed to have some preemergence activity. *Gallery*, active ingredient isoxaben, is primarily a preemergence broadleaf herbicide that will control emergence of broadleaf weeds from seed—not from regrowth of perennial storage organs. It has been shown to be effective on all major broadleaf weeds, as well as good activity on crabgrass. Both materials are relatively expensive and not phytotoxic to the cool-season turfgrasses except *Confront*, which will injure creeping bentgrass.

The tank mix combination of *Confront* and *Gallery* could be applied late in the season when staff activity could be less hectic, play is slow (less potential exposure and perception problems) and grass growth is reduced. The *Gallery* will restrict overseeding operations the following spring. Also, the common three-way herbicide mixture could be combined with *Gallery*

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and applied earlier to achieve similar results. Either strategy will control existing plants and provide preemergence activity the following spring, thereby reducing the urgency of spring herbicide applications.

Annual Grass Management

Major turfgrass suppliers in the home lawn and garden area have done an exceptional marketing campaign over the years to convince homeowners to weed and feed in the spring. Logistically, this is easiest for the homeowner—one trip across the lawn stops the weeds and feeds the grass. Why not apply preemergence herbicides for grass control (including annual bluegrass) in the fall? Several researchers including myself while at Cornell, Watschke at Penn State and Dernoeden at Maryland have shown effective crabgrass control the following season with preemergence herbicide applications the previous fall. Pendimethalin and prodiamine (*Barriade*), were consistently most effective, while bensulide (*Betasan*) was effective in some years and not in others. Inconsistencies are most easily explained by surface disruption or degradation of the chemical to an inactive form.

For annual bluegrass control strategies Bruce Branham at Michigan State and Wayne Bingham at Virginia Polytech have shown good preemergence and occasionally postemergence control of annual bluegrass with pendimethalin and bensulide. Bingham found bensulide to be effective where large populations of the annual biotype were found and less on the perennial biotype. Branham has shown excellent preemergence and early postemergence control of annual bluegrass from fall applications of pendimethalin. Therefore, if you have considered an annual bluegrass reduction program, or are currently engaged in reducing annual bluegrass in your playing areas, these herbicides should be a component of the overall strategy.

Prograss

Postemergence control of annual bluegrass is available with the use of *Prograss* (ethofumesate). This herbicide is applied in the mid to late fall and controls annual bluegrass by apparently predisposing the plants to low-temperature kill. It is widely used on Perennial Ryegrass fairways because of its safety. However, if you read the golf course journals this spring from back east, many *Prograss* treated ryegrass fairways were severely injured and many suspect the *Prograss* contributed to the problem, by predisposing all the grasses to low-temperature stress.

Responsible corporate representatives such as John Turner from Nor-Am (now Agrevo) do not recommend *Prograss* use on courses with more than 25% annual bluegrass, unless an aggressive reduction program is underway. It is not labeled for greens and has been shown to injure Kentucky bluegrass when mowed less than 0.75 inch. Also, I have observed *Prograss* demonstrate preemergence activity, but this has not been confirmed scientifically. Interestingly, the Scotts Company is currently developing a granular *Prograss* formulation for use with their product line.

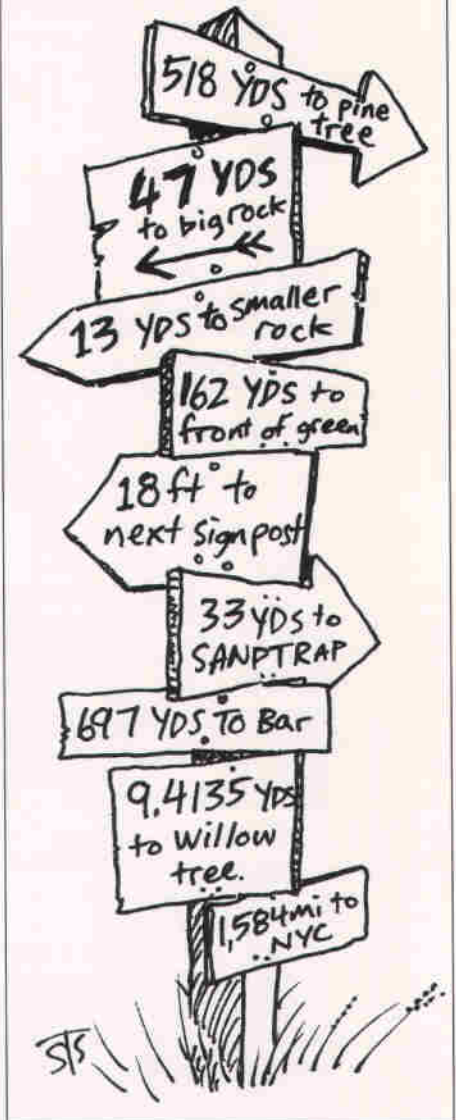
The bottom line on *Prograss* is that it is another tool in an annual bluegrass management strategy. As with all herbicides, if used carefully and correctly, it will provide exceptional results and will give your bentgrass the competitive advantage in the spring when annual bluegrass is usually first out of the gate.

Summary

The late summer and fall offer golf course superintendents wonderful opportunities for enhancing grass health the following year. Also, it is a great time to reflect on the season and set new personal and professional goals for the year to come. Experimenting and integrating new technologies into management programs will continue to be our industry's and the

world's greatest challenge. In the arena of weed management, exploit environmental conditions to enhance control programs that could aid with time management in the spring. And, if you are involved in annual bluegrass reduction programs utilize all available resources to exploit its biology as a winter annual and alter the competitive balance in favor of your desirable species. ♣

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