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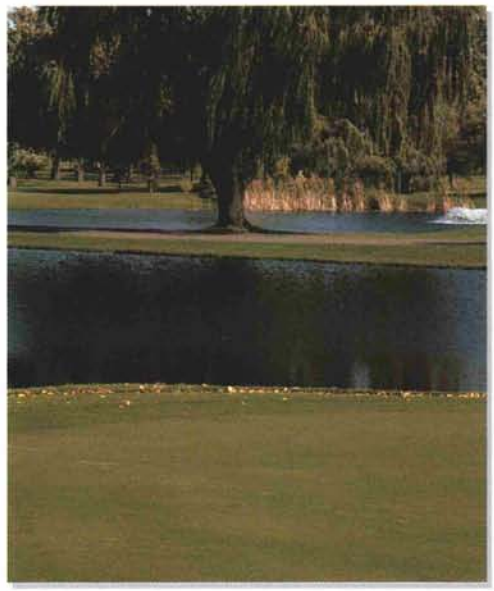
Front Cover
An aerial view of Schaumburg Golf Club.
(Photo courtesy of Nick Hongisto.)

The Midwest Association of Golf Course Superintendents (MAGCS), founded December 24, 1926, is a professional organization whose goals include preservation and dissemination of scientific and practical knowledge pertaining to golf turf maintenance.

We endeavor to increase efficiency and economic performance while improving and enhancing the individual and collective prestige of the members.

The MAGCS member is also an environmental steward. We strive to uphold and enhance our surroundings by promoting flora and fauna in every facet in a manner that is beneficial to the general public now and in the future.

You can play a round on us.



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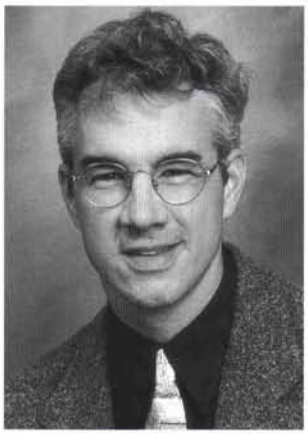

Brian Bossert, CGCS *Bryn Mawr C.C.*

Hats Off...

When Don Ferreri stepped down as president of the Midwest, he handed me off to an energetic group called the Green Industry. Some outgoing presidents give pardons, others give . . . oh well. In any event, I would like to highlight this group's recent activities.

What do the Green Industry, the MAGCS 75th Anniversary Committee, Dudley Smith, Albie Staudt and Danny Quast have in common?

The Green Industry conducted a survey last year: a fairly painful set of questions for agencies, institutions and others within the state, who produce, maintain, use or sell plant material to enhance human environments. Among other things, this survey was geared at assessing the economic importance of the green industry, documenting the structure of the industry and identifying the strategic issues for future development and study. Well, the economic story is ready for the telling.

- The value of green industry sales was nearly $2.9 billion—more than corn production, more than soybean production and larger than beef and pork production combined.
- The combined value of green industry product sales, service receipts and end-user payrolls amounts to over $3.9 billion.
- Maintained turfgrass area in Illinois equals over 1.5 million acres. Golf courses and driving ranges account for only 4.3% of that total.
- The combined workforce attributed to green industry activities, for all sectors in Illinois, totaled 159,769 with an annual payroll of over $1.74 billion. (I'll save you the math; average annual wage $10,890.)
- The fair market value of all assets directly associated with producing or maintaining green areas and plants in Illinois is over $8 billion.

It is the Green Industry's hope that this information will influence legislative initiatives and bring more research dollars to the sector. I recently attended a meeting with this group and was impressed to see roughly a dozen University of Illinois representatives in attendance. This is pretty serious business down on the campus! In the months ahead, a press release will go out statewide in the largest metro areas. The group, which includes representatives from roughly 17 associations, is also looking to form an umbrella group. This will improve our representation, and it is great to see these related groups working so closely together. In fact, a few MAGCS Board members were slated to attend a "Day at the Capitol" in late February. The meeting would be

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Fred Behnke *Mount Prospect G.C.*

The Long-Range Planning Committee:

Looking Ahead to Our Next 75 Years

It's getting close to opening day, and details are becoming more important. Suddenly, the jobs that we could put off (too cold, too wet, too tired) are close to being too late. The winter seems to pass sluggishly until you turn around and it's March. Here's hoping your staffing issues are resolved and your crew is intact for another season.

Golf course superintendents follow the calendar. Winter is the time to participate in seminars and educational opportunities, attend the national conference, show the family you actually do exist and do some future planning. What can we expect this year? How many years does the old pump station have left in it? Is that new biological fungicide worth a try? How am I going to get that asphalting project done without disrupting play?

The key to our success is your participation and support. The best organizational plan in the world vaporizes without dedicated people to implement it.

In this, our 75th year, the MAGCS is also doing some forward thinking. Our Long-Range Planning Committee is in the process of evaluating and reformulating our development plan. Thanks to the membership's outstanding response to last year's survey, the Board of Directors has some very solid data to use in establishing goals and priorities for planning. Participants in renewing the MAGCS long-range plan will be the Board of Directors, Past Presidents Council and the Long-Range Planning Committee, consisting of Fred Behnke, Michael Bavier, Brian Bossert, Jan Jarvis and Tony Kalina.

Here are some of the issues we are facing in the near future:

- **The Midwest Golf House Complex**—To what degree does the MAGCS align itself with this conjoining of allied regional golf associations? We are charter members, and it is very apparent that the facility has tremendous potential. How do we maximize the benefits? How much and how soon?

- **Human Resource Issues**—As golf continues to move from recreation to business, we need to anticipate and respond to issues like downsizing, mergers, economies of scale, liability, etc. It is no longer enough to be able to grow grass well. We need to continue to sharpen our managerial skills to remain marketable. What is the role of the MAGCS in this matter?

- **Membership**—We represent more than 250 golf courses and a like number of commercial enterprises in the Chicagoland area. We are among the largest chapters of the GCSAA. Is this good enough given

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Randy Kane, Ph.D. *Director of Turfgrass Programs, CDGA*

Suppression of Early Spring Seeding of *Poa annua L.*

Most of the Poa annua *biotypes inhabiting the golf courses of northern Illinois have a "winter annual" life cycle (Figure 1). Winter annuals germinate in autumn, overwinter in a vegetative state, set seed in the spring and then die during the heat of summer. Fortunately, most of the* Poa *north of I-80 survives the summer and behaves like a true perennial, thanks to better understanding of the plant's biology and careful management by superintendents.*

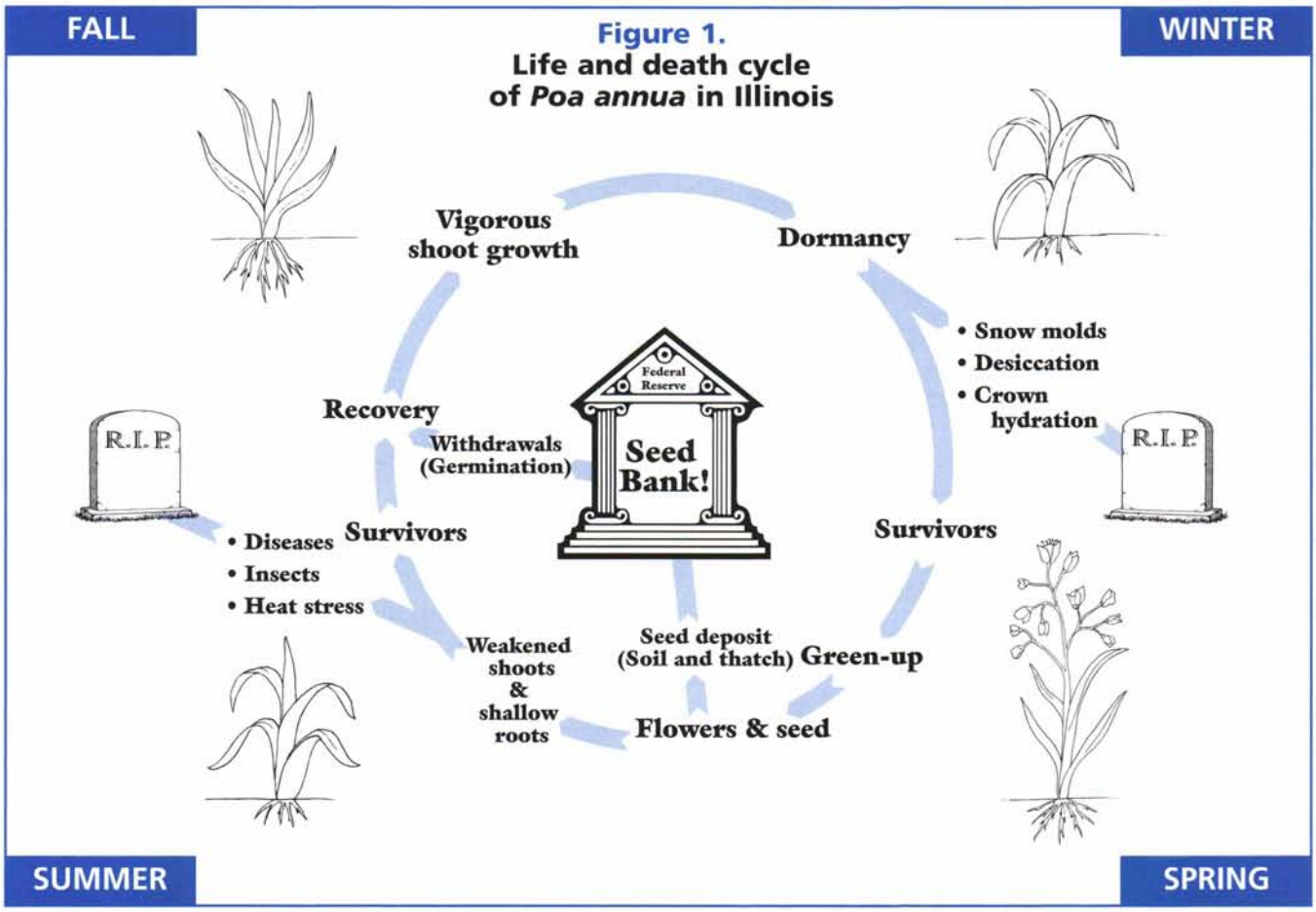
Several herbicides and plant-growth regulators are known to inhibit Poa *seeding . . . However, most products have problems with consistency of seedhead suppression, length of time seedheads are suppressed or phytotoxicity.*

Biotypes of *Poa annua* common to northern Illinois often seed profusely in late April through May, which can become objectionable for several reasons. First, profuse seeding can turn a *Poa*-contaminated green or fairway almost white in color, prompting questions about the health of the grass. Second, putting greens with significant *Poa* populations provide very poor putting surfaces in spring, because ball roll (speed and direction) can be adversely affected by seedheads (just ask Johnny Miller). Third, heavy seeding may not be beneficial for the long-term survival of *Poa*. Several theories suggest that seed production in *Poa* diverts too much photosynthate from vegetative tissues (i.e., leaves, roots), and a few studies do show reduced root depth and shoot growth after seeding. *Poa annua* that doesn't set seed (e.g., in treated plots) is usually better able to survive summer stresses.

So, how do you reduce or suppress *Poa annua* seeding in spring? Several herbicides and plant-growth regulators are known to inhibit *Poa* seeding, including older products like maleic hydrazide, endothall and mefluidide, or relative newcomers like paclobutrazole (Table 1). However, most products have problems with consistency of seedhead suppression, length of time seedheads are suppressed or phytotoxicity. Also, application timing and stage of plant growth is critical for best seed inhibition, and calendar dates for application may vary widely from year to year.

I first became interested in *Poa* seedhead suppression after writing an "Ask the 'Expert'" column for the May '96 issue of *On Course*. The best success was found using Embark (mefluidide), but timing and phytotoxicity problems were limiting its use. Several superintendents were using the wetting agent Aqua-Gro L to good effect, with more variable results but somewhat lessened phytotoxicity concerns. Also, many superintendents using gibberellin inhibitor PGRs (Cutless, TGR) reported some

Figure 1.
Life and death cycle of *Poa annua* in Illinois



seedhead suppression following early season treatments, although seedhead suppression was not the primary goal of that program.

I finally decided to try an onsite test to see if Aqua-Gro could consistently suppress seedheads compared to Embark. Also, I had heard that ethephon (Proxy) had shown good activity for *Poa annua* seedhead suppression in 1999 trials, and should be included in the study. Proxy is a "new" PGR for the turf market that may be safer and have more timing flexibility than Embark, and looks like a potential substitute for Aqua-Gro, which is no longer manufactured (and supplies are dwindling!). Also, last spring I was fortunate to receive a USGA Regional Research Grant-in-Aid thanks to Paul Vermeulen and the USGA Turfgrass and Environmental Research Committee, and additional monetary support from Aquatrols. These funds helped support the study described below (to be repeated and refined in spring 2001).

Table 1.
Chemicals that have been used for *Poa annua* seedhead suppression:

Common Name	Trade Name
maleic hydrazide	'MH'
chlorfluorenol	'Maintain'
endothall	'Endothal'
ethofumasate	'Prograss'
mefluidide	'Embark'
paclobutrazole	'Enhancer,''Trimmit'
ethephon	'Proxy'
flurprimidol	'Cutless'
trinexapac-ethyl	'Primo'
(wetting agent)	'Aqua-Gro L'

Needless to say, I had no trouble finding three superintendents in the Aurora-to-Oak Brook corridor who had *Poa*-infested greens and wanted to participate in my study (thanks to Dan Anderson, John Gurke, Dave Blomquist). The first treatments were applied April 18 (Aurora C.C., Fox Valley C.C.) and April 26 (Naperville C.C.), after much hand-wringing and GDD model-cranking to see if the "window" for applications was open. If you remember, last spring started and stopped several times beginning in February, so determining a spray date (especially for Embark and Aqua-Gro) was difficult.

(continued on page 10)

The products tested, application rates and intervals are summarized in Table 2, along with the results. The new wetting agent Cascade was included in the study for comparison to Aqua-Gro, which was applied on a seven-day interval (twice at 8 fl. oz. or three times at 8+4+4 fl. oz.). The plant growth retardants Enhancer (a.k.a. Trimmit) and Primo were also tested, since both have anti-gibberellin modes of action that stunt seed stalks but do not inhibit flower production. Embark was included as a standard of comparison, and because a new, lower-concentrate formulation is available that may make applications a little safer (Embark "Lite"—still no greens height label). Proxy was included at 5 and 7.5 fl. oz. rates after consultation with Professor Bruce Branham, who is also testing (on campus) Proxy and several other products for *Poa* seedhead suppression.

Results

Note that data from Naperville C.C. is not reported; only wetting agents were tested there, few seedheads were produced on the green and no treatment effects were observed. Seedhead suppression was estimated using a somewhat subjective visual rating scale beginning in early May and continued for about a month (five-six ratings). Table 2 shows the "high" or worst rating, "low" or best rating, and the average rating ("mean") for each treatment at Aurora and Fox Valley C.C.s. A rating of less than 1 (less than 2% seedheads) was an effective treatment compared to the check plots. Only Proxy and Embark provided that level of seedhead suppression in May 2000.

Enhancer- and Primo-treated plots had more visible seedheads than untreated check plots, although I am convinced no more seeds were produced by *Poa* plants on these plots. The greens in this study were mowed daily, so some seedheads were probably removed from check plots over time. Stunted seedheads on Primo and Enhancer plots were removed less by mowing, thus giving the elevated ratings. Wetting agent treatments showed little seedhead suppression, with the possible exception of the 8+4+4 fl. oz. Aqua-Gro regime at Fox Valley. This approach is used by John Gurke at Aurora, and he also noted little effectiveness on seedheads on the rest of his course in 2000.

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Seedhead suppression was estimated using a somewhat subjective visual rating scale beginning in early May and continued for about a month (five-six ratings).

Table 2.
Visual rating of *Poa* seedhead production in test plots at Aurora C.C. and Fox Valley C.C., spring 2000.

Rating (scale below) of % *Poa* seedheads measured between May 1 and June 8, 2000

Product (Formul.)	# Appl.	Rate/M	Aurora C.C. High	Aurora C.C. Low	Aurora C.C. Mean	Fox Valley C.C. High	Fox Valley C.C. Low	Fox Valley C.C. Mean
Untreated Check	—	—	2.3	1.0	1.6	2.3	0.8	1.4
Aqua-Gro L	2	8 + 8	2.3	1.3	1.7	1.5	0.7	1.1
Aqua-Gro L	3	8+4+4	2.8	0.7	1.6	1.3	0.4	0.8*
Cascade L	2	4 + 4	2.2	1.2	1.6	2.0	0.8	1.3
Enhancer 2 SC	2	0.25, 0.18	2.8	2.3	2.5	2.7	1.8	2.2
Primo 1 EC	1	0.5	2.1	1.5	1.8	2.3	1.4	1.9
Embark 0.2SLT&O	1	1.8	1.2	0.1	0.5*	0.7	0.1	0.4*
Proxy 2 SL	2	5.0	0.9	0.1	0.5*	0.7	0.1	0.3*

Rating Scale	Estimated % *Poa* seedheads
0	0-2%
1	2-10%
2	10-25%
3	25-50%
4	50-75%
5	75-100%