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ABOUT THE COVER

Landscape artist Jennifer L. Samerdyke has captured the essence of a golf course in Wisconsin in the winter. Titled "No Golf These Days," the scene portrays a sense of tranquility, quiet and contentment. The ice on the lake, the snow covered hills and the snow fenced putting greens present a scene repeated many times in our state this time of year. It is also in stark contrast to the view you would see in July. That contrast is part of the appeal of golf course management in Wisconsin.

*Every now and then go away,
 have a little relaxation,
 for when you come back to your work
 your judgement will be surer,
 since to remain constantly at work
 will cause you to lose power of judgement.*

*Go some distance away
 because the work appears smaller
 and more of it
 can be taken in at a glance,
 and a lack of harmony or proportion
 is more readily seen.*

- Leonardo da Vinci, 1452-1519

THE GRASS ROOTS

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EDITOR AND PUBLISHER
 Monroe S. Miller
 Blackhawk Country Club
 P.O. Box 5129
 Madison, WI 53705
 groots@globaldialog.com

EDITORIAL STAFF AND BUSINESS AFFAIRS
 Dave Brandenburg
 P.O. Box 314
 Theresa, WI 53091



BOARD OF DIRECTORS
 Front row: (L-R) Mike Lyons, David Brandenburg, Kris Pinkerton, Marc Davison. Back row (L-R) Mike Berwick, Randy Witt, Gordon Waddington, Scott Schaller and Mike Kactro

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ASSESSMENT

By **Kris Pinkerton**, Golf Course Superintendent, Oshkosh Country Club



It seems this past golf season ended as fast as it started. All of our preparation and energy put into getting an early start for the season was repeated in an effort to end the season as effectively. Our courses lie now in dormancy. For most superintendents, winter will be a welcomed break, a shifting of gears so to speak. For others there may be a re-tooling to make next season's efforts better.

First and foremost, after what turned out to be a very long season, it may be time for a break. A break for some may come in the form of abstinence, whether it be an extended weekend, a couple of weeks off or maybe even a few months for some of us. Completely shunning from work for a period of time may do us all some good! You might also "depressurize" by catching up on some reading. Golf Course Management, Superintendent News, Green Section Record and many more are all stacked up, waiting to be read. Still other superintendents may have some teaching commitments in the offseason. Finally, we can not forget about the importance of edu-

cation this offseason. Attending seminars and conferences plays a critical role in our professional development.

This is also the time of the year that we can look back over the season gone by. If your golf season was not so good, this is the time to fix it, and an analysis of past practices can sometimes reveal problems that may be corrected for the future. Pull out your programs, records or expense reports and give them a good objective look. Were the goals you set forth last winter met with satisfactory success? Are there any irregularities? What about inconsistency in "budget vs. actual" for each account on your expense report? I concluded that I had lost focus of the original intent of my fungicide program by mid-June last season. Now I must vow to be better prepared to start the new season.

Making changes is often more difficult than identifying them. It may very well be worthwhile to at least consult your fellow superintendents. Or how about a call or e-mail to one of the many University of Wisconsin-Madison specialists and professors that we have available. Whether or not you seek help or intend to take matters into your own hands, the time to make changes is now! Allowing yourself and staff the most time available to become comfortable and confident with the changes you make will help you be better prepared for when we do thaw out.

So whether you choose to rest, catch up on your reading, plan for the next golf season, or do a well rounded mixture of all of the above as you prepare for the next season, remember that "application and thought forge many an art."

God Bless You In The New Year! 🌿



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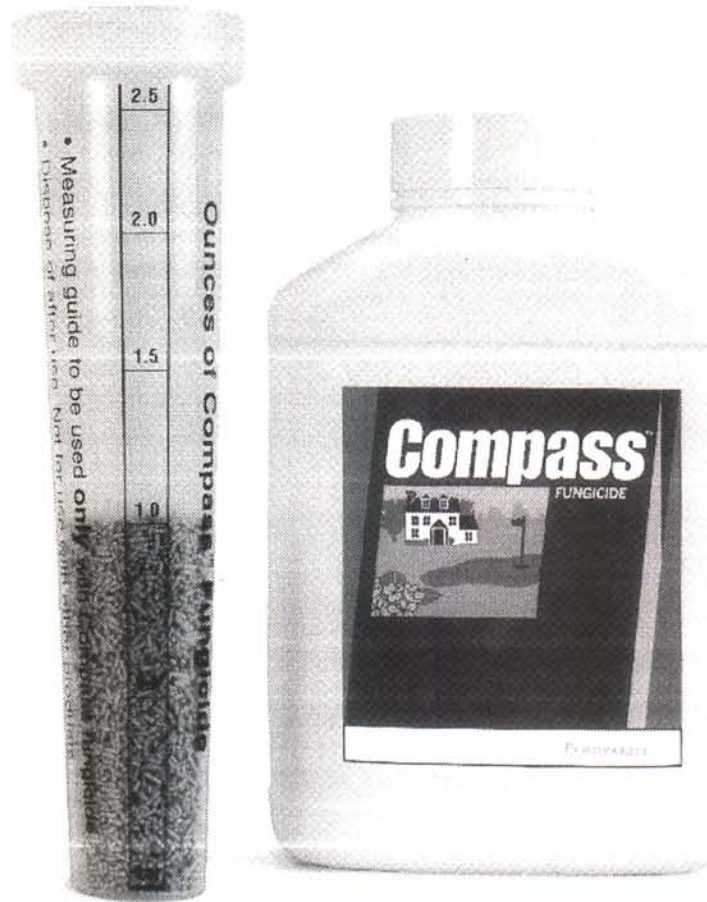
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Genes, Guns, and Turf

By Dr. John C. Stier, Department of Horticulture, University of Wisconsin-Madison

Fill up the tank with Roundup, make a pass over the putting greens, and no worries about *Poa annua* or other weeds. Sound too good to be true? In this case, it might not be.

The first genetically altered turfgrass was transformed about five years ago. Plant transformation can be a tricky and expensive business. Here's how it works in turf and most other monocots: Seed or other plant tissue is placed on a plastic dish (Petri plate) filled with a Jello-like growing medium con-

taining a specific mixture of hormones (auxins and cytokinins). These cells grow and form an amorphous mass of undifferentiated cells called callus (the process is called tissue culture). Microscopic gold or tungsten particles are coated with DNA containing the genes of interest, and fired into the callus from a 22-caliber shell using a device popularly referred to as the "gene gun". One of the genes is likely to be a "selective marker", the other a gene for a desired trait such as herbicide tol-

erance or drought resistance. The genetic material will be successfully integrated into only a few of the cells (i.e., transformation). The treated callus is placed onto another Petri dish containing a compound that will selectively kill those cells or callus that have not been successfully transformed. The survivors are those into which the genetic material has been successfully placed. These callus are regenerated into plants by growing them on plates of more hormone-containing media. When large

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enough, the plants are placed in soil and transferred to the greenhouse and/or the field. Here they can be used for breeding programs or for seed production and testing.

Another method for producing genetically modified plants is protoplast transformation. The plant cell walls are digested with enzymes (e.g., cellulases). The protoplasts are incubated with DNA in a glycol:buffer solution. The glycol helps the protoplasts absorb the DNA. Short, intense pulses of electricity (electroporation) are sometimes used to form tiny holes in the protoplast membrane and facilitate uptake of the DNA. The transformed protoplasts are regenerated into callus with the rest of the process being similar to that explained above.

Other transformation processes exist and have been used with great success for other crops. The most common procedure is to insert the genes of interest into *Agrobacterium tumefaciens*, a bacterial pathogen that causes crown gall on dicots (trees, tomatoes, etc.). The *A. tumefaciens* is first disarmed by removal of the DNA segment that causes the gall. This method is not used in turf because the bacterium does not infect monocots. A related organism, *A. rhizogenes*, has been tried with limited success.

The most difficult aspect of genetically modifying turfgrasses from a scientific standpoint has been regenerating the plants using tissue culture methods. The media contain many different ingredients (sugars, salts, hormones) and minor changes cause great effects. In a symposium held at Michigan State University just a few years ago on biotechnology in turfgrasses, many of the presentations focused solely on methods to regenerate turfgrass plants using tissue culture.

One of the most successful scientists was Dr. Lisa Lee, then at

Rutgers University. By 1996 she and her colleagues had published research papers on genetic modification of several bentgrass varieties (Lee et al., 1996; Lee and Day, 1998). The main focus was inserting a piece of DNA termed the *bar* gene. This gene conferred

resistance to an herbicide then known as bialophos (now termed glufosinate). We know it as the active ingredient in the herbicide Finale.

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seed and fertilizer industry in the U.S. About the time Dr. Lee was learning how to transform bentgrasses, O.M. Scotts was negotiating with Monsanto Corporation for rights to use the gene for Roundup resistance in turfgrasses. While eventually successful, they also needed the ways and means to transform the plants. They needed the gene gun.

Sanford Scientific owned the patent rights for the gene gun. Additional negotiations and a partnership with Sanford Scientific provided O.M. Scotts Co. with exclusive access to use the gene gun for turfgrass transformation. They now had the gene and the means to transform the grass. One final piece of the puzzle remained, or so it seemed.

To put the final piece of the puzzle together, O.M. Scotts needed someone who knew how to use the gene gun and how to regenerate turfgrass plants using tissue culture. They were able to hire Dr. Lee, and for a moment the sun shined brightly. Transformations went well. O.M. Scotts will likely have Roundup-ready creeping bentgrass for sale by 2001. Roundup-ready Kentucky bluegrass could be here within the next three to five years. But since then a few clouds have rolled onto the horizon. Government regulations require compliance. Part of the problem is that since genetic transformation of plants is a relatively new social and economic force, the regulations are still evolving. Government agencies are still winnowing and sifting through their territories, attempting to define who has what jurisdiction, and when. Public antipathy has reared its head, with vandals striking at groups who conduct research attempting to address the safety of genetically modified organisms. Other issues such as the potential development of herbicide resistance in *P. annua* pop-

ulations are starting to surface. Rumors abound about other transformations: 1) "Scotts has transformed turfgrasses with the luciferase (firefly) gene so turfgrasses can glow in the dark, allowing golf to be played at night", or 2) "Scotts will soon be marketing turfgrasses to homeowners in designer colors—red, orange, blue, etc.". These rumors are false. In order to deal with public misunderstanding, all of us must be prepared and knowledgeable to utilize this new technology of the 21st century.

Authors note: *The idea for this article came to me as I watched a class of turf students attending a lecture on biotechnology in turf. Many of the students, top students for the most part, struggled to keep pace with the lecture. Some seemed to have difficulty comprehending the basic subject matter (many college students, especially potential legislators in the arts and sciences, do not take a single genetics course). This bothered me as it is often up to golf course superintendents to speak up for turf management issues in the public eye. The availability and use of genetically modified turfgrasses will be no exception and may even be more contentious than environmental issues. Clearly an understanding of the technology is needed. Our department teaches a "Survey of Horticulture" course for non-majors and attracts many non-science students. The curriculum now includes content to help them appreciate the aspects of genetic engineering. Will it be too little, too late?*

Next issue: *The promises, pitfalls, and ethics of genetic transformation of turfgrasses.*

Literature Cited

Lee, L., C.L. Laramore, P.R. Day, and N.E. Turner. 1996.

Transformation and regeneration of creeping bentgrass (*Agrostis palustris* Huds.) protoplasts.

Lee, L. and P. Day. 1998. Herbicide-resistant transgenic creeping bentgrass. In M.B. Sticklen and M.P. Kenna (eds.) Turfgrass biotechnology: Cell and molecular genetic approaches to turfgrass improvement. Ann Arbor Press, Chelsea, MI. ♣

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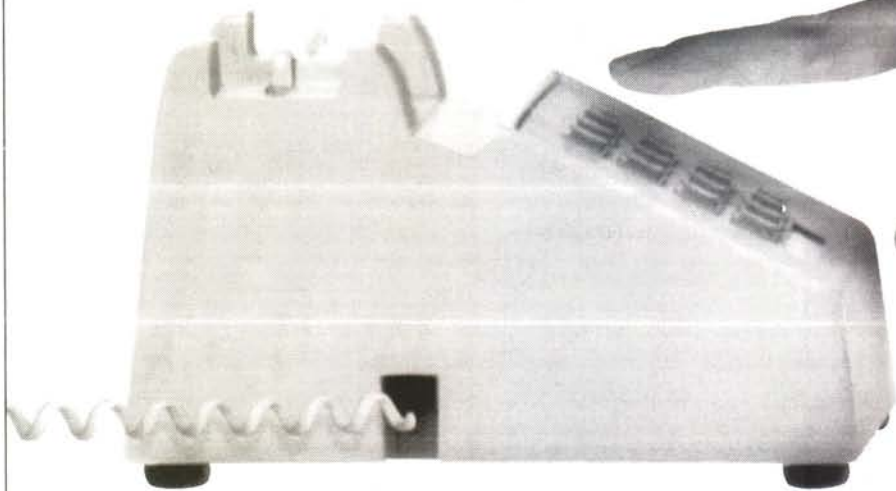


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“What’s Up With All These Ladybug Beetle Look-alikes?”

By Dr. R. Chris Williamson, Department of Entomology, University of Wisconsin-Madison

In the *Poa trivialis* section of the November/December issue of *The Grass Roots*, the question was asked by Cubby O'Brien; “What’s up with all these lady bug beetle look-alikes?” Consequently, I was compelled to respond to this question by providing you with information on the history, biology, and control options for this insect.



Multicolored Asian Lady Beetle Adult (photo by USDA-ARS)

So what is this lady beetle, where did it come from, and how can we control this “pest?” Many of you have seen or experienced the hundreds upon thousands of lady beetles that appeared in massive numbers in late-September through early November. This beetle is the multicolored Asian lady beetle, *Harmonia axyridis*. Because it is seen in large congregations on buildings around the end of October, is frequently referred to as the Halloween beetle. This beetle is a beneficial insect that is native to Asia. It was first imported from Japan and released in the United States sometime around 1916 by the USDA (United States

Department of Agriculture) in an attempt to naturally (i.e., biologically) control the Chinese soybean aphid as well as other aphids and insect pests. Since 1916, numerous releases throughout the eastern U.S. by federal, state, and private researchers, as well as accidental entries of beetles on imported nursery materials have resulted in the spread and establishment throughout the Midwest and the

Southeast.

The multicolored Asian lady beetle is quite similar to lady beetles that are commonly found throughout the U.S. Like common lady beetles, the multicolored Asian lady beetle feeds on insect pests including aphids, certain scales and a few other insects. It inhabits numerous trees including maples, walnut, willow, and oak, and it can be found in orchards and forests, but may also occur in gardens and on row crops. This lady beetle is an effective predator of aphids on pecans, pine trees, ornamental shrubs, roses, and other plants. Lady beetle populations





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