Bluebirds–

(Continued from Page 10)

and identifying and fixing various prob lems that appear on the trail throughout the summer. Without a trail monitor, bluebird trails are counterproductive. Therefore, such trails should be removed. The same can be said for unmonitored

purple martin houses that double as house sparrow production factories. Please monitor them or take them down - native cavity-nesting birds will thank you!

If you don't have the time to monitor your trail on a weekly basis, it is time to look for help. At Keller GC, we have two families that volunteer to monitor our trail on a weekly basis and both have been doing so for many years. We keep a weekly record of activity for each and every nest box on our trail. Finding a trail monitor for your trail could be as simple as asking your membership for volunteers. Birding is a popular pastime in the U.S. and your members may pleasantly surprise you with their knowledge and interest in birds. It never hurts to ask! If you are unsuccessful exploring the membership avenue, I would suggest you contact your local or regional nature center. These facilities work with many volunteers and often maintain lists of residents looking for volunteer opportunities. Once again, a quality reference book is helpful for training volunteers, if needed.

So why should you get involved with bluebirds? The reasons are endless but here are a few:

~ Take personal pride and satisfaction in knowing that you are assisting with the recovery of bluebird populations.

~ Once your trail is set up, time and monetary requirements are minimal.

~ Another arrow to shoot back at the anti-golf community.

~ Endear your environmentalist friends.

~ Educate, enlighten, and raise the awareness of your membership or customers regarding bluebirds and your bluebird trail.

~ A great public relations project with highly visible results.

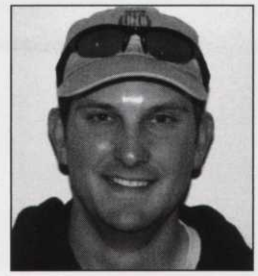
~ Watching these birds, up close and personal, develop from eggs to beautiful blue adults may stir something deep inside you. It can be addicting!

~ Another valuable tool to help keep insect populations in check.

~ Provides a reason to dust off your woodworking skills and put them to use.

~ You may just like it!!!!!!

The Roles of the Assistant Golf Course Superintendent



By CHRIS TRITABAUGH
Assistant Golf Course Superintendent
Town & Country Club, St. Paul

Years ago the job of a Golf Course Superintendent was much different than it is now. Golf Course Superintendents used to be called greenkeepers or the more degrading term, grass farmers. As the golf course maintenance business has become more sophisticated, the job description of a Golf Course Superintendent has moved further from grass farmer and closer to business manager. Because of this, the role of the Assistant Golf Course Superintendent has also changed over the years. There is no doubt the Golf Course Superintendent will always hold the greatest responsibility and in turn face the greatest pressure when maintaining a golf course, but the person responsible for playing the most roles on a turfgrass maintenance crew might be the Assistant Golf Course Superintendent. On any given day an Assistant Golf Course Superintendent may need to be a manager, agronomist, student, teacher, and even a mechanic. These days a superintendent's attention is being pulled in many different directions leaving him or her unable to focus all of his or her attention on the golf course. This makes it necessary for the assistant to play all of these roles well to ensure the superintendent can return to a smooth running golf course.

> *"Most of us currently working as Assistant Golf Course Superintendents have yet to achieve our career goal. There is the next level out there for which we strive."*

The most important and traditional role an Assistant Golf Course Superintendent must fill is that of a manager. It is also a role for which there is really no technical training. Being a manager requires strong leadership and people skills and while these skills come naturally to some people others have to work hard at them. Most assistants are given the task of organizing the crew and their daily assignments.

Each day Town & Country's other assistant, Jeramie Gossman, and I work to come up with the most efficient crew flow. We make sure the morning jobs are assigned, while keeping afternoon tasks in mind. For example, if two crew members are going to be working on the same project in the afternoon, we give them morning jobs that will finish at the same time. This way one worker is not sitting around waiting for the other to finish his or her morning job before being able to start on the next project. I always consider this flow for each day, week and even month.

I spent my early years in this business working at Albany Golf Club. Golf Course Superintendent Tom Kasner and his assistant Mickey Saatzer created a great working atmosphere. Working at Albany Golf Club on a crew with great camaraderie showed me how important crew morale is to both working and course conditions. Coming up with ways for the crew to interact is a great way to improve the camaraderie and morale.

One of the ways many courses do this, is by having "shop games". Last summer I made a game called "polish horseshoes" out of PVC pipe and golf balls. The crew challenges each other and games are often played during our lunch break. A good game always seems to send the crew back to the course in a good mood.

The next role an Assistant Golf Course Superintendent must fill is that of agronomist. Unlike managerial skills, agronomy is where most assistants have received their education. In most cases the superintendent is going to make the final decisions on matters of agronomy but, it is important for the assistant to be able to identify problems including disease, fertility and irrigation.

I usually like to use my time in the morning to scout the golf course for problems. As I make my way around the golf course doing quality control and checking on the crew, I make an effort to see every green and tee, paying special attention to problem areas. Over the years I have found it is easier to see all areas of the golf course if I follow the holes in order, rather then just following the maintenance route. Driving the course this way forces me to not only see every green and tee, but also the fairways and other areas between the tees and greens.

(Continued on Page 13)

Roles of an Assistant –

(Continued from Page 12)

Another great way to scout the golf course is by playing golf. This allows you to see the course from a golfer's point of view without being interrupted by something that might come up during the workday.

Another important role the assistant superintendent must play is that of a teacher. During the course of a season an assistant superintendent may be asked to teach by training new crewmembers or by helping a student intern learn something new about the business. Good teaching skills will result in a better crew because when training you will be better able to communicate the level of quality expected for each job. When they get proper training, the crewmember learns how to do the job right the first time rather then picking up bad habits, which usually lead to poor work quality.

On occasion an assistant might have the opportunity to help a crewmember, even though that person might not be heading for the golf course business. For example, we had an employee at Town & Country who never wanted to put forth that little bit of extra effort. This person would mow over sticks, neglect to whip clippings after mowing, or fail to stop and pick up a piece of trash. After many failed attempts to correct the problem I became frustrated and lost my cool. Later, after calming down I went to the crew member and told him, someday you will be looking for a job and employers are going to be looking for someone that goes the extra mile without being asked. I said a habit of passing up opportunities to go that extra mile is not going to serve him very well in the future. From that day on he was much better at putting forth a better effort. A situation like this is what I usually find to be the most rewarding.

As important as it is for an assistant golf course superintendent to be a good teacher, it is probably more important to be a good student. An assistant superintendent must always look for opportunities to learn something new. The quality of your current golf course and more importantly the quality of your career depend on it. Anytime someone new joins our crew from a different golf course, I try to find out how he or she may have done something different at the other course he or she worked at. While it might not be possible to implement a new idea at your current course, there may be a day when you have your own course and can use the idea. As an assistant, you may not always feel as though your voice is heard on different matters. If I have an idea that does not get used, I try to think about why this was the case. Would my idea have worked? Why or why not? Is there something that comes up down the line that would have made my idea more or less successful? I try and get myself to think outside the box in this way whenever I get the chance. There are many variables affecting every decision on a golf course. If you can train yourself to think outside the box, taking all variables into account when making decisions, the chances of those decisions being successful will increase greatly.

"Anytime someone new joins our crew from a different golf course, I try to find out how he or she may have done something different at the other course he or she worked at."

In anyway I can, I am always trying to find out more about the business. Whether it be reading trade magazines or talking to people in the business. It is great when I get the chance to pick the brain of someone who has been in the business for many years. Just the other day I was talking with a person who used to be a superintendent and now has his own business. Sitting and chatting with a person like that is so valuable to a young person looking to move up in the industry. You just never know when something you hear may benefit you down the road.

I also enjoy opportunities to pick the brain of our equipment technician at Town & Country, Mike Romundstad. I have learned a lot about equipment and reel maintenance, engine care and painting from him over the years. Helping out and asking questions are great ways to learn. Anytime you have a chance to learn from people in this business, be it superintendents, sales people, turf students, or equipment technicians it increases your own catalogue of knowledge. Finding ways to build your catalogue of knowledge will give you a great chance of being successful in the future.

Most of us currently working as Assistant Golf Course Superintendents have yet to achieve our career goal; there is the next level out there for which we strive. Becoming a Golf Course Superintendent is not an easy goal to reach and with more people gaining turfgrass degrees it is only going to get more difficult. As assistants we should be looking for an edge, something that is going to get us where we want to be a little bit faster. This business does not offer a guarantee of making lots of money and praise from employers is often in short supply; dedication, passion and a love of the job are what push us towards our ultimate goal. If you have these traits you must take every opportunity to learn as much as you can to help yourself reach the next level. One of the truly unique things about this business is that even though we compete against each other for jobs and our courses compete against each other for business, we are always looking out for each other. We are always trying to help the next guy be as successful as possible.

Install Confidence.
Install Rain Bird®.

Rain Bird understands that renovation is a major commitment, and we want to be your complete renovation partner. Whether your goals include modernization, improved playability or the need to meet strict watering regulations, we can help you justify and implement a cost-efficient renovation package that's right for you.

Rain Bird products and services offer the unique ability to combine innovation with versatility. We know that your irrigation requirements change with time, so we ensure that our latest innovations will always be compatible with your existing Rain Bird system.

After the installation is complete, we'll be there to help you maintain the quality of your entire system—from central controls to sprinkler heads. Rain Bird knows that a successful renovation includes quality products, excellent service, and a complete commitment to our customers.

So choose Rain Bird, relax, and renovate with confidence.

HYDROLogic® Water Management Systems

RAIN BIRD®

Call your Hydrologic Representative Authorized Rain Bird Golf Distributor 763-542-1188 or 800-422-1487

Anthracnose

By RICHARD LATIN
Professor of Plant Pathology
Purdue University

Anthracnose is caused by a fungus (Colletotrichum graminicola) that survives and thrives on dead and decaying organic matter. Although anthracnose may occur occasionally in turf maintained for athletic fields, professional landscapes and residential lawns, it is largely a disease of intensively managed annual bluegrass and creeping bentgrass used on golf courses. Under stressful summer conditions, the pathogen may cause a foliar blight. During cool wet periods in spring the fungus can cause a basal stem rot on annual bluegrass and creeping bentgrass. It is not clear how the foliar blight and basal stem rot diseases are related.d

Foliar Blight Anthracnose

A variety of summer stresses predispose turfgrass plants to the foliar blight

Figure 1

phase of anthracnose. These stresses include heat, drought, nitrogen deficiency, close mowing and compaction. Stress leads to premature decline and senescence and limits the potential for turf recovery. There also is evidence that certain herbicides and plant growth regulators contribute to stress that predisposes plants to anthracnose infection. Under these stress conditions, dead leaf blades are readily colonized by the anthracnose fungus. When conditions are especially favorable, green leaf tissues and possibly crown tissues are infected, resulting in serious damage to the turf stand.

From a distance, anthracnose-infected turf tends to have a yellow-orange cast and appears to lack its usual vigor. Areas of affected turf are not well defined although they may occur in clusters (Figure 1). Irregularly shaped tan leaf spots may occur on infected leaves. The occurrence of anthracnose leaf spots on green leaf tissues is an indication of aggressive disease activity. More often, infected leaves turn yellow and decay from the tips downward. The pathogen also produces huge quantities of spores on infected leaves within specialized structures called acervuli. The acervuli also contain dark, brittle-like features called setae that serve as diagnostic signs of the disease (Figures 2 and 3). These setae are easily visible with a 10x hand lens. The foliar blight anthracnose spreads by rain-splashed and win-blown spores and does not result in any visible surface mycelium.

Basal Rot Anthracnose

The basal rot anthracnose is favored by stress triggered by low mowing, deficient nitrogen levels and practices that wound plant tissues (topdressing and verticutting). This phase of anthracnose appears to be especially severe on putting greens. It seems that annual bluegrass is most vulnerable to basal rot infection during cool wet spring conditions. Extensive symptom expression and turf damage may not appear until plants suffer summer stress.

Basal infection causes rapid chlorosis and decline of individual plants. Leaves turn yellow-orange, usually beginning at the leaf tips. Close inspection of affected areas reveals numerous dime-sized spots of symptomatic plants. Crown tissues of infected plants have a dark necrotic appearance from which the disease takes its name (Figure 4).

Non-chemical Management Options

Annual bluegrass and creeping bentgrass varieties appear to be equally susceptible to anthracnose infection. It is likely that those varieties with improved tolerance to summer stress will suffer less from anthracnose outbreaks. Avoiding

Figure 2

and/or relieving plant stress in spring and summer will make an important contribution towards limiting the damage associated with anthracnose. Spoon feeding small amounts of nitrogen fertilizer (0.1 - 0.2 lb N per 1000 sq ft) during summer months will help plants maintain vigor during periods of slow growth. Syringing vulnerable turf during the heat of the day will help relieve heat and drought stress. Also, re-directing traffic may reduce stress associated with wear and tear and perhaps relieve some of the effects of compaction.

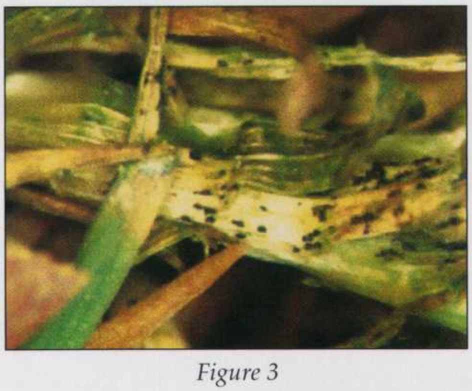


Figure 3

On golf greens with significant annual bluegrass populations, practices that promote the development of healthy turf (such as aeration and topdressing at appropriate times in fall and spring) will help turf tolerate the effects of extended periods of summer stress. Finally, raising

(Continued on Page 17)

Anthracnose–

(Continued from Page 15)

the height of cut will reduce exposure to anthracnose infection and hasten recovery from damage.

Control with Fungicides

Anthracnose development can be limited by the application of effective fungicides at appropriate times. Protection by contact fungicides that inhibit spore germination will limit the extent of severe outbreaks, especially during periods of hot, rainy weather. Contact fungicides that are registered for anthracnose control include chlorothalonil products (Daconil and others). Systemic fungicides such as Heritage, Cleary 336 and DMI products (Banner Maxx, Bayleton and Eagle) are very effective. The local systemic fungicide Compass also is effective against anthracnose.

Timing of fungicide applications is critical for satisfactory disease control, but there appears to be little data from which to draw valid conclusions regarding timing. Best results have been achieved where outbreaks were anticipate and applications were applied prior to symptom expression. Although effective fungicide will decrease the progress of foliar blight during summer months, sprays applied during cool, wet spring conditions will suppress early infections and limit the extent of subsequent foliar blight.

Iprodione and vinclozonil fungicides (eg. Chipco 26GT and Curalan) are not effective against foliar anthracnose. Prostar, an excellent product for brown patch control, also is not effective against anthracnose.

There have been recent reports of strains of the anthracnose fungus that are 'resistant' to strobilurin fungicides. Therefore, turf managers who rely on fungicides for anthracnose control should implement practices that reduce the risk of resistance. Such practices include tank-mixing systemic products with contact fungicides, avoiding the use of the same or similar fungicides for consecutive applications of related fungicides during the season. Most product labels for systemic fungicides include a discussion of resistance management strategies.

Figure 4

Control of Winter Injury Caused by Ice Cover On Poa annua and Agrostis palustris

By D. K. Tompkins, J.B. Ross and D.L. Moroz

A lab study compared the effect of ice cover and ice encasement with a control treatment (no ice) on Poa annua and Agrostis palustris plants. There were no significant differences between the ice cover and ice encasement treatments. Poa annua plants were dead after only 60 days covered with ice. In contrast, Agrostis palustris plants had LT50 values of -26° C after 90 days of ice cover and -16° C after 120 days of ice cover.

A related field study compared the effects of snow cover, snow removed in February, ice cover and ice removed in February for Poa annua and Agrostis palustris plants. Poa annua plants that had been ice-covered were mostly dead by late February, a period of about 40 days. Agrostis palustris plants in all treatments could tolerate temperatures below -20° C into April. However, plants from plots where the snow and ice were removed had reduced levels of cold hardiness.

The goal of this study was to determine under controlled and field conditions whether the problem with winter injury associated with ice cover, is due to:

+ prolonged ice cover

+ reduced cold hardiness associated with crown hydration

+ or rapid dehardening that can occur as a result of exposure to higher temperature when the ice cover is removed.

Materials and Methods

Lab Study Poa annua and Agrostis palustris plants were cold hardened and then tested to determine their baseline LT50 value. These plants were then stored in a freezer at -4° C for various periods of time: 60, 90, 120 and 150 days. Plants of each species were stored under three different conditions: control, ice cover and ice encasement. The control treatment plants were covered with snow to prevent desiccation, but were not covered with ice. Plants in the ice cover treatment were covered with 2.5 cm of ice. The ice was added gradually by misting. Plants in the ice encasement treatment were immersed in water and then frozen.

After the appropriate interval in the freezer, plants were subjected to a freeze test in a circulating bath. In the bath, the temperature was decreased by 20 C/hour and plants were removed at selected temperatures. Following the freeze test, plants were transferred to the greenhouse for 4 weeks. After 4 weeks, plant regrowth was rated for survival to establish LT50 values (i.e. lethal temperature for 50% of the plants). The experiment was performed using a split plot design with four successive freeze tests used as replicates. Main plots included the two species: Poa annua and Agrostis palustris. Subplots included: control, ice cover and ice encasement. When treatment effects were significant based on ANOVA, LSD's were used for mean separation.

Field Study Field plots were established in a split plot design with four replicates. Main plots were species: Poa annua and Agrostis palustris. Subplots included the following treatments:

+ snow cover maintained as long as possible

+ snow removed in February ice cover maintained as long as possible and

+ ice cover removed in February.

Plants were sampled on December 8, 1997 to determine baseline hardiness levels. It was not possible to establish ice on the plots until the week of January 5-9, 1998 due to the warm weather. Snow and ice were removed from the appropriate plots on February 22 and 23, 1998. LT50 values were determined at this time and also in late March and April. This roughly corresponded to 45, 60 and 90 day intervals.

Table 1. Effect of ice cover on LT50 value (°C) for Poa annua and Agrostis palustris plants stored under controlled conditions.

Species	baseline	60 days	◊90 days	120 days	150 days
Poa annua	-21	0a	0a	0a	0a
Agrostis palustris	-38	-37b	-26b	-16b	0a

1 Within a column, means followed by the same letter are not significantly different at p=0.05 (LSD).

Results to Date

There were dramatic differences between the two species (Table 1). Baseline LT50 values were -21° C for Poa annua and -38° C for Agrostis palustris. plants maintained reasonable cold hardiness levels for at least 120 days.

Agrostis palustris plants that were

(Continued on Page 19)

Winter Injury –

(Continued from Page 18)

either covered or immersed in ice had reduced cold hardiness compared to the control treatment (Table 2). By 90 days, the differences were statistically significant and by 120 days the level of cold hardiness was greatly reduced compared to the control treatment.

Table 2. Effect of ice cover treatment on LT50 value (0C) of Agrostis palustris plants stored under controlled conditions.

Ice Cover Treatment	baseline	60 days ◊	90 days	120 days	150 days
Control	-38	-36a	-33a	-30a	-8a
Ice Cover	-	-37a	-26b	-16b	0b
Ice Encased	-	-32a	-24b	-18b	0b

1 Within a column, means followed by the same letter are not significantly different at p=0.05 (LSD).

Field Study

The first year of the field study was conducted this past winter. The weather conditions were less than ideal, as the weather was unusually mild particularly in the early part of the winter. Consequently, it was not possible to establish an ice cover until early January.

As in the controlled environment study, the Poa annua was much more susceptible to ice injury than the Agrostis palustris (Table 3). Poa annua plants evaluated on Feb. 23, 1998 that had been covered in ice for 45 days were dead. Consequently, there was no difference between the ice cover and ice removal treatments for Poa annua.

For the Agrostis palustris plants, there were no relevant treatment differences until April, 1998. By this time, all plants were starting to lose cold hardiness due to the warming temperatures. In the plots where a cover was maintained, whether snow or ice, better levels of cold hardiness were retained into the dehardening period.

Future Plans

The first goal of the research was to more precisely determine the period of time that Poa annua can tolerate under ice cover. A second goal is to confirm, under both lab and field conditions, that the period of time that Poa annua can withstand ice cover is really as short as it appears to be from last years research. For example, last year was an abnormal year weather wise, and other factors may have contributed to the early demise of the Poa annua plants.

(Editor's Note: This article was re-printed from the February/March 2000 issue of Turf Line News with permission from the Western Canada Turfgrass Association.)

Table 3. Effect of snow and ice cover treatment on LT50 values (0C) for Poa annua and Agrostis palustris plants grown in the field during the winter of 1997-98.

Treatment	Baseline	Feb. 1998◊	Mar. 1998	Apr. 1998
Poa annua	-19	-	-	-
snow cover	-	-13b	-10b	-7b
snow removed	-	-10b	-14b	-15c
ice cover	-	0a	0a	0a
ice removed	-	0a	-2a	0a
Treatment	**Baseline**	**Feb. 1998◊**	**Mar. 1998**	**Apr. 1998**
Agrostis palustris	-39	-	-	-
snow cover	-	-35cd	-39c	-32e
snow removed	-	-40d	-38c	-26d
ice cover	-	-34v	-39c	-31e
ice removed	-	-37d	-38c	-22d

1 Within a column, means followed by the same letter are not significantly different at p=0.05 (LSD).

Would You Like To Be A MGCSA Director in 2006?

Contact Rick Fredericksen, CGCS, if you would like to run for the 2006 Board.

Rick is compiling a list of candidates.

Contact Rick at:

952-473-5811

or

r_fredericksen@msn.com


Can you find what's missing from this picture?
Introducing the Toro® ProCore® 648.
Its unique design places the wheels inside the aeration path. So you won't see tire marks, ruts or smashed cores. And you won't see all the extra work. To find out more, and learn about financing options, visit toro.com/procore648.
The Toro Company