HOLE NOTES

Official Publication
of the MGCSA

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From Your President's Desk

Rick Fredericksen, CGCS
MGCSA President

State Board of Electricity Wants Golf Course Personnel To Be Licensed

The Board of Directors of our association met with John Schultz, Executive Director for the State board of Electricity for two hours at our March BOD meeting. To say there was little ground gained was comparable to saying the low voltage prep course was an educational seminar. John Schultz was firm in his stance of representing the State Board of Electricity and that there was no room for golf course personnel not to become licensed for low voltage electricity. The original law that was passed in the early 1980 was refined and passed last summer to include people who work on electricity under 30 volts has been interpreted to cover golf course staff. Unfortunately for us and approximately 8,000 other applications, someone will need to be licensed to perform the low voltage electrical work on irrigation systems. A licensed contractor can represent the golf course if they are overseeing the work. The original dead line to be tested and licensed was April 29, 2003. Schultz felt confident that this deadline would be extended to September 30, 2003.

The MGCSA was not involved in the bill and if we had known about the legislation pending the Board would have done everything possible. Regrettably, the State Board of Electricity has the legal means to interpret the way the law was written and force irrigation contractors, installers, and maintenance personnel to abide by the law. There is a proposed law requiring all irrigation systems to have a rain switch installed and operational by July 1 of this year. The MGCSA does have representation starting at the committee level.

Mike Nelson, Membership Chairman and Jack MacKenzie are leading an initiative to reach out to non-member clubs throughout the state. One of the goals of MGCSA is to keep our members abreast of the ever changing regulations influencing the golf course superintendent. Appreciating that ignorance of the law is no longer being tolerated; the MGCSA has stepped up its participation in legislative issues and communicating this to our members. As an organization we also feel it is our responsibility to notify all non-member clubs of the rules and regulations that golf courses are having to abide by. We will be sending out a letter to all non-member clubs located in the state explaining current laws and the benefits of belonging to our association. The MGCSA Board will be creating a new membership category called the "Facility Membership" and will be voted on at our next Annual Meeting in January. Until then we have created an interim membership called a "Temporary Facility Membership". This new membership will relinquish a golf course's exposure to dual membership, thus making it affordable to be a participant in the state organization.

It is the intent of the MGCSA to embrace all of the golf courses across the state of Minnesota. By providing a consistent educational level, no golf course will be left uninformed. By bringing all golf courses into the organization our industry as a whole will be safer, better regulated under the law and more knowledgeable about current events.

The BOD has also begun an initiative to gather a larger Affiliate Member base. Currently most of the Affiliate Members are directly related to turf management. However, it became very obvious at the Green Expo that there are many opportunities to encourage other green industry representatives to join our group. Businesses such as plant material wholesalers, tool distributors, hardscape handlers and specialized professionals showed interest in our member base for future relationships. It is an opportunity too good to pass up for both our members and the nursery industry.

In closing I wish you all the very best this spring and encourage you to participate with your State Chapter of the GCSAA. It wouldn't be the same without you.

-- Rick Fredericksen, CGCS
President

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2003 MGCSA CALENDAR

MONDAY, MAY 19
SPRING MIXER
VALLEY HIGH GOLF CLUB
HOST: JEFF NORMANDT

MONDAY, JUNE 30
SCHOLARSHIP SCRAMBLE
NEW RICHMOND GOLF CLUB
HOST: TOM JOHNSON

MONDAY, AUGUST 18
MGCSA CHAMPIONSHIP
THE LEGACY COURSES AT CRAGUN'S
HOST: MATT McKINNON

MONDAY, SEPTEMBER 8
STODOLA RESEARCH SCRAMBLE
OAK MARSH GOLF COURSE
HOST: ROBERT PORTER

MONDAY, OCTOBER 13
FALL MIXER
LONG PRAIRIE COUNTRY CLUB
HOST: JOHN MONSON

PROFESSIONAL PERSPECTIVE

Pythium Control Options

By Mark Plombon , Superintendent
Sawmill/Loggers Trail Golf Clubs
Stillwater, Minnesota

Pythium, the perennial problem. Not only does it hurt us agronomically, but controlling Pythium chemically greatly impacts our budget, both as a curative or preventative program. Many clubs, including mine, do not have the budget to cover wall to wall two or three times a year with a Pythium control program.

Last mid-summer, I was visiting with John Steiner, CGCS and amateur plant pathologist, at the White Bear Yacht Club about my challenges. He had mentioned that another superintendent from a south metro course was having good luck with a new product controlling Pythium on a preventative basis at a lower cost. At first I thought was this is too good to be true, a new hocus-pocus product, however John's professional endorsement encouraged me to investigate further.

At about the same time, one of my vendors introduced me to PHOSGARD, which is a close product to the one that the superintendent in the south metro was using. I needed some answers, so I called J.H. BIOTECH, the company who manufactures PHOSGARD. I was introduced to a chemist named Dr. Fernandez. My excitement mounted as his professional insight gave me pause to think.

Dr. Fernandez informed me that they have two products, PHOSGARD which is labeled as a nutrient and FOSPHITE which is labeled as a fungicide; same product different labels. Tom Dullan, Dr. Fernandez's assistant, explained to me that PHOSGARD and FOSPHITE are the pure form of an already available Pythium control product. Except, the Biotech product contains no Aluminum ions, an additive used to produce the product in a wettable powder form.

The active ingredients in these liquids(as in the other more common fungicide that we have used) are HPO3 and H2PO3. Both are oxidized by an enzymatic reaction to form HPO4. This form of phosphite is readily available to the plant and does not tie up in the soil like P2O5 (phosphate) does. The phosphite ion is then absorbed by the plant and any excess that the plant does not use is extruded through the root tips and acts as a contact fungicide to soil-borne Pythium. It is believed that the conversion process actually robs the pathogen of the necessary oxygen molecules needed for survival. It is my understanding that whatever phosphorous product you use should be in the phosphite form and not the phosphate form.

There is one other important point here. The form of phosphorus in PHOSGARD and in the other products is listed under the title of Available Phosphoric Acid (P2O5) (AOAC Method 960.02). AOAC is abbreviation for Association of Offical Analytical Chemist. This is a book that you can look up the number, method 960.02 and this will inform you of the form of Phosphous. It is not the form P2O5 as it may seem. The information that I have found is only part of a very complex process.

There are several tried and true products that can control Pythium preventatively and their active ingredient will vary. However, I am going to experiment with PHOSGARD as my preventative fungicide program for Pythium control . The cost saving is very significant, and if the product holds up to it's claims, I will be a hero.

I am excited about using this new tool in my greens program. An added bonus is that PHOSGARD is also a nutrient to the grass plant. Combining Phosgard with a soluble nitrogen source will be the back bone of my spoon feeding program. Also I will keep track of my soil tests and supplement any micros that may be lacking.

A bit of magic? Perhaps, however if I can provide my clientele with optimum playing conditions at a lower cost then I will be considered a true wizard.

History of the J. R. Simplot Company

Unlike most companies, the history of the J.R. Simplot Company does not begin with an easily discernible founding date. Clearly, J.R. "Jack" Simplot's rise to prominence as a shipper of potatoes and onions in the late 1920s and 1930s defines the company's roots, but it was not until the turbulent years of World War II that two of the company's cornerstone businesses, food processing and fertilizer manufacturing, were established.

Through these early years, the company's growth both mirrored and, in many ways, influenced the postwar development of resources in Idaho and the Pacific Northwest. Irrigated farming, grazing rights, mining and the development of transportation systems were essential elements to the company's success.

By 1956, the framework of the vertically integrated company that exists today was in place, and the incorporation of the J.R. Simplot Company that same year provides a convenient event to mark the conclusion of the company's formative years.

Jack Simplot, who now serves as Chairman Emertis, will remain forever fixed as the founder, leader, and inspiration of the Simplot Company, but it is equally true that scores of dedicated employees contributed mightily to the success of the organization.

Overview

Today, Simplot is one of the largest privately held agribusiness corporations in the U.S.

Based in Boise, Idaho, it employs more than 12,000 people in the U.S., Canada, Mexico, China, Australia, and Chile.

Annual sales are about $3 billion, derived principally from food processing, fertilizer, cattle feeding, turf and horticulture, and other enterprises related to agriculture.

Food

Simplot is one of the world's largest frozen-potato processors, annually turning out more than 3 billion pounds of french fries and other potato products for the foodservice industry. The company also is among the largest frozen-vegetable processors in the nation, supplying mainly institutional customers.

The firm has 25 wholly owned and joint-venture food plants in North America, Australia, South America, and China. An alliance with Farm Frites, one of the largest frozen-and-chilled-potato manufacturers and marketers in Europe, rounds out Simplot's global presence.

Agribusiness

The company's agribusiness activities are designed to provide farmers with a complete package to help them succeed.

Simplot assists growers by providing inputs such as fertilizer, scheduling applications for fertilizer and crop protectants, shepherding crops from planting to harvest, managing risk, and obtaining financing.

Eighty Simplot Grower Solutions farm service retail stores throughout the West and Midwest provide a broad array of products and services directly to customers.

The company also is a major manufacturer of agricultural fertilizer, with markets in the United States, Canada, and Mexico. Several million tons of various fertilizers are produced annually at wholly owned plants in Pocatello, Idaho, and Brandon, Manitoba, and a joint-venture plant in Rock Springs, Wyo.

Raw material for the plants is supplied in large part by two mines in Idaho and Utah. They contain phosphate ore reserves exceeding 100 years.

Land and Livestock

Simplot is the West's largest beef cattle producer, and the number one company nationwide for both feedlot cattle output and cow-calf production.

The firm's two feedlots in Idaho and Washington turn out more than 400,000 head a year, and the Grand View, Idaho, lot's one-time holding capacity of 150,000 is the biggest in the world.

Forty-three Simplot farms and ranches are located in Idaho, Oregon, Washington, Utah, and Nevada. They supply part of the incoming cattle needed at Company feedlots and crops used in the ration for feedlot animals. Most of those needs are filled by independent ranchers and growers.

Meat Processing

The Simplot Meat Products plant in Nampa,ID, produces fresh and frozen beef in a variety of specialty, value-added cuts primarily for customers in Japan. The plant turns out 132 million pounds of fabricated beef each year.

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Basal Rot Anthracnose

By MATT GIESE and CHRIS HOFF

If you had asked golf course superintendents about basal rot anthracnose seven or eight years ago, most would have thought you were speaking a foreign language. Ask the same question of superintendents today and you still may receive a similar facial expression, but related rather to feelings of anxiety entwined with attempting to control this disease. Basal rot anthracnose is not a new disease in terms of plant pathogens, but the incidence and distribution of the disease has certainly categorized it as a new hurdle in managing high maintenance turfgrass.

Basal rot anthracnose is a disease that can infect turfgrass year round due to its adaptability to different environmental conditions. During periods of wet and cool weather in spring and fall, anthracnose symptoms appear as crown or basal rotting with dark brown discoloration of the lower leaf sheaths and eventual blackening of the crown tissue. Under warm and moist conditions, symptoms appear over the foliage, especially on the older leaves and stem bases. If the plant remains under stress and is exposed to periods of extended leaf wetness, the pathogen can move down the leaf and infect the base or crown of the plant. These dying tissues have spore-bearing structures, called acervuli, and are observable under a 10x lens. The acervuli (resemble tiny pin cushions) are commonly found on old senescing leaves and stems, but their detection on newly emerged leaves indicates an advanced disease infection.

Anthracnose survives the mild winters as fungal mycelium in the plant tissue or as a saprophyte on plant debris. The fungus actively colonizes the thatch and leaf litter, which act as the sources of inoculum for leaf and crown tissue infections. Spore dissemination occurs mostly by rain splash, wind, and mechanical movement through mowing and vertical cutting.

A common misconception on courses that have low populations of Poa annua is that anthracnose will not affect them. Anthracnose is not limited to infecting Poa annua species, it has also been observed on creeping bentgrass, Kentucky bluegrass and perennial ryegrass. The common denominator is that anthracnose infects weakened plants, regardless of the species. Once the inoculum is present, mature turfgrass plants are infected when weakened by stress related factors. Such stresses may occur from many different sources, but all can predispose the plant to infection. Biological factors include root, crown, and leaf feeding insects, parasitic nematodes, or other pathogenic fungi. Abiotic factors also play a significant role in exerting stress on the plant. Soil compaction, anaerobic soil, high air and soil temperatures, soil moisture stress, cold injury, mechanical wounding, fertility level extremes, close mowing heights, traffic and wear, and pesticide misapplication can all stress the turfgrass plant and ultimately cause infections. The elevated level of distribution and incidence of this disease is invariably due to a combination of any or all of these plant stress factors.

The amount of research conducted on anthracnose over the years has been limited for mainly two reasons, 1) the recent newness of the disease, but more so is 2) the difficulty of working with the fungus in the field. Artificial inoculation of the pathogen does not consistently produce disease infection, or if it does, at levels too low to test fungicide products. Therefore turf pathologists must rely on naturally infected areas, which are generally more unreliable, to gather information.

However, in 2002, Dr. Bruce Clarke at Rutgers University conducted a trial on basal rot anthracnose on a naturally infected green in New Jersey yielding high disease infection (83% turfgrass area infected on non-fungicide treated turf). Dr. Clarke concluded, "In general, fungicides within the nitrile (Daconil Ultrex 82.5SDG at 3.2 oz/1000 sq. ft.) and the antibiotic polyoxin-D (Endorse 2.5W at 4.0 oz/1000 sq. ft.) chemical classes provided excellent control of anthracnose (96-100%), compared to non-fungicide treated turf. Of the DMI fungicides, only propiconazole (Banner MAXX 1.3MC at 1.0 fl oz/1000 sq. ft.) adequately controlled the disease (98-100% control), whereas myclobutanil (Eagle 40W 1.0 oz/1000 sq. ft.) provided moderate control (80-100% control) and triadimefon (Bayleton 50W at 1.0 oz/1000 sq. ft.) proved ineffective at the rate tested. The phosphonate fosetyl-Al (Chipco Signature 80WG at 4.0 oz /1000 sq. ft.), the dicarboximide iprodione (Chipco 26GT 2SC at 4.0 fl oz/1000 sq. ft.), and the phenylpyrrole fludioxonil (Medallion 50W at 0.25 oz/1000 sq. ft.) provided good to excellent suppression of this disease (78-100%). As a group, fungicides within the QoI chemical class including pyraclostrobin (Insignia 20WG at 0.5 oz/1000 sq. ft.), azoxystrobin (Heritage 50WG at 0.2 oz/1000 sq. ft.), and trifloxystrobin (Compass 50W at 0.25 oz/1000 sq. ft.) provided relatively poor control of anthracnose basal rot (3-46% control) at this site. The benzimidazole thiophanate-methyl (Cleary 3336 50W at 4.0 and 6.0 oz/1000 sq. ft.) did not significantly control this disease."

Dr. Clarke also looked at the effect of nitrogen on disease incidence as well as tank mixtures and concluded this, "Although date and fungicide dependent, nitrogen (urea) significantly reduced disease severity. On non-fungicide treated turf, the addition of 0.125 lb N/1000 sq. ft. every two weeks reduced the severity of symptoms 18-36%. Tank mixtures and rotational programs (i.e., applying products from different chemical classes every two weeks) provided excellent disease control that was equivalent to or better than single product entries." All treatments in this study

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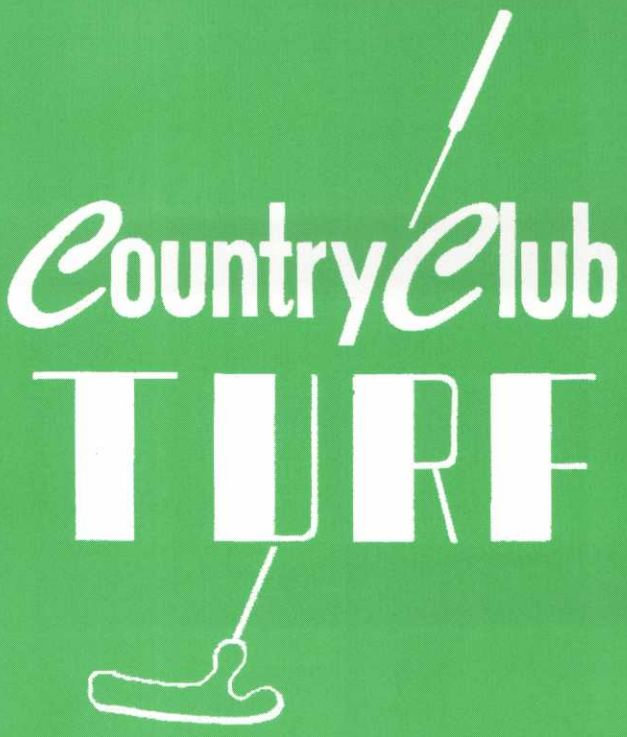

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What's First the Chicken or the Egg?

(Disease or Nutrient Problems?)

By Larry Thornton
Superior Turf Services Inc.

Is the turf dying because a disease or a complex of diseases is attacking it? Or is it because the turf is weakened due to poor nutrient uptake andutilization? Being predisposed to disease is a common occurrence on thegolf course.

Agronomically speaking, have we mixing up our philosophies about why we have turf decline? Sometimes the more information we receive tends to cloud water that is already murky. If that sounds vague it is because we are crossing into the "Too Many Variables Zone". Very similar to the Twilight Zone but not fictitious.

In a nutshell Superintendents are trying so many things at the same time it is impossible to scientifically evaluate the cause and magnitude of the result of specific practices. We need to get back to basics. The basics for growing great turf are a combination of solid science, prioritizing, good cultural practices, the proper utilization of tools, hard work, people skills and innovation.

A new trend in golf course management is the utilization of phosphorus spray supplements on fairways. There are numerous phosphorus products on the market that show a benefit to disease and stress reduction. Other than commonly used phosphorus sources such as Monoammonium phosphate (MAP) and Diammonium Phosphate (DAP), there are three basic sources that are receiving attention.

Potassium Phosphite, Phosphorus Acid, and Mono Potassium Phosphate have some registrations as fungicides and can also be available as plant foods. In fact, I have been selling or formulating with Mono Potassium Phosphate for over ten years. It is an excellent water-soluble product.

Where does MKP (Monopotassium Phosphate) or (Potassium Dihydrogen Phosphate) fit into the golf course tool list? It is less important than good irrigation, good drainage, aerification, sharp mowers, good soils, good water, variety selection, and basic fertility requirements. However, the use of phosphorus based spray supplements

has shown to improve turf quality in scientific study when mixed with contact fungicides thus reducing Summer Stress Syndrome. Potassium, phosphorus, and calcium applications have been known to reduce the effects of phythium and seedling damping off for decades.

MKP is a fine white crystal with excellent solubility. The recommended use rate ranges from 2-4 ounces per 1,000 square feet or 6-11 pounds per cre every 7-14 days. MKP, Phosphorus Acid, and Potassium Phosphite are labeled as plant foods and fungicides. The cost of application of MKP can range from $4-$10 per acre per application, being considerably cheaper than phosphorus acid or potassium phosphite. Potassium Phosphite and Phosphorus Acid should offer longer residual activity respectively due to better translocation than MKP but good results have been seen with MKP in helping to reduce summer stress syndrome. The effectiveness and longevity of these products needs more research under high disease pressure.

MKP has an extremely low salt index and burn potential. The salt index of MKP is about one ninth that of urea. It also has a pH of 4.5 making it an excellent acidifying agent for high bicarbonate water. This also helps in keeping the phosphorus from reacting with bicarbonates and can help stabilize some fungicides. In addition, low pH can create some micronutrients to become toxic to plants.

When spraying nutrients water volume can enhance or detract from foliar uptake. One gallon of water per 1,000 sq. ft. is a normal rate for MKP at 10 lbs. per acre. The higher the water volume the more likely the application will become a soil application. In general, flat fan nozzles will give more complete coverage than many of the other spray tips. One draw back of low volume can be burn potential, especially when tank mixing. Watch out for micronutrients in tank mixes. Low volume can reduce creativity in tank mixing.Low volume sprays can create water volume conflicts when tank mixing various fungicides. Always read and follow label directions. There are wide swings in recommended water volumes do to a number of variables.

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Chicken or the Egg?

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Other phosphorus-based products require higher water volume than MKP.

Taking greens practices to fairways is an old philosophy. From light -weight mowing to high intensity coring and now tank mixing chemistry and nutritionally based products. Spraying nutrients on fairways is not new but growing in popularity. The idea of spraying nutrients to prevent stress on greens has been done for decades. Shallow rooted plants with poor nutrient uptake lend themselves to foliar feeding. Phosphorus products are not the only nutrients to show a relationship in reducing disease incidence. There are numerous scientific studies that show reduction in Dollar Spot, Patch Diseases, Phythiom, Brown Patch andAnthracnose. The proper selection, rate, use, and timing of fertilizer applications can improve quality, disease resistance, wear tolerance and hardiness.

Supplemental nutrition from foliar application for turf is a sound practice but does not replace soil fertility practices. Environmental factors influence cool season grass roots and turf nutrient utilization.

Poor drainage, poor soils, too much water and or heat all can create nutrient availability and utilization problems. In addition, irrigation water can negatively influence nutrient availability. High or low water pH, high bicarbonates, excess sodium and high salt, can also limit soil and plant nutrient availability.

Starting a supplemental spray program before a reduction in plant health and vigor is a proven practice.

Over the years turf quality has continued to improve because of improvements in our tools. Better cultural practices have given superintendents that extra edge to survive more turf stress than in the past. It is important to utilize all our agronomic and cultural practices to continue making advancements in fine turf. Solid plant nutrition is a basic turf requirement.

Better nutrition can help overall plant health but should not be depended on to replace the use of traditional fungicides. In a perfect world turf would always be healthy. The reality is dealing with plant

Stress from numerous directions, storms, floods, excessive play, limitations in labor, proper timing of sprays, equipment failure, limited cultural practices, time limitations, budgetary restrictions, and so on.

So what was first, the chicken or the egg, (the disease or nutrient deficiency)? Sometimes it might be the chicken, sometimes it might be the egg or even both at the same time, and it may not matter. The real challenge becomes implementing new tools without losing sight of our priorities for healthy and durable playing surfaces.