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HOLE NOTES

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FROM THE PRESIDENT'S DESK

First Annual Garske Scholarship Scramble Was Huge Success

The First Annual MGCSA Garske Scholarship Scramble was a huge success with 38 foursomes competing at Tartan Park. Chuck Tuthill's team, from Elk River Country Club, won it with a 10-under score. The proceeds from this event go directly into the Scholarship Fund. Additional funds also were derived by the contributions from Steve Garske and Scott Montague. They issued a special challenge to the field of players that for each team with a better score, they would donate $5.00 a piece to the scholarship fund. Our thanks to Joe Moris and Randy Allen for their help in hosting the Garske Open.

Susan Wiese, a reporter from KARE News, was also at the meeting doing a report on pesticide use and safe practices on golf courses. It is important that our associates address these issues for they will become more prevalent in the future. It is also important that the association continue to educate our membership in IPM.

* * * *

Mike Olson, Chairman of the Membership Committee, and John Granholt have three committee members available throughout the state to interview applicants. They are located in different regions of the state in order to provide better access for those interested in joining our association. Upon their recommendation Mike submits the application to the board for approval. The regional representatives are Fred Taylor from Mankato Golf Club, Steve VanNatta from Owatonna Country Club and David Kohlbry from Northland Country Club.

* * * *

Members of the Association should be aware of a 'con' going on in the metro area. A call is made to the club informing them of a member being injured in an accident and requesting money immediately.

* * * *

Many of the MGCSA member courses offer reciprocity of playing privileges. Members should make arrangements in advance by calling the superintendent of the course that you want to play. Remember that availability, time restrictions and dress codes may apply. Please do not abuse the privilege.

* * * *

The MGCSA Championship is August 17 at Midland Hills Country Club. Scott Austin and his staff are looking forward to hosting this event.

—Rick Fredericksen, CGCS
MGCSA President

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First Annual Garske Scholarship Scramble A Resounding Success

July 13th will be long recognized as a lucky day for recipient's of the MGCSA's Scholarships. The First Annual Joe Garske Scholarship Scramble was held at Tartan Park Golf Course. Thirty-eight teams entered the event, six teams in the net division and 32 in the championship division.

Tartan Park was the site of the challenge, utilizing the Red course and the Blue course. Golf Course Superintendents Joe Moris and Randy Allen definitely had their work cut out for them. Ten days prior to the event their golf course was inundated with well over 5.5″ of rain, with 2.3″ of that 5.5″ falling Saturday night before the scramble. However, on Monday the golf course was completely ready for the onslaught of participants.

The conditions were phenomenonal. Joe Moris, Randy Allen and Ed Peterson had given their all to make this event a smashing success.

Before golf could be played, there was the matter of setting down to a fine lunch and going over with teammates some final strategies. During the lunch Steve Garske and Monty Montague challenged all playing, that they (Steve and Monty) would donate five dollars to the Scholarship Fund for every team that beat the "Dream Team" score. The Dream Team consisted of Steve "My Back Aches" Garske, Cary "Boom-Slice" Femrite, Monty "Chunck" Montague and Scott "Knickers" Austin. The Scholarship Fund is now $270.00 better off, thanks to these two fine gentlemen.

"The cigars were the only thing being smoked by the 'Dream Team,' as 27 other teams smoked the Dream Team." Left to right, Scott "Knickers" Austin, CGCS, Steve "My Back Aches" Garske, Monty "Chunck" Montague and Cary "Boom-Slice" Femrite.

The Results:
CHAMPIONSHIP FLIGHT

First Place: $150.00 –10
Chuck Tuthill, Jon Dojon, Tim Longie, Lee Moran

Second Place: $100.00 –10
Eric Peterson, John Cox, Greg Mickelson, Tom Giller

Third Place: $75.00 –10
Jim Lindblad, Bill Johnson, Larry Vetter, Tim O'Connor

Fourth Place: $60.00 –8
Brooks Ellingson, Todd Klein, Tom McCann, Brad Lucas

Fifth Place: $50.00 –8
Mike Ligday, Gene Berry, Dan Pakko, John Hammerschmidt

Sixth Place: $40.00 –8
Kevin Clunis, Mike Nelson, Mark Crimmin, Dean Carlstrom

Seventh Place: $25.00 –8
Tom Meier, Jeff Linder, Mike Sluman, Jeff Berkhof

Eighth Place: $10.00 –8
Randy Nelson, Mike Benson, Steve Glynn, Dick Grundhoeffer

NET FLIGHT

First Place: $60.00 Net 59.8
Russ Adams, Shane Andrews, Jerry Bibbey, Bill Larson

Second Place: $40.00 Net 60
Scott Welzin, Bob Gardner, Maynard Wilson, Darren Gourley

Third Place: Net 61.3
Denny Owen, Bill Goettl, Jerry Storjdann, Pete Rosvold

SKILL AWARDS

Closest to hole after 2nd shot: Joe Buege
Closest to hole: Tom Meier
Longest Putt: Larry Vetter, Bill Johnson, Tim O'Connor, Jim Lindblad

WINNERS OF A BIG SKIN — From Worthington C.C. (l to r) were Mike Sluman, Tom Meier, Jeff Berkhof and Jeff Linder.

HOST STAFF — (l to r) Ed Peterson, Randy Allen, Joe Moris and Curt Pickar

Polymers: Can They Work for You?

By Dr. Tony Koski, Assistant Professor, Horticulture, Colorado State University

To many, the word "polymer" evokes images of lush, green vegetables, flowers and lawns raised on little or no water in parts of the U.S. where yearly rainfall often totals less than 20 inches per year. Is it valid to expect what amounts to almost miraculous results claimed by some of the marketers of the many polymer products now available? Or should we temper our expectations and find less spectacular and more realistic uses for these potentially beneficial products?

Polymer technology has been around a long time. There are literally hundreds of uses for these materials, often called superabsorbents, which have the ability to absorb several hundred times their own weight in water or other liquids. One of the most familiar uses of polymers is for disposable diapers. Ideally, the polymers in a diaper do NOT release any absorbed moisture. Polymers used for growing plants, on the other hand, should release all (or nearly all) of the absorbed water to the plant when conditions warrant. Mixed into soil, superabsorbant polymers are supposed to provide extra plant-available moisture so as to reduce transplant shock of trees, shrubs or sod, enhance the survivability of windbreak plants under non-irrigated conditions and reduce the frequency of irrigation for any plant that requires regular watering to maintain its health, beauty or productivity.

Polymer performance

The performance of polymers, both from water-retention and longevity perspectives, can be influenced by a number of factors. There are two basic types of polymers marketed for legitimate horticultural and agronomic use. One is the *starch-based* polymer. These types of polymers may absorb up to 1000 times their own weight in water. Their water-absorptive capability is not greatly affected by the quality (i.e. saltiness) of the water, a great advantage under field conditions throughout the Western U.S. where irrigation water is often slightly to highly saline. A potential drawback of the starch polymers is that they may last only 6 to 24 months in the soil, depending on the level of soil microbial activity and other environmental factors. This may not be a concern when their use is intended for annual crops, but poses an obvious disadvantage where polymers are to be used for long-lived, perennial plants such as trees, shrubs and turfgrasses.

The most widely-sold type of polymer, known as *cross-linked polyacrylamide* (hereafter, *CPA*), will greatly outlast starch-based polymers after soil-incorporation; some studies show that they retain their water-absorptive properties for at least 8-10 years after being placed in the soil. The water-absorptive capabilities of the CPAs will vary with the process used to produce them, ranging anywhere from 100 to 400 times their weight in *pure* (i.e., salt-free) water.

Pure, salt-free water is not encountered under conditions in which plants are grown. Nutrients supplied by the growing medium itself, in irrigation water, or by fertilizer additions are all forms of salt. As such, these salts reduce the ability of CPA crystals to absorb water. While rainwater is low in salts, a simple rainstorm will not significantly reduce the level of salts present in most soil conditions - and thus will not significantly increase the amount of water absorbed by CPA crystals already in the soil. For example, the irrigation water used at the Colorado State University Horticulture Research Center is only moderately salty, but it reduces the water absorptive capabilities of most CPA's from 400 times their own weight in water to between 50 and 100 times their weight. Though a dramatic reduction, the amount of water retained by these CPA is still significantly more than could be held by any other soil amendment. Additionally, there is no evidence to suggest that the polymers will permanently accummulate or store salts while in the soil, but will allow them to flow freely as water moves in and out of the swelled polymer crystal. Some scientists are now considering polymers as a tool to produce controlled-release fertilizers by "loading" the polymers with nutrients, followed by incorporation into the soil. The greatest potential use here would be on sandy soils in areas of high precipitation where nutrient leaching is a problem.

But do they work?

Like many products marketed for horticultural use, there has been little independent research performed in order to assess valid expectations for polymers, much less protocols for using them. We have little knowledge concerning efficaceous use rates, incorporation depths or fertilization and irrigation techniques to be used in conjunction with polymers. Most of the present recommendations are likely based on "in-house" research and on testimonials from users in the field. While many of these experiences with polymers can be considered valid, the results can be confounded by all types of other factors. For example, the simple act of tilling polymers into the soil before seeding or sodding a lawn may significantly improve root zone conditions - enough so that the resulting turf may actually require less water than the previous one. The tillage (and not the polymers) may have caused the positive effect. Or perhaps the irrigation schedule was altered with the thought that the polymers would enhance drought resistance, but the turf might have been OVERIRRIGATED before, and is now doing fine with the proper amount of water! The lack of controlled, replicated and **published** research on polymers to demonstrate most of the benefits claimed for CPAs makes it difficult for university faculty and extension specialists throughout the country to recommend their use in many instances. Nevertheless, enough testimonial evidence exists from reliable industry experiences that research with polymers (especially CPAs) is continuing.

Research at Colorado State University

At CSU we have concentrated on potential uses of CPA for turfgrass situations. We currently have two large studies under way in which we are trying to document any potential water savings associated with CPA use on Kentucky bluegrass and tall fescue lawns. In the oldest study (2 years old), we have not observed any potential to reduce irrigation levels or frequencies on either species. Our second study was begun in order to address concerns raised in the first study, namely to use a cleaner (low in salts) water source and to use smaller-sized crys-

(Continued on Page 23)

Summer Patch

By Dr. Bruce Clark, Specialist in Turfgrass Pathology, Rutgers University.

Summer patch was first recognized as a disease of cool-season turfgrasses in 1984. Prior to that time, it was an identified component of Fusarium blight. Summer patch has been reported in North America on *Festuca glacua, F. longfolia, F. ovina, F. rubra, Poa Annua* and *P. pratensis.* The casual agent has also been isolated on occasion from *Agrotis palustris* and *Lolium perenne.* The disease generally occurs on turf that has been established for more than two years.

SYMPTOMS

On *P. pratensis,* symptoms first appear in early summer as small, circular patches of wilted turf 3 to 8 cm in diameter. Patches may enlarge to more than 60 cm, but generally remain in the 6 to 30 cm range. Affected leaves rapidly fade from a grayish-green to a light straw color during sustained hot weather (daytime highs 28-35C and nighttime temperatures exceeding 20C). Irregular patches, rings, frog-eye and crescent patterns may also develop and coalesce into large areas of blighted turf.

In mixed stands of *Agrotis* and *Poa* maintained under putting green conditions, patches are circular and range from 3 to 30 cm in diameter. As *P. annua* yellows and declines, Agrotis spp. frequently recolonize patch centers. On fairways and lawns, rings or frog-eye patches may not develop. In such cases, symptoms may appear as diffuse patterns of yellowed or straw-colored turf that are easily confused with heat stress, insect damage or other diseases. Infected roots, rhizomes, and crowns turn brown as they are killed. Examination of these tissues typically rev-

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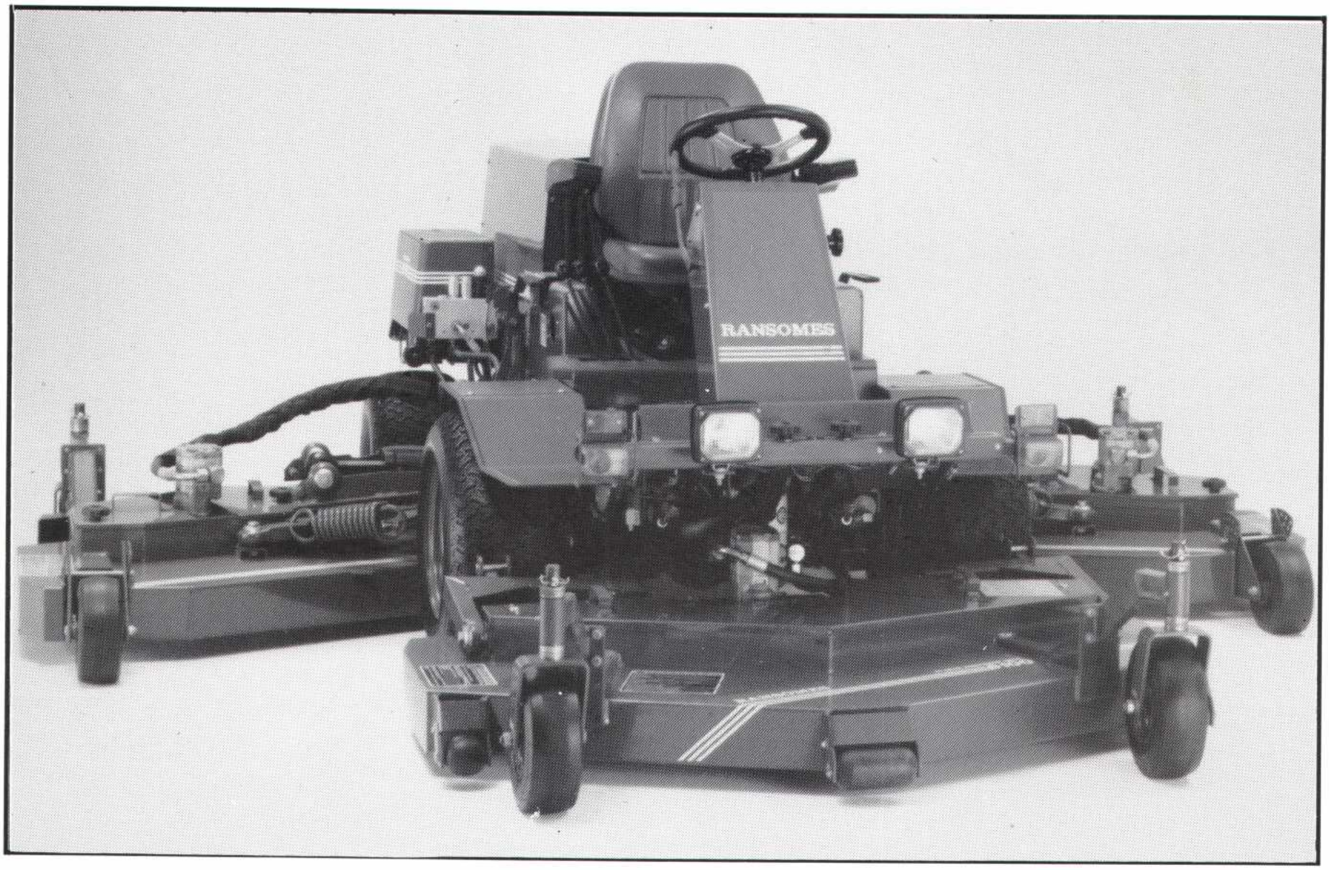

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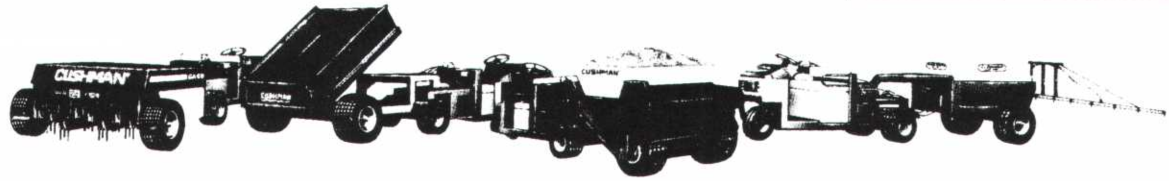

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Summer Patch—

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eals a network of sparse, dark brown to black, ectotrophic hyphae from which hyaline penetration hyphae invade the underlying vascular tissue. In the latter stages of infection, vascular discoloration and cortical rot are extensive. No fruiting structures have been observed under field conditions.

CASUAL AGENT

Magnaporthe poae Landschoot and Jackson, the casual agent of summer patch, is a newly described heterothallic fungus show anamorph had previously been misidentified as *Phialophor graminicola* (Deacon) J. Walker. The fungus forms dark brown to black, septate, ectotrophic runner hyphae on roots, crowns and rhizomes of turfgrass hosts. Perithecia, which have only been observed in culture, are black, spherical (252-556 um in diameter), and have long (357-756 um) cylindrical necks. Asci are unitunicate, cylindrical (63 x 108 um long), and bear eight ascospores. At maturity, ascospores are 23-42 um long and 4-6 um in diameter. Ascospores are tri-septate with two intermediate dark brown cells and two hyaline terminal cells.

On half strength PDA, mycelial growth is oppressed, olive brown to black, and curls back towards the center of the colony. Phialospores of the anamorph are hyaline, 3-8 um long, and 1-3 um wide. Hyphopodia are globose, dark brown and occasionally found in nature on stem bases and roots.

DISEASE CYCLE

The pathogen is believed to survive the winter months as mycelia in previously colonized plant debris and in perennial host tissue. Colonization and suppression of root growth has been shown to occur between 21 and 35C under controlled environmental conditions, with optimum disease development at 28C. In the field, infection commences in late spring when soil temperatures stabilize between 18 and 20C. The fungus moves from plant to plant by growing along roots and rhizomes, symptoms develop during a hot (30-35C), rainy weather or when high temperatures follow periods of heavy rainfall. Patches may continue to expand through the summer and early autumn and are often still evident the following growing season. Summer patch may be spread by aerification and dethatching equipment as well as by the transport of infected sod.

EPIDEMIOLOGY

Summer patch is most severe during hot, wet years and on poorly drained, compacted sites. Although heat stress plays an important role in disease development, drought stress is usually not a predisposing factor. Under ideal conditions, the casual agent can spread along roots, crowns and stem tissue at a rate of up to 3 cm per week. Symptom expression has been shown to increase with the use of arsenate herbicides, quick release nitrogen fertilizers and several contact fungicides. The disease is frequently stimulated when turfgrass is maintained under conditions of low mowing height and frequent, light irrigation. Soil pH, a major factor in the development of take-all patch, apparently does not affect the incidence of summer patch.

CONTROL

Because summer patch is a root disease, cultural practices that alleviate stress and promote root development will reduce disease severity. Since low mowing enhances symptom expression, avoid mowing turf below recommended heights, particularly during periods of heat stress. In the Northeast, symptoms are less apparent when lawns are maintained at a height of 5 to 7 cm, respectively. Fertilize turf with a slow release nitrogen source such as sulfur-coated urea. Irrigate deeply and as infrequently as possible without inducing drought stress. Syringing to reduce heat stress, aerification, improving drainage and reducing compaction are other practices that will aid in the control of this disease.

Overseeding affected areas with *L. perenne, F. arundinacea,* are resistant cultivars of *P. pratensis* represent one of the most cost-effective means of controlling

(Continued on Page 24)

Sooty Mold

By Cynthia Ash
Assistant Extension Specialist

Frequently tree limbs and leaves are covered by an unsightly, black, sooty growth called sooty mold. It may occur on any tree or shrub but is most common on pine, elm and linden (basswood).

Sooty mold is a fungus but is not considered to be a disease. It lives saprophytically; that is, it does not infect living plant tissue. The sooty mold fungus is often found on plants infested with sapsucking insects such as aphids, white flies or scales which produce a sugary secretion called honeydew. This honeydew drips down onto leaves and branches, providing a food base on which the sooty mold fungi can grow. Sooty mold may also grow on sap or resin associated with wounds.

Heavy growth by the fungus can reduce photosynthesis but does not harm the plant in any other way. We do not recommend control of the mold itself; however, the presence of the sooty mold is often an indication of insect activity which has the potential for causing damage. Proper identification of the insect is necessary to determine if chemical control is warranted. Light coverings of the mold will gradually disappear when its nutrient source is eliminated and during dry weather. Sooty mold can be physically washed off small plants if desired.

Sooty mold may be unsightly but seldom causes injury to the host plant. It may signal an insect infestation; however, proper identification of the insect is necessary to determine if and when chemical treatment is warranted.