Japanese Beetle–

(Continued from Page 10)

controlled or not. Obviously, if you have softball-size balls of horny beetles rolling across your greens, tees and fairways, a treatment may be warranted or even demanded by your golfers. Products containing active ingredients such as acephate, trichlorfon, carbaryl and several pyrethroids will provide quick knock-down of adult JB in trees and on turf and ornamentals.

The female Japanese beetle prefers to lay her eggs in moist, loamy soil covered by turfgrass or mulch. She prefers grass that is 2" in height and lower. During her 30-45 day lifespan, she can lay as many as 60 eggs, beginning in late June. In two to three weeks the eggs hatch and the larvae immediately begin feeding on turfgrass roots. The white grubs attain a full-grown length of approximately one inch and are identified by the v-shaped rastral pattern located near their anal slit.

Locations of infestations tended to vary from course to course, but most agreed that unirrigated rough areas adjacent to

watered fairways are the first areas to show damage due to drought stress. The JB veterans who shared their experiences with me indicated that lush fairways are prime areas along with southern exposed green, tee and bunker surrounds. Healthy, irrigated turfgrass is, of course, more resilient and usually able to outgrow the root damage inflicted by the grubs so scouting and monitoring is a must. One thing is for certain. (Insert photo of turf damage) When the raccoons, skunks and opossum find these buried delicacies, all hell can break loose! A family of raccoons can destroy acres of turfgrass in a short period of time. According to most of my contacts, the damage inflicted by these vertebrate pests is the most serious and

(Continued on Page 12)

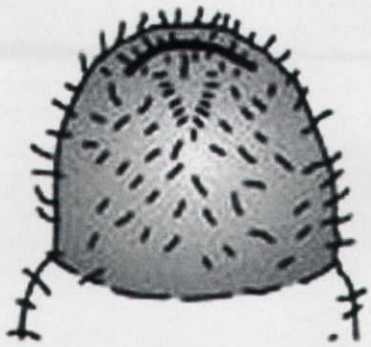
Japanese Beetle–

(Continued from Page 11)

difficult to control; more so than weakened turfgrass or tree and ornamental damage. Another interesting fact that will save you money – the female Japanese Beetle avoids laying eggs in tight mowed, dense surfaces such as putting greens. So don't bother spraying these surfaces.

How does one avoid such a scenario?

There are several preventative pesticide products on the market that are very effective on JB larvae. Imidaclopid (Merit) and Halofenozide (Mach 2) are the current products of choice. Halofenozide is an insect growth regulator that essentially "grows the grubs to death." It is a slow-acting product that should be sprayed when adults are active and beginning to lay eggs, usually in June through early August. Imidacloprid is also a slow-acting systemic product that is absorbed and translocated in plants. The adult and larval stages feed on root and leaf material and ingest the poison. This product should be applied anytime between May 15 and August 15. When applied as a drench below the drip line of host specific trees, Imidaclopid will provide excellent control of adult beetles.



Japanese beetle

Both compounds exhibit low toxicity on birds and fish and are extremely effective on first instar larvae. Base your treatment decisions on previous history of grub infestations. Plan on spending approximately $110 / acre for either of these products, and they must be watered in to be effective.

If you are caught by surprise and discover grub infestations in late summer or the fall of the year, Trichlorfon (Dylox) will provide an effective rescue treatment. This contact insecticide is very fast-acting and effective on first and second instar larvae. Be aware that this product is subject to alkaline hydrolysis, so pH adjustment in the spray tank is critical to attain maximum effectiveness.

"If you are caught by surprise and discover grub infestations in late summer or the fall of the year, Trichlorfon (Dylox) will provide an effective rescue treatment."

Many who shared information felt that JB populations were somewhat cyclical in the sense that adult populations tended to fluctuate from year to year. The amount of acreage treated on an annual basis varied from golf course to golf course. Some superintendents treat wall to wall every year. Others minimize their treated acreage by scouting populations and treating hot spots as needed. There was also a consensus that the initial outbreak / onslaught will last nine to ten years before predator-prey relationships stabilize population numbers.

On the horizon there are several very promising bio-control options being studied and tested. Tiphia vernalis (parasitic wasp) hunts down the larvae of the Japanese beetle and deposits eggs that hatch and kill the grub. The Tiphia wasp cannot eradicate Japanese beetle. It can keep beetle populations low enough to minimize plant damage and can be used as part of an overall Integrated Pest Management program to suppress populations. USDA researchers consider it to be the most effective parasitoid of JB in the U.S.

The Winsome fly, Istocheta aldrichi, parasitizes the adult female Japanese beetle by laying eggs on her thorax. The eggs hatch and the maggots bore into her body, killing her quickly. In ideal situations, this fly can suppress JB populations before the beetles can reproduce.

Several parasitic nematodes show promise as components in an IPM program. Steinernema glaseri and Heterorhabditis bacteriophora nematodes are particularly effective at finding and destroying JB grubs. S. glaseri tracks the grub in the soil by following the insects' carbon dioxide trail released through their breathing vents. Research continues on the efficacy of both parasitic nematodes and insects in field applications.

* * * *

(Editor's Note: Paul Diegnau, CGCS, is the MGCSA liaison to the Minnesota Invasive Species Advisory Committee. MISAC is co-chaired by the MN Dept. of Agriculture and the MN Dept. of Natural Resources. The council was formed in response to Presidential Executive Order 13112 on invasive species, the National Invasive Species Management Plan and Minnesota legislation that encouraged the state to plan and take action on invasive species.)

U of M Turf and Grounds Field Day Set July 28

You could win a weekend night for two at the Minneapolis Hyatt Regency.

By LARRY VETTER
MTGF Executive Director

The University of Minnesota Turf and Grounds Field Day will be held on July 28, 2005 at the TROE Center and the Display & Trial Gardens on the St. Paul campus. This year both turf and grounds tracks are being offered so that all Green Industry professionals have an opportunity to view the latest research, education and outreach activities in progress by various University of Minnesota faculty and staff.

The following are tentative examples of the turf research projects which will be showcased during the morning field day on the TROE Center site:

+ Pesticide runoff from bentgrass fairways: Come see the new rainfall simulator and hear from Dr. Pam Rice about how to mitigate pesticide runoff through common cultural practices used on golf courses.

+ Use of colonial bentgrasses and fine fescues on golf course fairways: This research project is funded by the GCSAA and is a collaborative effort with the University of Wisconsin-Madison. Dr. Horgan's goal is to evaluate alternative turf species for low maintenance golf course fairways. Fertility, wear and golf ball lie are all factors being evaluated.

+ Nitrogen leaching and gas emissions from fertilizers applied to a USGA putting green as effected by irrigation inputs: This is a United States Department of Agriculture funded project. The research objective is to identify the environmental benefits of implementing water conservation strategies on USGA putting greens.

+ National Turfgrass Evaluation Program: Over 100 different varieties of fine fescue and creeping bentgrass (greens and fairway height of cut).

+ Perennial ryegrass and Kentucky bluegrass breeding nurseries and NTEP Trials: Dr. Nancy Ehlke and Dr. Eric Watkins continue to work at developing new varieties of Kentucky bluegrass and perennial ryegrass. They have some excellent prospects that they will show.

+ Using remote sensors to help conserve irrigation water: This is an exciting research project that will change how you irrigate.

+ Fertilizer runoff from Kentucky bluegrass: Last year you were able to see and hear the initial research data collected during the initial year of research on this important topic. As the fertilizer use debate continues, this research will help identify the potential effects of fertilizers applied to turf and the impact of these fertilizers on surface water bodies.

+ No-mow grasses and alternative plant species: Do you have any areas on your property that you don't want to mow, or would like to implement a reduced maintenance schedule? Come meet Dr. Mary Meyer and see her research on these new plant materials.

In addition to the turf activities listed above, come see the newly designed and constructed Display and Trial Gardens that have been completely redone this year. There will be a number of educational opportunities related to design and grounds maintenance that Brad Pedersen has put together. Roger Meissner will host a tour of the new Plant Growth Facility and Greenhouses. Julie Weisenhorn will give a tour of the new Landscape Design CAD Lab. Either formal or informal tours of the newly designed gardens on campus with specifics about new herbaceous plants will be conducted by U of M faculty. There will also be a walking tour around campus with Gary Johnson as well as a tour of the nursery where Jeff Gillman is doing some very interesting work with stem girdling roots and DED resistance screening. Those of you who have not been on campus for a while may not even recognize some of these facilities. A great deal of investment has been made within the past year along with a lot of planning and hard work done by many individuals.

Watch for the mailing that will include registration materials as well as the schedule for the morning's activities. These materials will be mailed well in advance of the event. However, please reserve this date on your calendar so that we have a great turnout on July 28, 2005. Complimentary refreshments will be available during registration and lunch at the conclusion of the tours is also included in the registration fee. There is a wealth of new information to gain and new things to see on the St. Paul campus. Plan to take advantage of this tremendous learning and networking opportunity. Faculty and staff have been very active since last year's event and they always put a great deal of work into making this day meaningful for all attendees.

A special drawing will be held during lunch for a free weekend night stay for two at the Minneapolis Hyatt Regency hotel. You must be present to win.

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University of Minnesota Research Update: 2004-2005

By DR. BRIAN HORGAN
Turfgrass Extension Specialist, University of Minnesota

I've come to realize that there is no "normal" year when you work in the turf industry. The past three winters are proof of that. Well, at the University, there doesn't seem to be any sense of normality from year to year either. The University just announced wide-spread changes, from colleges being closed or merged, to the creation of a new honors college and school of design. Our college, the College of Agriculture, Food and Environmental Sciences, will merge with the College of Natural Resources if the Board of Regents approves President Bruinink's Strategic Positioning Plan. We aren't quite sure what this will mean for the turf program as within these two colleges, there are 20 individual departments and it has been suggested that that number will be reduced significantly. This planning process to make the University of Minnesota a top public research institution has been ongoing for the past year. Implementation of the strategies will start Jan. 1, 2006.

Strategic Positioning Plan

Prior to the Strategic Positioning Plan becoming public, a blow to the turf program occurred. We were told that all of our planning for a building at the TROE Center was null. This is very unfortunate as we made sure that all our "i's" were dotted and "t's" were crossed when proposing the TROE Center concept within the University. This included having the Board of Regents agree to the concept. Many of you took this personally as you have spent countless days in meetings discussing how to make the turf program the best it can be. I took this personally as I have spent the last four years selling this idea to many of you.

Standing back and considering the ramifications of not completing the TROE Center, I cannot help but think that your trust in the University is wavering at this point. I cannot blame you if you have these feelings. You have supported the turf program both monetarily and through in-kind gifts of products and services. I have calculated that the turf industry in Minnesota has contributed in excess of $750,000 to achieve what we have today – an excellent field research facility.

Many of the projects that were written about last year and published in Hole Notes are ongoing. These projects includes:

NTEP Trials

We have been very successful at obtaining all the cool-season NTEP trials including bentgrass greens and fairway, fine fescue, perennials, ryegrass and

(Continued on Page 17)

National Turfgrass Evaluation Program
Perennial Ryegrass Trial

Sure Things:

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U of M Update–

(Continued from Page 15)

Kentucky bluegrass. Data from these trials can be viewed at www.turf.umn.edu.

Breeding Program: Dr. Watkins has been very active in starting his breeding program and has established tall fescue, perennial ryegrass and Kentucky bluegrass plots at the TROE Center, Rosemont, Becker and Roseau. He is also working with some alternative species that can be defined as Low Input Sustainable Turf.

Environmental Fate

The fertilizer runoff plots are operational and we are collecting data. In addition, we constructed and tested a rainfall simulator that will be used on the bentgrass pesticide runoff plots. This will be the first year of data collection on these plots. Lastly, a project to evaluate N fractions in the soil that may be used as a predictor for reduced N applications was started with scientists from The Ohio State University.

Pest Management

With the addition of Andrew Hollman who is managing our contract work at the University of Minnesota, we will have a more active pesticide and fertilizer evaluation program. This year, we are evaluating preemergence herbicides, N fertilizer sources, Fe sources and plant growth regulators for Poa annua seedhead suppression.

Water Conservation

Jon Sass, a graduate student in the turf program, is finishing is Masters Degree this summer. His research has helped to explain how ET data and soil moisture sensors can be used to maintain healthy turf while reducing water inputs. His work was recently published in Turfgrass Trends and will be prepared for journal publication.

Evaluating alternative species for golf course fairways and putting greens - Sam Bauer, a new graduate student in the turf program and past recipient of the MGCSA scholarship, will be evaluating the use of colonial bentgrasses and velvet bentgrasses for golf course putting greens and fairways. His work will define management schemes for these species and set recommendations for Minnesota and the upper mid-west.

Low Input Sustainable Turf Project

The resources provided by the MGCSA are being managed for maximum benefit to turfgrass managers in Minnesota. All of this research and much more will be on display at our annual field day, July 28, 2005. Watch for a mailing from the Minnesota Turf and Grounds Foundation in late June for registration information.

I hope that during the next couple years of transition at the University of Minnesota the turfgrass industry can remain engaged and know that your support is greatly appreciated.

AT STILLWATER COUNTRY CLUB ON MAY 16

Brian Brown Wins BASF People vs. Pros Qualifier

Superintendent Brian Brown, a 2-handicapper from Chisago Lakes Golf Estates, shot a net 71 to win the 3rd Annual People vs. Pros Qualifier at Stillwater Country Club on May 16. Only Class A and B MGCSA members were eligible to advance to the next stage of this event.

Brown bettered Rick Traver, CGCS, Monticello Country Club, by one stroke. Traver finished second with a net 72.

Overall, 38 players participated in this event. Jeff Forsberg, an 11-handicapper from Bearpath Golf & Country Club, netted out to a 66 to win the "non-eligible" side of the tournament. Tim Beckman, Waseca Lakeside Club, finished second at 68.

The purpose of this event is to salute the crucial work of superintendents in the golf industry. The event raised $3,750 for the MGCSA.

Brown now has earned an all-expense paid trip to compete at the 3rd Annual People vs. Pros at Barton Creek, presented by BASF in Austin, Texas on Sept. 8 - 12, 2005. Brown will be one of 288 amateur golfers playing in the 54-hole national stroke play event utilizing handicaps for a chance to win $100,000 by defeating professionals Justin Leonard (18-49 division) or Ben Crenshaw (50-and-over division) televised in prime time on ESPN on September 19, 2005.

The event at Stillwater was one of 18 regional qualifier tournaments that BASF is conducting specifically for superintendents across the country and the Stillwater C.C. qualifier winner will join 17 other superintendents at the national finals. To further support the MGCSA, BASF presented the chapter with a check for $2,000 at the Stillwater tournament.

Special thanks go out to host superintendent Marlin Murphy and host golf professional Mike Tracy.

MGCSA President Robert Panuska, left, and David Oberle, BASF Corp., display a $2,000 check earmarked for the MGCSA derived from this event.

BASF Tournament Host David Oberle, left, awards Brian Brown a plaque for finishing first in the People vs. Pros Qualifying event at Stillwater Country Club on May 16.

RESULTS
(NET SCORES)

Eligible Players

71	Brian Brown
72	Rick Traver, CGCS
74	James Gardner, CGCS
74	Duane Slaughter
77	James Bade
77	Brad Zimmerman
78	Jeff Backstrom
78	Mike Nelson
78	Tom Schmidt
81	Kurt Knox
81	Chad Belland
82	Terry Negen
83	Dave Kazmierczak
87	Bill Brooks
91	Jack MacKenzie, CGCS

Non-Eligible Players

66	Jeff Forsberg
68	Tim Beckman
69	Dennis Perreault
72	Chad Snuggerud
73	Dennis Salwei
77	Shane Andrews
78	Eric Gunderson
78	Dan Brown
78	Mike Redmond
79	James Bezanson
81	Kevin Norby
82	Jamie Olsen
82	Gregg Brodd
83	Brad Melsa
84	George Gunderson
86	Robert Panuska
86	Bob Frank
86	Seth Langager
87	Joe Check
89	Jeff Schmidt
92	Dale Parske
99	Jon Almquist

What is Prostate Cancer?

Part One in a Two-Part Series

Prostate cancer is a disease in which malignant (cancer) cells form in the tissues of the prostate.

The prostate is a gland in the male reproductive system located just below the bladder (the organ that collects and empties urine) and in front of the rectum (the lower part of the intestine). It is about the size of a walnut and surrounds part of the urethra (the tube that empties urine from the bladder). The prostate gland produces fluid that makes up part of the semen.

Prostate cancer is found mainly in older men. As men age, the prostate may get bigger and block the urethra or bladder. This may cause difficulty in urination or can interfere with sexual function. The condition is called benign prostatic hyperplasia (BPH), and although it is not cancer, surgery may be needed to correct it. The symptoms of benign prostatic hyperplasia or of other problems in the prostate may be similar to symptoms for prostate cancer.

Possible signs of prostate cancer include a weak flow of urine or frequent urination.

These and other symptoms may be caused by prostate cancer. Other conditions may cause the same symptoms. A doctor should be consulted if any of the following problems occur:

+ Weak or interrupted flow of urine.
+ Frequent urination (especially at night).
+ Difficulty urinating.
+ Pain or burning during urination.
+ Blood in the urine or semen.
+ Nagging pain in the back, hips, or pelvis.
+ Painful ejaculation.

Tests that examine the prostate and blood are used to detect (find) and diagnose prostate cancer.

The following tests and procedures may be used:

Digital rectal exam (DRE): An exam of the rectum. The doctor or nurse inserts a lubricated, gloved finger into the rectum and feels the prostate through the rectal wall for lumps or abnormal areas.

Prostate-specific antigen (PSA) test: A test that measures the level of PSA in the blood. PSA is a substance made by the prostate that may be found in an increased amount in the blood of men who have prostate cancer. PSA levels may also be high in men who have an infection or inflammation of the prostate or BPH (an enlarged, but noncancerous, prostate).

Transrectal ultrasound: A procedure in which an endoscope (a thin, lighted tube) is inserted into the rectum to check the prostate. The endoscope is used to bounce high-energy sound waves (ultrasound) off internal tissues or organs and make echoes. The echoes form a picture of body tissues called a sonogram. Transrectal ultrasound may be used during a biopsy procedure.

Biopsy: The removal of cells or tissues so they can be viewed under a microscope by a pathologist. The pathologist will examine the biopsy sample to check for cancer cells and determine the Gleason score. The Gleason score ranges from 2-10 and describes how likely it is that a tumor will spread. The lower the number, the less likely the tumor is to spread. There are two types of biopsy procedures used to diagnose prostate cancer:

Transrectal biopsy: The removal of tissue from the prostate by inserting a thin needle through the rectum and into the prostate. This procedure is usually done using transrectal ultrasound to help guide the needle. A pathologist views the tissue under a microscope to look for cancer cells.

Transperineal biopsy: The removal of tissue from the prostate by inserting a thin needle through the skin between the scrotum and rectum and into the prostate. A pathologist views the tissue under a microscope to look for cancer cells.

Certain factors affect prognosis (chance of recovery) and treatment options.

The prognosis (chance of recovery) and treatment options depend on the following:

+ The stage of the cancer (whether it affects part of the prostate, involves the whole prostate, or has spread to other places in the body).
+ The patient's age and health.
+ Whether the cancer has just been diagnosed or has recurred (come back).

Prognosis also depends on the Gleason score and the level of PS.

After prostate cancer has been diagnosed, tests are done to find out if cancer cells have spread within the prostate or to other parts of the body.

(*Continued on Page 32*)


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