would cooperate so well. Record high temperatures greeted the golfers on this mid-October Wednesday. There wasn't a cloud in the sky. It was surreal to have temperatures in the low 80s with mild breezes and be playing such a wonderful golf course with good friends.

One other reward met the 142 participants of the event. Many generous donors gave door prizes so that everyone went home with more than wonderful memories of the golf course. Many of these prizes were worth the cost of registration. Look below to see what door prizes you could have won. We'd all like to thank the generous donors for making the event even greater. Please let me know if I have left your gift or donation off the list; I want to let everyone know about people who supported the WTA in this way.

Some business was conducted during the fundraiser: Lyons, Jung, Otto and Quast.

2003 WTA Golf Fundraiser Door Prizes

Donor	Door Prizes
Aquatrols	Dozen golf balls
BASF	Cash
Blackwolf Run	40 golf hats
Bruce Schweiger	Bicycle
Bullseye CC	Windshirt
DHD Products	Golf bag
Evergreen GC	Foursome of golf and other prizes
Green Bay Country Club	Shirt
Greenwood Hills	Proshop prizes
Horst	Leather brief case
Hunter Golf	2 Carhart jackets
Jacklin Seed	Jacklin windshirt, calculator
Syngenta	$200 Cash
John Deere Landscapes	2 X $40 Home Depot gift certificate plus two hats
John Hegge	2 X Badgers/ Michigan State football tickets & a multi-tool
JW Turf	A couple prizes
Lawsonia Links	Foursome of Golf
Monroe Country Club	Fousome of golf
New Berlin Hills Golf Course	Foursome of Golf
Noer Facility	Putter
Old Hickory CC	3 golf shirts
Oshkosh CC	Putter
Reinders	TV
Royal St. Patricks	18 pack of Pinnacle titanium distance golf balls
Spring Valley	Tennis ball machine, fishing pole case
Stoughton Country Club	Foursome of Golf
The Bridges Golf Course	Foursome of Golf
The Preserve at Deer Creek	Foursome of golf, logo golf shirt, and sleeve of logo balls
The Woods	2 gift certificates
Washington County Golf Course	Foursome of Golf
Waupaca Sand and Solutions	DVD player
Wisconsin River GC	Foursome of golf
Wisconsin Turf Equipment	Wind Shirts

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Japanese Beetles: Are They Doomed?

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

"BIZARRE" best explains the activity of Japanese beetles in Wisconsin in 2003. It's October; "usually" by this time of the year most Japanese beetle grubs have attained their final larval stage (i.e., 3rd instar) and are preparing to overwinter (i.e., hibernation). Yet, both 1st and 2nd instar Japanese beetle grubs are abundant, and 3rd instar grubs are far and few between. At this time, it is unclear if the grubs will attain their final larval stage; it ultimately depends on the physiological development of the grubs between now and the first sustained frost that initiates the cessation of grub feeding and final physiological preparation for overwintering. Moreover, it is not fully understood if Japanese beetle grubs can successfully overwinter as 1st or 2nd instar grubs. Because the Japanese beetle has only one generation per year, survival is imperative for future generations. Of course this is not to say that all Japanese beetles are doomed, but if a large enough portion of the population fails to successfully overwinter, next year's grub population may be adversely affected.

So, what's the cause(s) of the perceived inability of the grubs to attain the appropriate larval stage to ensure overwintering and future generations? Since last autumn, all the necessary conditions for the demise of the Japanese beetle have unfolded. A relatively dry 2002 fall, the lack of consistent snow cover, relatively deep frost (up to 7 feet in some locations in Wisconsin), cool and wet spring and early summer, and hot and dry (lack of rain) summer and fall were common where Japanese beetle populations exist. Initially, it may seem likely that the deep frost is the primary cause of the rather unusual occurrence of the Japanese beetle. However, it is quite difficult to identify one or even a combination of causes for the bizarre activity exhibited by Japanese beetles in 2003.

Nonetheless, in 2003, Japanese beetle adult emergence was delayed by as much as four weeks. This may be in part a result of the deep frost and the relatively cool, wet spring and early summer. This occurrence, coupled with relatively dry conditions commencing in early to mid-July, as the adult beetles began to fly, all contributed to a delayed egg hatch and retarded larval (i.e., grub) development. Furthermore, as dry soil conditions persisted into the fall, the sluggish development of grubs continued. This is not unexpected since most white grubs, especially Japanese beetles, are highly dependent on adequate moisture for appropriate development. Because relatively few grubs have attained the 3rd larval stage, they likely don't have the necessary fat reserves (i.e., fat body) to overwriter. As a result, it's anticipated that next year's grub populations will be measurably lower compared to years previous.

Effective grub sampling this fall may provide you with an appropriate estimate of anticipated activity in 2004. If the grub population is predominantly comprised of 1st and 2nd instar grubs, the likelihood of problems with Japanese beetle grubs next growing season is relatively low. However, should you have mostly 3rd instar larvae, the chances are high that you will have to focus your attention to Japanese beetles in 2004.

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Nakoma Golf Club – September's Superintendent Meeting

By Dustin Riley, *Golf Course Superintendent, Oconomowoc Golf Club*

The annual WGCSA Superintendent Tournament was held at Nakoma Golf Club on September 22. With the assistance from Clark Rowles, golf course superintendent, and Skip Avery, general manager, nearly 90 attendees enjoyed a fantastic setup, which included lunch, education, hors d' oeuvres, golf and dinner. Bob Vavrek, Agronomist, USGA Green Section, provided the education. Bob presented his annual "Year in Review." Due to the cold, open winter of 2003-2003 there were many concerns with winter kill and spring healing. Bob also presented discussions and solutions for ant control, moss control, proper topdressing and aeration. As expected, Bob's slide show supplied many impressive pictures of "do's and don'ts." All superintendents seemed relieved when his slide show ended and their golf course wasn't selected for material in his presentation.

Brian Zimmerman, former Nakoma golf course staff member, visits with assistant golf course superintendent at Nakoma, Chuck Frazier.

Clark Rowles, a Pennsylvania native, began his golf course career in 1975 at a club his parents belonged to. As a 1986 graduate of

the Turfgrass Management Program at Penn Sate, Clark developed his skills and experiences at such courses as Congressional CC, Oglebay Resort, HarbourTowne Resort and other sites in Texas, Pennsylvania and Virginia. In 1993, Clark joined Wisconsin by assuming the Director of Golf Course Operations at the Geneva National Golf Club. Three years later, Clark was hired by the Nakoma Golf Club.

Besides managing his maintenance staff of 16, Clark seeks to set aside quality family time with his wife, Vicki, and their three sons. Since his two oldest boys are heavily active in sports, Clark keeps involved by coaching baseball during the summer months and also serves on the board of the Sun Prairie Youth Hockey Association. Excluding his marriage and family, Clark's greatest moment was a result of a hole-in-one at Pebble Beach.

Eighty-six players registered to enter the annual Superintendent Tournament. Players are organized into flights based upon handicap and their association membership class.

The September meeting at Nakoma Golf Club was very successful and enjoyable. The WGCSA meeting success has been attributed to those who attend and support the host clubs. We hope that this success will continue at the October Meeting to be held at Racine CC on October 14th.

TOURNAMENT FORMAT

Superintendents (Class A & B) with established handicap

Gross Winner: Steve Meyer

A Flight (0-16 hdcp)
1st: Mark Schwarting
2nd: Dan Shaw

B Flight (17-32 hdcp)
1st: Keith Nienow
2nd: Mike Werth

PEORIA: Superintendents without an established handicap, other classifications and affiliates
1st: Rick Weiterman
2nd: John Krutilla

Hole Events: Closest to the Pin
Dan Shaw
Jeff Wilson
Pat Staehler
Brett Grams

Longest Drive: Rick Weiterman

Integrated Biological and Chemical Pest Management

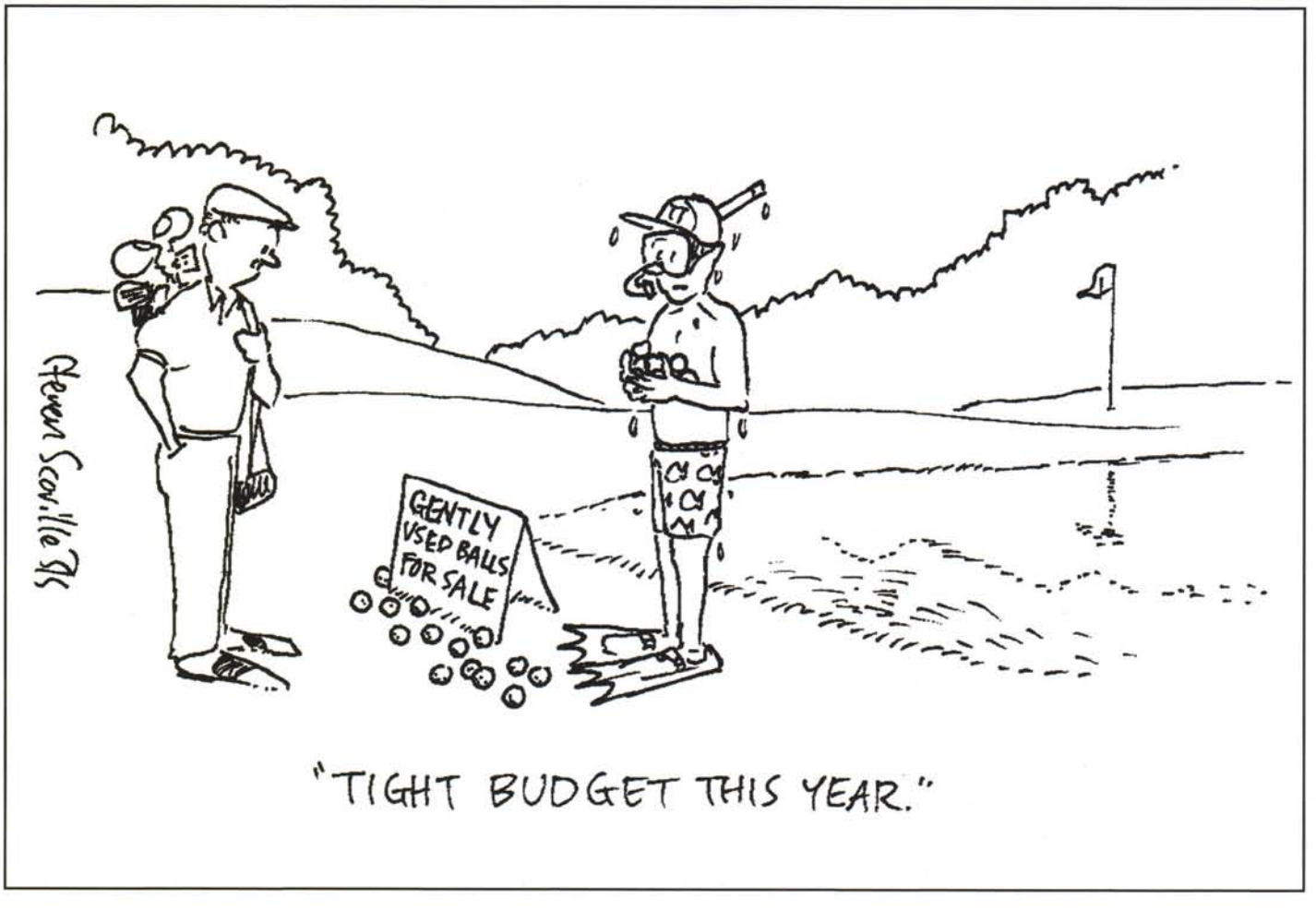
By Dr. Frank S. Rossi, *Assistant Professor, Turfgrass Science Program, Cornell University*

Editor's Note: Professor Rossi will be returning to Wisconsin in November and December as part of the program at our Wisconsin Golf Turf Symposium and as the instructor of a GCSAA seminar on annual bluegrass. For the past seven years at Cornell Frank has gained national attention with his work on annual bluegrass and his interest in biological controls for golf course pests. This article looks at the latter and appeared in the Spring 2003, Volume 14, No. 1 issue of CUTT - Cornell University Turfgrass Times. It appears with Frank's permission.

The future of golf turf management will be shaped by what we seek answers for today. Turfgrass research is maturing where more basic science is being used to understand practical observations. More research projects that address plant genetics, physiology and soil microbiology will lay a solid foundation for future management programs.

Applied research programs that address environmental concerns - such as reduced reliance on potable water and reducing pesticide use as a means of pollution prevention - are vital in an increasingly regulatory environment. Clearly, we are entering an important transitional phase where more people will be asked to use non-potable water and will be required to reduce pesticide use to be more environmentally compatible.

Important research addressing these issues is underway, especially the integration of biological control programs with synthetic pesticides. Studies have shown that certain biological products are more



effective when used in combination with pesticides. This will result in an overall reduction in pesticide use and an increased understanding of the mechanisms of biological control.

Your Daily Microbe?

Fungal diseases of turf are a major concern throughout northern climates and new diseases are wreaking havoc on southern turf. Diseases can work quickly to destroy high value areas and often preventative fungicide applications are required. Biological control of diseases has been plagued with poor performance (inconsistency) and an inability to suppress diseases during an intense epidemic.

A system was developed (Bioject System, Turf Labs, Inc.) to deliver a biological control organism, TX-1, proven in the laboratory to control dollar spot, brown patch and pythium diseases of turf. However, complications with the delivery system and an inability to deliver economic results has hampered its success.

Researchers Bresnahan and Drohen at the University of Massachusetts conducted evaluations of the Bioject System in 1998. One objective of the study was to evaluate the ability of the Bioject to suppress dollar spot on fairway turf.

Daily applications of the organism were made following a 12-hour fermentation cycle. The organism was applied with a watering can between the hours of 9 PM and 12 AM to simulate nightly irrigation, not through the Bioject System.

Dollar spot levels in the untreated plots were significantly greater than the action threshold that would require treatment (5 spots per 18 square ft. plot). Dollar spot levels did not reach the action threshold in Bioject treated plots and were similar to Daconil and Banner fungicide programs.

Under more severe disease pressure, the Bioject treatments provided 86% control but did not maintain acceptable quality turf, as dollar spot levels were well above the threshold. Still, the Bioject treated plots that only received Daconil or Banner when threshold levels were reached, reduced fungicide use approximately 70 - 80% as compared to fungicide treated plots with Bioject treatment.

This preliminary study is the type of integrated research vital for reducing pesticide use during the transitional period until more effective biocontrol systems are developed. Yet, questions continue to plague the delivery system via irrigation lines.

Clearly, the TX-1 organism developed by Dr. Joe Vargas at Michigan State University, when applied in the correct amount, is capable of reducing the need for fungicides. Further research will assist this technology by improving effectiveness. However, will superintendents be willing to reduce prophylactic sprays and set threshold that allow for some infestation?

Grub Slow Down

Insect pests - as a result of their mobility and unpredictability - present a unique challenge for golf turf managers. Disease and weed pests often occur in specific areas as a result of environmental or traffic stress. However, distribution of insects in time and space challenge the most avid integrated pest management practitioner.

Of all the pest issues influenced by the EPA's Food Quality Protection Act (FQPA), insecticide chemistry has been the most severely restricted. The focus on neurosystem-targeted chemistry, notably the organophosphate class of compounds, has eliminated the use of most rescue treatments (applications made once insect population is assessed). Consequently, the compounds left on the market offer mostly preventive control. This provides peace of mind but impedes potential reduction in overall pesticide use.

Entomopathogenic nematodes are an emerging biological organism for the control of soil inhabiting insects such as grubs. These wormlike organisms are able to infect the grubs and parasitize them, thereby causing their death. However, nematode performance, like most control systems that rely on a biological organism, is plagued by inconsistencies. Questions have been raised and addressed regarding soil moisture, the amount of organisms to apply and specificity for different grub species. Many questions remain unanswered.

Recently, Professor Albrecht Koppenhofer of Rutgers University in New Jersey has led a team of scientists from Ohio, California and New Jersey in investigating a strategy that integrates nematode and insecticide use. Field and greenhouse studies demonstrated a synergistic interaction between nematodes and imidacloprid (Merit, Bayer