

BRIEFS



LUIKENS BUSY IN THE SOUTHLAND

CONROE, Texas — Richard Luikens Golf Services here is consulting on several construction projects scheduled to open this fall in Texas, Arkansas and Louisiana. Luikens, former director of golf course maintenance for The Woodlands Resort & Country Club in Houston, assisted in the grow-in with Beacon Lakes Golf Club and Green River Golf Course in Houston, RidgePointe Country Club in Jonesboro, Ark., and Cypress Bend Golf Course in Many, La. For more information contact Luikens at 409-441-5100.

NY TURF SHOW NOV. 12-15

ROCHESTER, N.Y. — The annual New York State Turfgrass Association Turf and Grounds Exposition will be held Nov. 12-15 at the Rochester Riverside Convention Center. This year's event will feature educational seminars, trade show and keynote speaker Paul Maguire, a former Buffalo Bill and commentator for NBC Sports football coverage. For more information contact 800-873-TURF.



GA. TURFGRASS REPORT POSITIVE

DULUTH, Ga. — The Georgia Turfgrass Foundation Trust's Turfgrass Research Report demonstrates that many new bentgrass cultivars are performing better than traditional golf course bentgrasses. Results were gathered in the eight Southern states participating in the 1993 National Turfgrass Evaluation Program trials. For more information contact the Trust at 770-975-4123.

PSU BESTOWS AWARDS OF MERIT

STATE COLLEGE, Pa. — Three Pennsylvania State University graduate students have received Awards of Merit from the Pennsylvania Turfgrass Council. Quebec native Andrea-Anne Couillard received her bachelor's and master's degrees from Laval University in Quebec, her doctorate from Penn State and has accepted a post-doctoral position at Guam University. Kathy Kallenbach of Erie, Pa., received her bachelor's and master's degrees at Penn State and has been accepted for the doctoral program there. Douglas Linde of Coopersburg, Pa., completed his doctoral work this summer and hopes to become a professor.



ONE IF BY AIR, TWO IF BY SEA

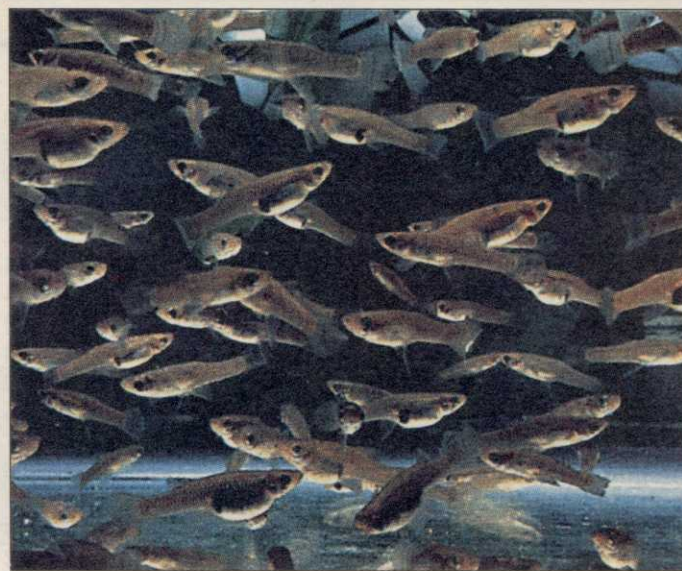
Gambusias worth their weight in mosquitoes

By MARK LESLIE

CHESTERTON, Ind. — So, you've tried the "air" approach — the bat, purple martin and tree swallow houses are all installed — but the mosquitoes are still bugging golfers and the grounds crew alike. How about trying the "water" approach, getting the little pests before they take to flight?

That's what senior ecologist Robert Wolfe of Walkerton-based J.F. New & Associates here recommended to superintendent Don Ewoldt of Sand Creek Country Club in Chesterton. The water approach entails transplanting the little-known *Gambusia asfinis*, commonly known as mosquitofish, to Sand Creek's ponds and wetlands. *Gambusia* could become the superintendent's best friend at golf courses with still, or slowly moving water — the best breeding ground for mosquitoes.

Since their mouths are located on top of their heads, the *Gambusia* eat mosquito larvae off the water surface before they hatch. And since they grow to a full size of 1 to 2 inches, they can reach very shallow water that larger fish can not.



Also, they are tolerant of poor water-quality conditions and don't need much oxygen.

"When we deal with golf courses, they are always concerned with mosquitoes and want to drain the wetlands," Wolfe said. "But you can't do that."

"Mosquitofish are one piece in the control puzzle. I recommend purple martin, tree swallows, bats and

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MSU's Vargas on the cusp of pioneering research

Dr. Joe Vargas has been a professor of botany and plant pathology for 28 years at Michigan State University, where he has been involved in teaching, research and extension. His has helped develop



Dr. Joe Vargas

the *Pseudomonas aureofaciens* (TX-1) biological-control microorganism that is proving useful in treating warm-weather diseases when applied through EcoSoils' Bioject system (see August '96 Golf Course News); discovered the first bacterial disease in turf on Toronto creeping bentgrass; reported the first resistance by a turfgrass pathogen to a systemic fungicide and later reported the first resistance to DMI fungicide by the dollar spot organism; developed the

first mathematical prediction model for a turfgrass disease; and developed a fungicide timing model for summer patch that is used worldwide.

**Golf Course News:** Can you tell us about your work on injecting disease-resistant genes into bentgrass?

**Joe Vargas:** The USGA funded a project for this at MSU. Dr. Miriam Sticklen isolated a chitinase gene from an elm tree and is trying to incorporate it into creeping bentgrass. Since most fungi have chitin in their cell walls, theoretically, a chitinase gene in the turf plant should produce chitinase that could attack the cell wall or the fungus and destroy it. A year from now, we should know how successful we have been.

**GCN:** What is the nature of MSU's



work on sand green construction?

**JV:** The USGA has funded a project to look at mixes for USGA-spec greens conducted by Drs. Crum, Paul Rieke and John Rogers. USGA greens are still the most popular. Hopefully this

will lead to some minor refinements to make them even better.

**GCN:** What are you discovering about using peat moss to minimize damage from hydraulic oil leaks?

**JV:** Most researchers believed, for many years, that the heat of the hydraulic oil killed the turf when a mower hose ruptured. Attempts to remove the oil with soap or wetting agent failed. Zorbit Technologies approached us with a product called Peat Sorb, a super dry peat moss.

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New zoysiagrasses fulfilling prophecies of the past

By MARK LESLIE

BELTSVILLE, Md. — You could call it The Zoysiastine Prophecy. And in this case, it came true.

"Two years from now," Dr. Milt Engelke of Texas A&M University told Golf Course News in 1994, "more vegetative types will come on line, and they will use 20 to 30 percent of the water required by Meyer, which translates to 50- to 70-percent less water than used for hybrid Bermudagrass. These also will have excellent cold hardiness and very low fertility requirements."

In the late-summer of 1996, Engelke has proven prophetic.

"It's all true," he said. "Actually, I've known this for five years. We've just been taking a long time getting them [zoysiagrasses] out."

A more moderate Susan Samudio, head of Jacklin Golf's zoysiagrass breeding program since 1990, concurred: "We've made tremendous advances in seed production. But if you compare them to cool-season grasses, it's still extremely low. We're almost to the point where we're satisfied



with the yield and we're starting to work more on the qualitative traits — texture, color and density."

Some golf course superintendents are sold on zoysiagrasses for their areas, but many are waiting to see how the new varieties perform before

taking the plunge.

Zoysias win golfers' favor for their upright growth that gives a consistently good lie. Superintendents like them for many reasons.

"After a lot of investigating, zoysia was picked as the best for our transition area — not only from a playability standpoint, but for its financial advantages as well," said Wayne Van Arendonk, superintendent at Rolling Hills Country Club in Wichita, Kan., which solid-sodded its fairways, green surrounds and tees — 34 acres worth. "We figure the annual savings between \$45,000 to \$60,000."

Rolling Hills had a mix of ryegrass and common Bermudagrass, a cool- and warm-season mix that proved hard to maintain.

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Cheaper product forecast for zoysias

COLLEGE STATION, Texas — Faster production cycles for the newer zoysiagrass varieties should translate to better — and cheaper — availability. Good news because availability has been a problem.

Concerning his grasses, Dr. Milt Engelke of Texas A&M University said in early August: "We're just now going into production this year. We still have not cut sod for the first production, so it probably won't go into production until next year and it may not be available until 1998."

Future availability should be improved — at least for some varieties.

"The production cycles are much faster on the newer varieties," Engelke said. "With Palisades and Crowne, which are El Toro types,

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## Vargas on gene injection, other modern advances

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After trying to convince them they were wasting their money, we conducted the experiment anyway. They were right. If we applied Peat Sorb within a half hour of the spill, plants didn't die. Peat Sorb is so effective in absorbing hydrocarbons, that if you apply it before the oil reaches the crown of the turfgrass plant, the plant will live. Recovery of the injured foliage occurs very quickly for the uninjured crown.

**GCN:** How is your GCSAA-funded research progressing on a cure for crown-rotting anthracnose?

**JV:** GCSAA has a new policy of matching funds donated by local chapters for practical research. Crown-rotting anthracnose (CRA) has become a major problem on U.S. putting greens. The increased incidence of CRA is probably related to close mowing heights, which puts stress on the plants, and the high-sand content greens causing wounds that allow pathogen entry into the plant. Control for many years was high rates of thiophanate-methyl drenched into turf. However, in the past couple of years, the CRA fungus has developed resistance to this chemistry. This research will hopefully lead to a better understanding of the disease and more practical ways of managing it.

**GCN:** What do you think of the way the USGA and GCSAA allocate their research dollars? Is there something they could do to improve the process?

**JV:** The USGA has done a great job of spreading the money around U.S. universities on worthwhile projects. Bringing Dr. Mike Kenna on board as research director turned the program around because you had a full-time academic person who understood research. [National Director] Jim Snow deserves credit for convincing the USGA's executive committee of the importance of continuing support for turfgrass research.

GCSAA is just back in the business of supporting research. They likewise have a former academic heading their research program, Dr. Jeff Nus, who was involved in university research before he went to GCSAA. Having input from local GCSAA chapters on their research needs helps money go to worthwhile projects.

**GCN:** Your book, *Management of Turfgrass Diseases*, is generally considered one of the best turfgrass science books on the market. Do you have plans for any additional books?

**JV:** I am writing a book dealing with pesticides and how they relate to human and animal health products, as well as how their toxicity compares to the food we consume and the everyday products

we use around the house.

**GCN:** In what areas will the major advances in turfgrass research come over the next 10 years?

**JV:** The major advances will come in the areas of turfgrass breeding and biological management of pests because of genetic engineering and our ability to move genes from one species to another. Several researchers have

creeping bentgrass plants that are resistant to Roundup and Finale. Imagine a creeping bentgrass cultivar resistant to either one of these. You can spray your creeping bentgrass once a month and not worry about annual bluegrass.

Eventually, we'll be able to put BT genes or endophytes into creeping bentgrass, which should eliminate cutworm and sod webworm problems. We have many good biological-control agents, and with technology like the Bioject, and others yet to come, biological-control agents will be delivered in a

timely and efficient manner.

As good as some of the biological control agents are, we should be able to genetically engineer even better ones. This does not mean all our problems are over. There are regulatory problems in getting these products released. Resistance by weeds, insects and fungi will inevitably occur to the genetically engineered plants and microbes. But there should be others coming on stream all the time to replace them. The next five to 10 years are going to be the most exciting we have ever seen in the turf industry.

### USGA JOINS EPA GROUP

FAR HILLS, N.J. — The U.S. Golf Association is one of 10 companies and associations that are charter members of the Pesticide Environmental Stewardship Program, an initiative of the federal Environmental Protection Agency (EPA) to reduce the health and environmental risks of pesticide use. "I commend the organizations that have stepped up and made the commitment to reduce the potential risks of pesticides," said EPA Administrator Carol M. Browner.

## Turn your cart fleet into a divot repair armada.

While our new Seed & Soil Caddie for Powered Golf Carts is not the first system ever invented for carrying seed and soil to the fairway, it certainly is the best. Compare the advantages for yourself.

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Standard Golf Company  
P.O. Box 68  
Cedar Falls, Iowa 50613 U.S.A.  
319-266-2638  
fax 319-266-9627

