

cycling would be incomplete and the soil could be said to be "imbalanced." When nutrient/mineral imbalances occur, it leads the way for certain microbial populations to proliferate and dominate. If pathogenic species dominate an area, then sensitive plants are in danger of becoming infected and an epidemic ensues.

While only a relatively few microbes, both bacterial and fungal, cause disease in plants and animals, a single infestation of *Rhizoctonia* (brown patch) or *Gaeumannomyces* can devastate a green. When a fungus invades an area it is difficult and costly to eradicate. From a fungal point of view, all any fungus wants is a warm moist place to live with an ample supply of food close at hand. A golf course usually provides the precise conditions that not only allow certain fungi a free ride, but in a sense, invite them in to stay.

However, certain defenders of the turf can and will defend grasses and other plants from the insidious invaders. Over the past 20-30 years, the prevalent method of ridding a green of the fungal marauders was to add fungicides. In recent years, golf courses and farms have come under attack for their supposed contamination of the environment with major amounts of chemicals and fertilizers applied in an effort to grow lush green lawns and a food supply to feed the world respectively.

In response to new governmental restrictions on chemical use, some operators are trying the natural approach of building and maintaining organic golf courses. A recent innovative approach is to add small doses of nutrients and microbes simultaneously to the courses. The result is efficient use of the fertilizers with the added bonus of inoculation with a diverse bacterial population.

This method of microdosing is being implemented successfully by such golf course superintendents as Jon Snider (Texas Star GC, Dallas/Ft. Worth) and Nels Lindgren (Loch Lloyd, Kansas City).

Use of the microdosing technique allows a reduction in the amount of chemicals applied and also allows the elimination of certain growth regulators. The use of such microbially-based inoculants as SuperBio microorganisms, a diverse group of 30 different microorganisms, promotes

the growth of healthy grass and other vegetation. Microbial products are not meant to replace traditional uses of fungicides, but may allow fewer chemicals to be applied. When SuperBio microorganisms are applied several days after application of fungal control agents, the bacterial diversity in the treated area is restored. In preliminary tests, certain of the SuperBio bacteria are showing promise in retarding growth of selected fungi such as *Gaeumannomyces* (take all) and *Cylindrocladium* (damping off).

Traditionally, the scientific community has been slow to support the need for research in microbial diversity since much of academic bacterial research is performed on pure cultures made up of only one bacterial type.

The problem in this approach lies in the fact that bacteria and indeed all other organisms on earth rarely if ever exist in pure cultures. All creatures on earth need help from other organisms, whether they are microbes, animals, plants, scientists or golf course superintendents.

However, within the past 10 years, the scientific community has begun to view microbial diversity in a different light. More research is now being done on mixed cultures of microbes in their natural habitats. The time has come to work together, microbes and man, for a healthier, safer place to live, work and play in the new millennium.

DEBRAH A. BECK, PH.D.

Advanced Microbial Solutions, Inc.

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TIDINGS FROM THE TC

Field Days Bring the Whole Turf Team Together

BY JOHN CISAR

University of Florida Turf Coordinator

ITEM: Turfgrass Field Day and South Florida Expo set for March 16 in Ft. Lauderdale. Overseed Field Day set for March 23 in Gainesville.

It's south Florida's turn to host the annual turf field day. This year the University of Florida Turfgrass Field Day will be held in conjunction with the South Florida Expo at the Ft. Lauderdale Research and Education Center.

The Field Day brings the entire turf team together. Presentations from state-wide faculty, field tours, equipment and supplier demonstrations, CEUs, and a great lunch will be featured. It's a great opportunity to see what is happening in turfgrass research in Florida and to meet the faculty of the University's turf team

The South Florida Expo is the major annual fundraising effort by the South Florida Golf Course Superintendents Association to support the Otto Schmeisser Research Green at the FLREC. Each year, the superintendents — with the generous support of vendors and suppliers — raise a large portion of the money needed to fund the technical support staff on the Green.

This year the event is headed by Jimmy Walker, SFGCSA president. Come on out to the Field Day and Expo on Thursday March 16, and show your support for the efforts of the University, the South Florida GCS Chapter and turfgrass industry.

For further information about registration, or for supplier and manufacturer booth sponsorship, contact Marie Roberts, FGCSA or me at (954) 475-8990.

Another event of great interest to superintendents is the Overseed Field Day. The event is scheduled for March 23 in Gainesville. Al Dudeck and the entire turf program do a terrific job in putting on the Overseed Field Day each year. The overseed Field Day includes research tours at the

2000 Florida Plants of the Year - Part 1

Editors Note: The Florida Plants of the Year program was launched in 1998 and has been beneficial to both consumers and growers. Purchasers are introduced to under-utilized but proven Florida plant material. The plants are chosen each year by a committee of horticulturists, nurserymen, educators, landscape architects and others representing Central, North and South Florida..

Common Name: White Geiger

Botanical Name: *Cordia boissieri*

Hardiness: Zones 9-11

Mature Height X Spread: 15 feet tall and 10 feet wide

Classification: Landscape tree or large shrub

Landscape Use: Specimen tree, small tree for street planting

Characteristics: White, papery flowers give their main display in spring but may form all through the warm months

Small evergreen tree that gets up to 15 feet tall in full sun and is hardy to cold weather in South Florida and blooms heavily in the early summer. It continues to bloom sporadically through the remainder of the growing season. *Cordia* makes an excellent street tree that is deciduous in Central Florida. The small tree is often seen grown as a large branching shrub.



Common Name: Silver Saw Palmetto

Botanical Name: *Sereoa repens* (silver form)

Hardiness: Zones 8-11

Mature Height X Spread: 6' tall x 6' wide

Classification: Landscape palm

Landscape Use: Mass planting, background

Characteristics: Silvery leaves are beautiful in their own right and provide a background for brighter colors

Slow growing clumps form multiple trunks with blue-green palmate leaves. Flower stalks produce black berries that are used as a cancer medicine. This Florida native is cold hardy in all parts of Florida and tolerant of salt.



Common Name: Pineapple Guava

Botanical Name: *Acca sellowiana* (formerly known as *Feijoa sellowiana*)

Hardiness: Zones 7-10

Mature Height X Spread: 8-12' tall and wide, can be kept lower with regular pruning.

Classification: Evergreen landscape shrub

Interior /Landscape Use: Background, hedge or specimen shrub for full sun to partial shade

Characteristics: Grey-green foliage is handsome all year

Acca is a large salt tolerant evergreen shrub with waxy edible petals in the spring, white on the outside and dark red inside with showy red stamens. *Acca* produces and edible grey-green, oblong (2-4 inches) guava-like fruit in some areas of Florida. it can be used as a hedge plant, foundation plant or specimen.



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Charles Young takes the helm at UF.

With the resignation of President John Lombardi, Charles Young, former longterm chancellor of UCLA, has stepped in as an interim president. Dr. Young comes to Florida with tremendous credentials for leading the university during the transition in leadership. We offer our gratitude for his many years of service to Dr. Lombardi and extend a warm welcome to Dr. Young.

Recently, Provost Elizabeth Capaldi, resigned and returned to the University faculty. Dr. Capaldi is perhaps most well known for developing the University of Florida Bank. The Bank accrued financial reserves obtained through improved efficiency in the University of Florida system. These funds were used for innovative project enhancements. These funds were

also used to provide 15 percent raises to exceptional University of Florida faculty. We wish Dr. Capaldi well in her new role.

Turf pros rewarded

I am very pleased to announce that three of our turf team faculty received special 15 percent pay increases mentioned in the previous item. Drs. Bryan Unruh, Grady Miller, and John Haydu were three out of a total of 15 IFAS faculty recognized for outstanding efforts. These scientists are all well-deserving and I am happy that turf faculty are getting this type of recognition.

Grants and project updates

I announced at the fall 1999 FGCSA board meeting that Florida turf did not receive any USGA grants this year for the first time in recent memory. We put in a lot of grant proposals but so did the rest of nation (well over 100) and with only 12 grants given out, our chances were slim even though the Florida proposals were excellent. We'll keep trying to increase the

odds in our favor by increased advocacy of UF proposals with the USGA.

I am aware of three proposals submitted to the GCSAA this year for Chapter Cooperative funding. I put in a proposal sponsored by the Palm Beach Chapter for support of the new ultradwarf management trial at the FLREC.

Dr. George Snyder and I also put in a proposal to investigate the role of gypsum to alleviate sodium effects on bermudagrass turf. This project was supported by the South Florida Chapter.

The FGCSA sponsored Dr. Monica Elliott's proposal to investigate the effect of added soil microbes in turf. Potentially, the GCSAA funding program could generate significant dollars for research in this state. We are very grateful to the Florida superintendents for their sponsorship of our projects. If we are successful this year, I envision even more of these types of partnerships in the future.

The ultradwarf management trial is underway at the FLREC. Three ultradwarfs



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are in the test: Champion, FloraDwarf, and TiffEagle. In the first year, management practices such as verticutting, topdressing and N:K ratios will be addressed.

Milestones.

Many changes have come to our program. Dr. **Bob Dunn**, Extension nematologist, retired after many years with IFAS. We thank Bob and wish him and his family the best in retirement. Dr. **Cathy Neal**, multi-countyturfExtension Agent in Central Florida, recently left Florida for a faculty position at the University of New Hampshire. We thank Cathy for all her efforts in Central Florida and wish her the best.

TAWG members, Dr. **George Agrios**, chair of Plant Pathology, and Dr. **Randy Brown**, chair of the Soil and Water Sciences Department, both announced their resignations as department chairs. We thank Drs. Agrios and Brown for their guidance and wish them well in their new roles. Drs. **Tito French**, Agronomy and **Alan Smjastrala**, Ag Engineering recently passed away. Both faculty made contributions to turf during their tenure at UF. We miss them and send our deepest regards to both Tito's and Alan's families.

Welcome aboard to Dr. **Carol Stiles**, turf plant pathology. Dr. Stiles is the newest member of our turf team. She has been on board since the new year. Candidates were interviewed for the soils position at the Everglades Research and Education Center in October 1999. The turf entomologist position closed in October 1999. There were 18 candidates for the position which will be housed at the FLREC.

FTGA UPDATE

FTGA Regional Seminar Series Debuts Jan. 11

The FTGA's Regional Seminar Series debuts in Lake Worth Jan. 11 and zig-zags to Ft. Myers, Tampa, Sanford, Jacksonville and ends up in Milton on Feb. 3. Nearly 2,000 members and their employees will participate in this educational effort. Restricted Pesticide User License CEUs and GCSAA untested PDUs will be available for those needing the credits.

FTGA Returns to UF Campus

The FTGA's Y2K Conference and Show will return to Gainesville on Aug. 14-17. The Conference and Show committees are busy planning the calendar of events and scheduling educational sessions and events to provide attendees with several options to maximize their conference experience and minimize time away from work. This year there will be an afternoon/evening Trade Show reception and grand opening on Tuesday, Aug. 15.

Now that remodeling and construction on the O'Connell Center is complete, all of the classrooms are being clustered in and around the O'Connell Center to eliminate long walks or drives to satellite classrooms like last year. This year it will be Park 'n' Learn.

The FGCSA plans to offer one GCSAA/Etonic Leadership seminar for CEU credit as well as special golf course presentations. There will also be IFAS workshops and concurrent sessions on turf research and general turf management topics.

Get Well Wishes

FTGA Office Manager Cheryl Stocklin is recuperating from a broken shoulder injury. She could use some cheer and support.

Send your get well wishes to Cheryl care of the FTGA Office at:

5850 T.G. Lee Blvd, Suite 110, Orlando, FL 32822-4408.

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FQPA, EPA & Food Safety: A different view:

Children's health may be *harmed* by restricting pesticides

BY KENNETH W. CHILTON, PH.D

Center for the Study of American Business

In the name of protecting families and children, the Environmental Protection Agency has entered into agreements with manufacturers to restrict the use of two pesticides — methyl parathion and azinphos methyl — widely applied to protect fruits and vegetables in the United States.

In announcing the agreement, Administrator Carol Browner said, "Our actions today will protect children from the adverse effects of exposure to pesticides commonly used on foods." She added, "I want to emphasize that for children and adults alike, the benefits of a diet that includes fruits and vegetables far outweigh the risks of pesticides."

How's that?

Administrator Browner's remarks beg the question: If the benefits of fruits and vegetables in our diets far outweigh the minute risks from trace amounts of pesticide residues, then why is EPA moving to restrict pesticides that are so vital to increasing their quantity and quality?

The answer is that the 1996 Food Quality Protection Act regulates risks from pesticide residues with no consideration of the beneficial role played by safe applications of pesticides. This response makes sense only inside the Beltway.

This tunnel vision approach, unfortunately, is quite typical of environmental law. But it is especially unfortunate in this case because in the name of children's health and in compliance with the FQPA, EPA is more likely to harm than to protect America's children.

A diet rich in fruit and vegetables is associated with reduced risk of degenerative diseases, including cancer, cardiovascular disease, and brain dysfunction. Bruce

Ames and Lois Swirsky Gold of the University of California at Berkeley report that the rate of most types of cancer is roughly twice as high in the 25 percent of the population with the lowest intake of fruits and vegetables as in the 25 percent with the highest.

And pesticides play an important role in producing high-quality, low-cost fruits and vegetables. Researchers at Texas A&M University estimate that a 50 percent reduction in pesticide use on crops of nine fruits and vegetables (apples, grapes, lettuce, onions, oranges, peaches, potatoes, sweet corn, and tomatoes) would reduce average yields by 37 percent.

Banning methyl parathion's use on a variety of fresh fruits and vegetables and reducing application rates and allowable residues for azinphos methyl on apples, pears and peaches will raise prices for the produce protected by these widely used effective compounds. Higher prices mean that fewer families will choose to purchase fresh produce. Children in low-income families will be impacted the most of all.

Who speaks for these children? Well, certainly not the environmental groups. The reaction by the Natural Resources Defense Council to the announced pesticide restrictions was that it plans to sue EPA for failing to move fast enough to restrict even more pesticides.

The Consumers Union and the Envi-

ronmental Working Group mounted a campaign this year to frighten the public about pesticide residues. The media blitz included a full-page advertisement in the New York Times. Their primary target was methyl parathion, the pesticide just banned by EPA.

But according to Carl Winter, director of the FoodSafe Program at the University of California at Davis, "When you use real data it's hard to make a strong case that pesticides are posing real health threats to infants and children."


Robert Golden, a toxicologist and former EPA employee was even more taken aback by the CU-EWG campaign. He warned, "People need to know that all the evidence just keeps pointing towards eating more fruits and vegetables. What Consumers Union has done, this is dangerous stuff."

The environmental groups that engage in counterproductive fear mongering about pesticide residues should be required to explain their motivations, rather than being lauded for their actions.

EPA claims to know what is the best way to protect crops and reduce risks from pesticide residues. With its regulatory blinders firmly in place, the agency is focusing on eliminating pesticides with a long history of effective and safe use, expecting them to be replaced by lower-risk alternatives. EPA's version of the "Field of Dreams" theme is, "If you ban it, better replacements will come."

EPA is not solely to blame for displaying such tunnel vision, however. The Food Quality Protection Act calls for virtual elimination of one type of risk - pesticide residues - while ignoring the unhealthful impacts of this myopic approach on the diets of Americans, especially children. Congress should rethink this well-meaning but counterproductive law.

Editor's Note: *Kenneth W. Chilton, Ph.D., is a distinguished senior fellow and manager of environmental research at the Center for the Study of American Business at Washington University in St. Louis, Mo. He can be reached at CSAB, Washington University, Campus Box 1027, St. Louis, Mo. 63130.*

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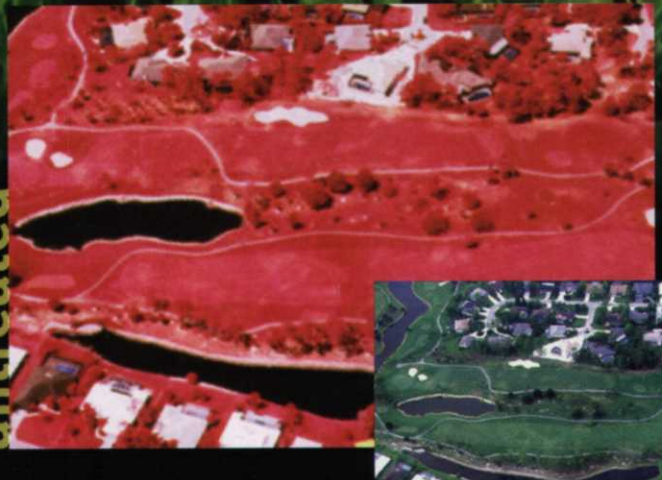
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Near infrared and aerial photography at Imperial Golf Club in Naples, Florida, captures the benefits of using InfilTRx Soil Penetrant on fairways.



Photos were taken June 8th, 1998.

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*Slash pines and open grassy areas often mean bluebirds like this male perched on a branch.
Photo by George McBath.*

The Bluebird Man of Naples Builds Nest Boxes from PVC Pipe

BY GEORGE MCBATH

In February 1994 a friend at Eagle Creek CC in Naples said, "George, you had a successful nest box program for bluebirds on your farm in Virginia. Why don't you cut out some nest boxes? We will put them together, and then you and I will hang them up." I did. They did, and we did.

The morning after hanging the boxes, I got an 8 a.m. call from an excited Eagle Creek resident telling me that there were two bluebirds standing on a new nest box across from his house. This was the first of what has become six years of

experiences showing me just how very successful golf course bluebird nest box projects could be.

That first spring we ended up with eight different pairs of bluebirds using our boxes at Eagle Creek. Three pairs nested twice, and one pair nested three times, not an uncommon circumstance in south Florida.

Those first Eagle Creek boxes were made from wood. Observations that summer suggested that I would need longer-lived construction materials. Almost immediately, woodpeckers enlarged entrance holes making the boxes unsuited for bluebirds. In attempting to move unused boxes to different locations, the wood backs tended to split. Observations after the summer rains indicated I was going to have problems with the wood rotting.

I began experimenting with different

construction materials and settled on a combination that has proved to be long lasting and very successful. The body of my houses is now made from discarded, used pvc water and sewer pipe, 6-inch diameter for bluebirds, 4-inch and 8-inch diameter for other cavity nesters.

These pvc bodies are almost indestructible. The attachment bracket for securing the nest cylinder to the tree comes from scraps of plastic lumber discarded from the dock-building industry. This plastic lumber is produced by melting down No. 1 and No. 2 plastic milk and soda containers. It too is indestructible. The tops and bottoms of the nest cylinders are made from heavy-duty aluminum which is both recycled and recyclable.

With increasing interest of golf courses in the Audubon Cooperative Sanctuary Program — which promotes