

## *Rayside Honored by Estech*

William Evans Rayside better known to his friends and customers as "Bill" was awarded Estech Branded Fertilizer, Specialty Products Division's highest award when he received "The Man of the Year" award at the Par Ex Annual Dinner in Phoenix during the 1987 GCSAA Convention.

Rayside, a native Floridian from West Palm Beach, received a B.S. degree in Agriculture from the University of Florida, and joined the fertilizer industry in 1978. He received the 1981 award for outstanding performance as an Agricultural Territory Manager from Swift Agricultural Chemicals, and then transferred to the Specialty Products Division, specializing in Par Ex® products as a Territory Manager in the southeastern Florida area.

Rayside is married to the former Martha Jane Duncan, and they have a beautiful baby daughter, Bethany Laurel.

The family enjoys most Florida sports, including Golf. ■



*Left to right: Mark G. Boulanger, President of Estech Branded Fertilizers, W.E. "Bill" Rayside, Par Ex® Territory Manager and I.B. Stacy, III, Director of Marketing, Specialty Products Division of Estech Branded Fertilizers.*

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# Palm Beach Trade Winds



By: Mike Bailey  
The Falls Country Club

## Herbigation

Imagine this. you notice the golf course is slowly dying. Every day, for the last few weeks, you observe more trees turning off color, leaves dropping, and the turf-grass is simply not as lush and green as everything used to be. No, it's not cooler weather coming on. No, it's not the lack of fertilizer. And no, the irrigation system has functioned properly every night. As a matter of fact, the entire maintenance program has not been altered to cause such a phenomenon. It's not your imagination. The entire crew is noticing it. Trees are dying and the turf looks terrible.

All of a sudden, you begin to panic. I think I'm in trouble, but I don't know how, when or why. First I ask my brother to come over (a fellow superintendent), who just might help to pull this one out. We both conclude that we're not sure what the problem might be. By next week, the crew begins pulling dead trees, while another bulk application of fertilizer fails to cause a response.

By now it's really affecting me, both mentally and physically. My boss accuses me of spraying that weed killer around the base of those dead trees. That, he says, is what is causing the problem. I know this is not the case. I have applied this herbicide for years and not killed a tree yet. However, to him, yes, one plus one equals two. (I really can't blame him because that's a pretty logical assumption.) After having the manufacturer's technical representative come by to assess the situation, chemical tests revealed no trace elements were found within the tissue analysis. This cleared one suspected liability that I personally never suspected; however, this did not cure the problem.

I then called the Forestry Department over for a visit. "It's the darndest thing. I've never seen anything quite like this one before" failed to make my day. Now, it's official — I need help! Maybe I'll become a car salesman and completely forget the golf industry.

Next, a well known and greatly respected turf consultant feels quite confident that this is a herbicidal problem. We agree, but fail to recognize the source. Two outside inde-

pendent laboratories begin leaf tissue analysis, soil tests, and even test for water quality. Tests continue to come in negative. I become even more frustrated. I feel as if I'm looking for a needle in a haystack. If there was ever a time to quote the adage, "Don't become blinded by the trees in the forest," it was now. By golly, down at the irrigation pumphouse a ficus hedge was turning off color and

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dying. (I thought a ficus was a plant that nobody could kill!) What struck me as being so peculiar was the location of this hedge — along a lakebank edge where water would periodically collect in the pumphouse and drain outside to the hedge. Those plants on the corners received no water and were exceptionally healthy, while those directly receiving the drain water were quickly dying. Now I am convinced there is a water quality problem within the lake system.

I contacted a few professionals that were foremost experts within the aquatic industry. They were quite familiar with the growth habit being displayed appearing as mutilated, distorted, curling of the leaves along with pale white streaks occurring in the leaves, totally destroying any photosynthesis. I was given a clue of perhaps six different herbicides to test. Elemental trace analysis testing is not cheap. Over \$60.00 per test and two weeks later — Bingo! A herbicide is detected at a trace quantity of .02 parts per million. I not only have never used this chemical, I've never even heard of the chemical. However, at this point, I feel greatly relieved. I'm finally off the hook. I have found something that is a strong clue to the heart of the problem. My next step should be legal advice.

Yes, the Environmental Protection Agency can be your friend. Upon a research investigation, the EPA acknowledged, "The rate of chemical found within the water in the lake will definitely kill trees and grass." To the dismay of several people, the superintendent and the mainte-

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nance department were clear and free of any wrong doing. That was the sole issue. The developer and I were not necessarily concerned about financial reimbursement, although \$40,000 worth of trees was lost. We were confident we knew where the misuse of application

## TO CURE THE PROBLEM WOULD BECOME EQUALLY AS DIFFICULT AS FINDING WHAT THE PROBLEM HAD BEEN.

occurred. However, the case is closed and let's pursue the upswing of the problem — getting the golf course back to normal.

To cure the problem would become equally as difficult as finding what the problem had been. What is the half life of the chemical? How can I get rid of it? Not only in the lakes, but in the trees and turf. Will it outgrow the problem? Will things ever get back to normal? For quite awhile I had serious doubts. A half life of 18 months! That's right, one and a half years later the chemical would have reduced its potency by only 50%. For the next year, many trees were pulled and hauled away, sodded over and, hopefully forgotten. Bulk applications of charcoal and excessive rates of fertilizer, both bulk and liquid, were applied at a rate much like growing in a new golf course to help overcome the herbicidal toxicity.

For over two years, I was irrigating via a means that I called "a herbigation system." (A sprinkler system incorporating a prescribed amount of herbicide being applied within the water source.) This phenomena greatly reduced the rate of photosynthesis within the chlorophyll tissue of both the turfgrass and trees.

There was an interesting comparison between the turfgrass and the trees. Considering the irrigation system was spoon feeding a prescribed amount of chemical by means of a foliar spray each night, the leaves of the trees accumulated enough chemical in due time to become toxic. A tree has no means of ridding the chemical accumulation. However, turfgrass, due to daily mowing, has an ability to rid some of its toxicity. This was the savior for the turf. The EPA acknowledged, "Bermudagrass can maintain upwards of 5 parts per million while this concentration will cause death in trees." I found this to be true. The Bermuda pulled through while only the heartiest of the trees survived.

Within two years, life was back to normal. Quite a few trees were replaced and those migraine days nearly forgotten. The point of this story has been to trust nobody, not even yourself. Assume everyone is guilty until proven innocent. There are many professionals within our industry — governmental, private laboratories, consultants, and even friends — who can help advise on such problems. It's amazing. Just when you think all there is to do today is just to mow the grass, you learn of a new word to add to your vocabulary — "Herbigation." ■

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# ALL EMPLOYERS MUST COMPLY WITH THE NEW LABOR LAW

By Chuck Woods

GAINESVILLE — Under a federal get-tough policy to curb the employment of illegal aliens in the United States, all employers face fines and possible prison terms for failure to comply with the new Immigration Reform and Control Act.

"The law isn't just for seasonal farm workers. Everyone who hires anyone — even for one day — is subject to this new law, beginning June 1, 1987," says Dr. Charles D. Covey of the University of Florida's Institute of Food and Agricultural Sciences (IFAS).

"The usual reaction of employers to the Immigration and Reform Act of 1986 is that it doesn't apply to me because I don't hire any aliens. But the fact is that every employer in the nation must comply with the law whether they hire aliens or not," Covey explains.

"Even if the employer personally knows for sure that the employee is an American citizen, that person's citizenship or right to work in the United States must be verified," he points out.

Penalties can range from \$250 to \$10,000 and even im-

prisonment for each instance of "knowingly hiring" an illegal alien, and \$100 to \$1,000 for paperwork failures, even in connection with the employment of a legal citizen in the United States, according to Covey.

The IFAS economist says the new law will mean additional paperwork for employers and he estimates there would be additional costs to the nation's businesses to comply with the law. On the other hand, he adds, it will help protect the jobs of legitimate American workers who are being displaced by illegal aliens, including those coming from Canada.

Specifically, the law makes it illegal for anyone to knowingly hire, recruit or refer for a fee an alien not authorized to work in the United States. It requires all employers to verify the legal status of every employee hired after November 6, 1986. Employees on the payroll prior to this date will be "grandfathered in" and will not have to document their legal work status.

"The law requires all employers to sign and retain an I-9 Form (issued by the U.S. Immigration and Naturalization Service) stating what documents have been examined. It also requires the employees to sign the same form certifying that they are legally eligible to work in this country. Both employer and employee must sign the I-9 form under penalty of perjury," Covey explains.

Acceptable documents include a U.S. passport, certificate of citizenship, certificate of naturalization, unexpired foreign passport with attached employment authorization or alien registration card with photograph. Also acceptable would be a valid state driver's license and original Social Security Card or birth certificate.

To protect themselves, employers should make copies of documents shown to prove citizenship or the right to work in this country. For example, a worker may provide a valid driver's license, birth certificate or Social Security card. Copies of these documents should be kept along with the form both parties signed.

During a 12-month period beginning June 1, 1987, citations without civil money penalties will be issued for the first offense. Citations and fines will be issued to employers for additional violations during this period. On June 1, 1988, the full provisions of the law will be in effect for all employers except those engaged in "seasonal agricultural services" who are exempt from civil money penalties until December 1, 1988.

"After December 1, 1988, employers will have to fill out the I-9 Form for all seasonal agricultural workers who are working in the field with perishable agricultural commodities. This gives farmers a little leeway in complying with the new law," Covey said. ■

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# WHAT PESTS COST FLORIDIANS

**and why biological pest control is a good investment opportunity**

By Darcy Meeker

GAINESVILLE — Insects, weeds, nematodes and plant diseases cost Floridians about \$250 per year per person.

The \$2.5 billion yearly tab for pest damage and pest control in Florida amounts to nearly two cents out of every dollar of personal income in the sunshine state.

It's an indirect cost of living that we all pay when we buy food, when we take our families to tourist parks, when we

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**OUR GREATEST HOPE FOR IMPROVING THE ECONOMICS OF AGRICULTURE IN THE NEAR FUTURE LIES IN DEVELOPING MORE BIOLOGICAL CONTROLS OF PESTS AND DISEASES.**

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play golf, when we buy gasoline for our cars . . . .

People use pesticides because they net an immediate economic return, estimated to be \$3 to \$5 per \$1 spent on the chemical agents and their distribution.

Biological control of pests — engineering an ecology favorable for the plants and animals we want to cultivate — is an attractive addition to the pest control arsenal. Per \$1 invested, biocontrol returns an estimated \$26 in benefits over five years, \$30 over ten. Equally attractive is the fact that the solutions are often permanent, often self-distributing, and frequently one-time costs.

Says Dr. K.R. Tefertiller, head of the statewide Institute of Food and Agricultural Sciences (IFAS): "Our greatest hope for improving the economics of agriculture in the near future lies in developing more biological controls of pests and diseases."

Consider what we spend now.

**INSECTS:** Damage and control cost Floridians \$1.3 billion a year. Figures from the Entomological Society of America break it down:

- \$386 million, termites;
- \$230 million, cockroaches;
- \$ 85 million, citrus rust mite;
- \$ 64 million, hornfly (a pest to cattle);
- \$ 57 million, mosquitoes;
- \$ 50 million, ornamental scale;
- \$ 45 million, fleas;
- \$ 37 million, mole crickets;
- and many other millions on other pests as well.

**PLANT DISEASES:** Annual crop loss to Florida's assorted rots, wilts, blights, rusts, mosaics, spots and smuts is about \$450 million and control costs about \$210 million, totalling \$660 million. Crops hardest hit include citrus, sugarcane, and vegetables.

**WEEDS:** Damage and control cost Floridians \$360 million, depending on cost of gasoline and herbicides. The top enemies: Hydrilla is number one and others in the top five are smutgrass, a pest on pastures, golf courses and lawns; sickle pod, a tall bean that makes harvesting difficult in row crops; and melaleuca (punk tree) and Brazilian pepper tree.

**NEMATODES:** IFAS Extension nematologist Bob Dunn says these microscopic worms cost Florida:

- \$63.9 million, in the citrus industry;
- \$ 6.7 million, potatoes, in the Hastings area alone;
- \$ 5.1 million, golf turf;
- \$ 4.4 million, soybeans;
- \$ 1.2 million, tobacco.

Those costs take us up to the \$90 million mark for nematodes, but it's hard to say how much the soil-borne pests cost us over all. Nematodes are fought with soil fumi-

*(continued on page 27)*

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*"Keeping Golf Courses Green"*

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gants which also combat fungi and several other enemies at the same time.

Pests also contributed to cost we all pay with our money and our concern: \$3.1 million already appropriated by Florida legislators to clean up wells known to be contaminated by EDB, which had been the main nematicide.

Some costs of pest control are hidden. For example, while our soil fumigation has been killing off the root-knot and sting and other enemy nematodes, we have also been killing off their enemies: fungi, other nematodes and bacteria. Likewise the use of pesticides in our citrus groves and tomato fields and landscapes. Possibly even in our homes. While fighting pests, we have sometimes made our pest problems worse.

However, with the addition of biological pest control to our pest control tool kit, we can seize the opportunity to rebuild the invisible ecology of living soil according to our desires, to structure the ecology of our landscape, to re-engineer the setting of our lives and of our food production — so long as we play by nature's rules. ■

## NEMATODE NEMESIS

The nematode may be brought to heel by an extract of crab shells.

Nematodes are tiny parasitic worms that dwell in the soil and cause an estimated \$3 billion of damage a year to

crops and gardens. Unlike other soil microbes, the nematode larvae contain a complex sugar called chiten, explains Robert Milch, the president of Igene Biotechnology Inc. in Columbia, Md. If extraneous chiten is mixed in the soil, it will trigger other soil microbes to produce an enzyme that destroys it. Thus, mixing chiten with soil sets off a kind of chemical warfare that destroys nematode larvae.

## THE PROTEIN SPURS THE GROWTH OF FUNGI AND OTHER MICROBES THOUGHT TO ATTACK ADULT NEMATODES.

Crab, oyster and clam shells are rich in chiten and Igene has found an inexpensive way to extract it, Dr. Milch says. After extracting residual meat from crab-shell wastes to produce a flavoring compound, Igene dissolves away the calcium with an acid. This leaves a chiten-and-protein mix that Igene has turned into a product it calls ClandoSan. The protein spurs the growth of fungi and other microbes thought to attack adult nematodes.

Igene plans to market ClandoSan later this year, after tests of its effectiveness are completed at Auburn University in Alabama and Hebrew University in Israel. Since chiten is a natural pesticide, formal federal approval may not be needed for ClandoSan, Mr. Milch says. Igene notes that most synthetic chemicals formerly used against nematodes have been banned because of environmental problems. ■



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# Why Play Golf?

By John Boardman,  
Keene Country Club, Keene, New Hampshire

To many people, we as superintendents, are in a very enviable position. We have free access to play at our own course and other courses which may not be accessible to the general public at any price. This is a benefit that many of us take for granted.

Playing golf is more than a fringe benefit for us. It plays an important part in our development in becoming better superintendents.

Maintaining a golf course provides an endless list of tasks that can be accomplished on a daily basis. We establish a set of priorities as to which tasks are most important to undertake. Often, we establish our priorities without fully considering those of the golfers. If we do consider them, we may not see their priorities as being important enough to take precedence over our own. This attitude can develop because we don't play enough golf to appreciate their positions. If we get out and play the game, we may find that certain practices are a little unfair and we should try to change them, or there may be areas on the course that deserve more attention. This will help develop a much better relationship with the people we work for.

Playing golf is a great way for us to take a slow, detailed look at our courses. Often, work routines take us around

the course via the quickest route. Or maybe we don't allow driving on the fairways so we stay off them too. Playing the course gives us a good look at each hole from tee to green.

Golfing is a great way to get to know someone. Any of us who have played with newcomers at our monthly meetings can attest to this. After one round of golf, you get the feeling that you know these people pretty well.

Golf is a great public relations tool to use with your membership, especially Board members. This is why our Superintendent Club Official Tournament is so valuable. We get to know our officials on a personal level and, more importantly, they get to know us on a level other than an employee who works on the course. Their opinions of us, as individuals, and, as a group, are elevated.

Playing with the Pro can be helpful to us. Few people communicate with the membership as much as the Pro does. Playing with the Pro is a great way to educate him about what's happening on the course, which, in turn, helps to educate the members.

An effective tool in motivating our own employees is to have them play golf also. If they can see the course from a perspective other than from a tractor, they can appreciate the course more and have a much better sense of purpose on their jobs.

While we have to be careful not to become overly involved in playing golf, we must keep in mind that it plays an important part in our professional growth and we should play as often as we can. ■

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