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The Official Bulletin of the Florida Golf Course Superintendents Association
 Florida Green Phone: Days — (305) 793-2497 or (813) 544-0807

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ALL ABOUT OUR COVER

Seventh Hole At The Picturesque Palm Beach Par 3 Golf Course. (see page 20).



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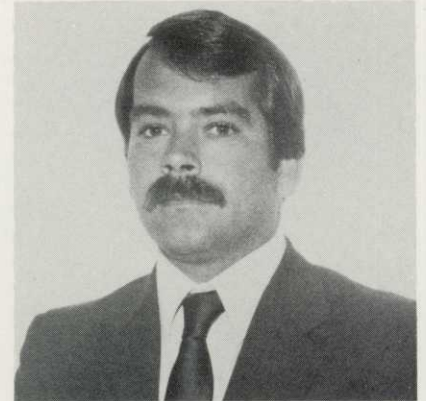
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President's Message

The GCSAA Executive Committee recently approved the new certification long-range plan. The plan is an extensive document which required a tremendous amount of time to prepare. The certification program of GCSAA in the past has been a very controversial topic. The main comments have been that the examination process (open book) was too easy and the value once obtained meant nothing.

The success of any professional educational program rests on the attitude of those in that profession. It is obvious the attitude in the past was negative.

The new program adopted will mean something. Although some of the programs and requirements seem almost unreachable presently, I think they are necessary for us to progress in the future. The program is not cast in concrete in its present form. There will be changes for sure; but it is a start. The program needs our acceptance in form and attitude to be different.

The 1984 FT - GA Conference and show will be held in Tampa on September 30 thru October 3. The Golf Turf Educational Program should be the best yet. One of the highlights of the conference will be up to date reports on the progress of I.F.A.S. turfgrass research.

Congratulations to the newly elected officers of our nine chapters. Please continue to communicate any assistance your chapter needs to your Florida Golf Course Superintendent Representative.■

Don DeLaney

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Not Too Much Pepper, Thank You

By Keith Barrons

For dinner last evening my wife and I had sauteed shrimp with mushrooms. In addition to the arsenic that came with the shellfish, the mushrooms provided us with hydrazine, the baked potato with solanine and the celery with furocoumarin. All three compounds are carcinogenic.

The carrots in our mixed vegetables contained carotene, which converts to Vitamin A in the body. This vitamin, essential in the amounts we ordinarily ingest, is a teratogen and harmful to the liver at highly excessive levels. The alfalfa-sprout topping on our salad contained canavanine, which is associated with defects in the immune system. The black pepper carried the mutagen safrole. Chocolate cake provided theobromine, which can activate various carcinogens, and in addition to caffeine, the coffee contained about 250 milligrams per cup of the mutagen chlorogenic acid.

The world around us abounds in nature's toxic substances, and our food is no exception. The scientific literature lists many natural components of food that are known to be harmful to laboratory animals, but only at dietary levels considerably in excess of likely human intake.

Nonetheless, many Americans have succumbed to a new fear — and one that could in the long run lead to an ever-lowering quality of life. I refer to the current epidemic of 'microchemophobia,' or the fear of minute traces of chemicals. *Grains and Nuts*: In defining a poison, my old biochemistry teacher told his classes, "a poison is too much." Yet my wife and I have not consumed too much of nature's chemical oddities. How, pray tell, have we each passed three score and ten while indigesting a myriad of natural toxins, including a flatoxin, an exceedingly potent carcinogen sometimes found in grains and nuts as well as nitrosamines formed in the curing of meats? The answer: our natural defense mechanisms. Were it not for these remarkable biochemical systems we would long since have succumbed.

In tests with laboratory animals some of nature's toxic substances have proven more poisonous than any man-made chemicals, and their concentrations in food are generally much greater than the synthetic impurities that have generated so much fear. In a notable paper in *Science*, Dr. Bruce N. Ames, Chairman, Biochemistry Department, University of California, Berkeley, concludes that our intake of natural toxins is "...probably at least 10,000 times higher than the dietary intake of man-made pesticides."

If our built-in defense mechanisms can handle relatively large amounts of toxic chemicals that happen to be synthesized by the most accomplished chemist of all, a living plant, there is every reason to believe we can cope with

the far lesser amounts of man-made compounds, traces of which occasionally find their way into our food. Our fears should be quelled by the fact of our ever-increasing longevity — now more than 74 years compared with 50 years or less before chemicals were used to help assure an abundance of food.

Microchemophobia has multiple origins. There is the anti-chemicals "lobby" that nurtures and magnifies each report of a real or speculative risk. Parts per billion are often equated with an imminent hazard regardless of the magnitude required to harm laboratory animals. There is never a reminder of the minuscule nature of one part per billion.

A recent example of an overblown pesticide episode contributing to microchemophobia was the flap over EDB residues in grain. Today's knowledge of the carcinogenicity of this compound may well support the cessation of its use as an insecticide. Some food samples analyzed exceeded current safety guidelines, but the destruction of foodstuffs because they contained lesser amounts was uncalled for. With few exceptions, the contaminated samples had less than one thousandth the level of EDB that was found to cause cancer in rats. Add to this margin of safety the fact that grain-derived foods are only a portion of the human diet, and further, that much of any EDB present would be reduced on cooking for baking, and the risk fades into insignificance.

Also contributing to the fear of minute traces of chemicals is an overly cautious interpretation of the so-called Delaney Clause in the law dealing with safety of foods. It states that no substance will be permitted in food. "...If it is found after tests which are appropriate for the evaluation of the safety of food additives, to induce cancer in man or animals..." Note the word *appropriate*. Is it not appropriate to consider safety margins or the spread between likely human exposure and the amount required to induce cancer in the laboratory when analysts interpret toxicological data?

Potato Blight: if we are to avoid pest-induced food shortages and vector-transmitted diseases, manking must defend itself by one means or another. In spite of much progress with nonchemical controls, pesticides are still vital to most integrated pest-management programs and, indeed, are often our first line of defense. For example: we can control potato late-blight, the same disease that caused the great Irish potato famine of the 1840's.

We will continue to ingest nature's toxins, including, no doubt, many yet to be discovered in our everyday foods. But if we are to continue to have the abundance we have

(Continued on page 12)