Palm Beach Trade Winds

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

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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 acccumulated 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 migrane 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." ■