



## CHEMICALS: Friends AND Enemies of Healthy Turf

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We've all seen copies of the Stop Sale and Recall notice for benomyl-containing products, e.g., Benlate and Tersan 1991. Reason for this is because the products may contain atrazine herbicide.

When suspicions of product adulteration exist, it's critical that they be removed as soon as possible. It was the right thing for DuPont to do so, if there's any hint of possible problem. Damage to people's health is not an issue in this instance, but damage to plant health certainly is!

This situation brings to mind altogether too many experiences over the last few years when contaminated products have caused serious turf troubles. There's the situation three years ago when chloroneb was tainted. Superintendents facing Pythium problems who went to chloroneb for protection or rescue encountered far greater problems than the fungus could have created. Two years ago it was PCNB's turn to be contaminated, this time in lawn care formulations with fertilizer. And a year ago we encountered yet another problem with a fertilizer-herbicide contamination on a sod farm in the state.

In each of these instances there was considerable economic loss involved. Greens had to be replaced, lawns had to be redone, and sod fields could not be harvested. And in many instances, professional reputations were devastated, and customer confidence was lost. I don't know how you measure that kind of loss!

It's not just herbicides that get involved. This winter the diagnostic laboratory encountered a puzzling floriculture problem. After several false starts at diagnosis, it was determined that the fertilizer contained boron. But how could that be a problem? Don't plants require boron, and isn't it added as an element to certain fertilizers, such as for alfalfa? It is, but many crops are sensitive to it.

There are also those occasional

situations where contamination is deliberate. For instance, last year some indescribable persons poured engine oil into a golf green's pop-up sprinkler heads!

While the latter is a case of vandalism, most of the problems of this sort are a result of accident, and the user becomes an innocent victim of circumstance. It is absolutely necessary that our suppliers take every possible measure they can to avoid even the remote possibility of such happenings in the future. I'm not convinced that the extra measure of precaution is being taken, as evidenced by what appears to be an increasing number of such incidents. From what limited background information I've been able to gather, most of these problems occur at the formulating and mixing centers.

Most mixers are used for many formulations and products. The industry ought to be asking themselves some serious questions about certain prac-

tices, such as the use of the same mixers for atrazine and products that are intended to help with plant health! (I pick on atrazine because it has been the repeat culprit in so many instances, but the rule should apply to similar products as well.) To growers of sensitive crops such as ornamentals and vegetables, we have always admonished the use of separate sprayers for phenoxy-containing herbicides and fungicides. It costs more money—but the risk is too great to do otherwise. Conversations with industry members who've encountered the problem say "No more! We'll take the necessary precautions next time!" How about now being the next time?

There's no way we can protect ourselves when faulty products are provided. But we need to be very mindful of all times of the possibility, I believe. One approach may be to keep some of the product batch on hand for future reference if needed, until we are assured by our use experience that it is ok. That, of course, is a hassle, and is only useful if the situation warrants our suspicion. In the case of the white grass following PCNB treatment, that was so, but with bentgrass, Pythium and atrazine, it's more difficult. In other words, diagnosing these kinds of "diseases" is extremely difficult. What chemical do you test for? And how do you do it? But we have to keep it in mind. If you are suspicious, check around. Call your distributor right away, and check with colleagues who may be using the product for their experiences. And by the way, one of the biggest problems with diagnosis is the distribution pattern. If the entire product is contaminated, diagnosis is a lot easier than when the contaminant is randomly distributed within the bag. That's the most common pattern!

There remain several instances over the past few years where I have suspected some type of errant chemical response. Patterns didn't fit disease development, symptoms didn't match up with any known cause, and no pathogens or suspect organisms could be detected. We admonish ourselves to select the right chemical to deal with a problem, and to use it carefully to avoid phytotoxicity or other complications. We need a similar pledge from industry—so that our chemical arsenal remains a friend of healthy turf—and not its enemy!

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