



ENVIRONMENTAL SENSITIVITY: The Legacy of *Silent Spring*

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A little over 31 years ago, on the day I was born, Rachel Carson, a wildlife biologist for the U.S. Fish and Wildlife Service, sensitized us to environmental quality. She removed the innocence and ignorance of the use of synthetic chemicals (biocides, as she refers to them) for pest control. Her book *Silent Spring* was published and served as a wake-up call to many who had utilized these materials and to those who had been exposed to them. Immediately, the dark side of chemical technology was the subject of debate.

The major theme of the book is the impact of widespread chemical usage on the environment, wildlife and humans. She warned, "indiscriminate use of chemical biocides would silence the voices of spring in countless towns in America." Hence, the book title—*Silent Spring*.

Corporations that manufacture chemicals were actively denouncing the book before it was published. One company tried to block publication of *Silent Spring*, describing Rachel Carson as, "as an ignorant and hysterical woman who wanted to turn the earth over to the insects." A leading (male) scientist questioned her right to worry about future generations, pointing out that, "she is a spinster who has no children". Thankfully, that kind of talk is no longer acceptable!

To be fair, I must say Rachel Carson did take her shots at the chemical companies. In the final pages she writes, "this is an era dominated by industry, in which the right to make money, at whatever cost to others, is seldom challenged," and she added, "we shall have no relief from this poisoning of the environment until our officials have the courage and integrity to declare that the public welfare is more important than dollars, and to enforce this point of view in the face of all pressures and all protests, even from the public itself." It was clear Rachel Carson touched a raw nerve. Yet, the question remains; was she a doomsayer, creating unwarranted fear, or a prophet, forewarning us of our destiny?

Reading the book and thinking about the environmental issues facing the turfgrass industry make me wonder if the answer isn't somewhere in between. For instance, much of what has been written about *Silent Spring* over the years relates to the increasing awareness of chemical usage and the exponential growth of environmental legislation. Yet, reading her book closely, and having seen some old interviews with her, it was not so much that she wanted all biocides banned. Rather, she demanded our awareness of the risks when using biocides and environmental responsibility.

Risk assessment and risk/benefit analysis are the modern-day methods for determining the usage (or lack of use) of chemical pesticides. We try as best we can to determine the potential harmfulness of a chemical and balance this data with the potential benefit to society. As you might imagine this is an inexact science at best! And no matter how much we talk about the benefits of turf and the benefits of pesticide use, the availability of pesticides in the future will decrease.

Whether or not you agree with this or if you think it is chasing the phantom risks of pesticides—face it! Public perception continues to respond by saying, "synthetic chemicals are polluting the environment and killing the people." This perception is fueled by increased awareness, poor understanding of scientific principles (e.g. parts per billion), spectacular environmental accidents and our inability to communicate effectively.

Science and industry does not seem able to help. Studies have been conducted at great expense to demonstrate that chemical use on golf courses poses little risk to the environment. Many turfgrass managers are very defensive when questioned about pesticide use. In fact, I've seen several instances where the response was similar to the outcry in 1962 to *Silent Spring*.

Environmental sensitivity is an issue that faces the entire

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golf turf community. I feel sometimes that the superintendents have been singled out as the problem as evidenced by the *Club Manager's Magazine* article (July/August 1993) with the grim-reaper and greenskeeper in a drum. Golf architects, builders, club professionals, golfers, pesticide dealers, and yes even club managers need to be involved. Everyone must understand that high expectations of course conditions currently cannot be met without the use of pesticides.

Still, this is not a license to be a "calendar sprayer" without considering levels of pest pressure. Also, intensive chemical use is often referred to as "job security". I believe this is short-term thinking and as Jim Moore, Mid-Continent Director of the USGA Green Section reminds us, "there are good turf managers and good chemical managers; chemical managers will not survive as less pesticides are available." And he adds, "Don't blame your demise on television golf, the USGA and the Stimpmeter."

I believe the debate about the environment should be robust. Open communication is needed between interested and concerned parties, even the Jay Feldmans (National Coalition Against the Misuse of Pesticides) of the world. We must all face the fact that we may not really know the long-term issues of pesticide use, although many of us posture ourselves as being confident. As a scientist who has access to good information, a turf professional aware of IPM, a citizen concerned about the lakes, and a parent—I'm still not sure. I believe we must be vigilant in our pursuit of knowledge. Be able to honestly discuss golfers' expectations and how our management practices are designed to attain them.

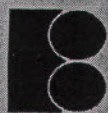
Rachel Carson discussed the dangers of the chemical DDT, a commonly used insecticide. She said, "chemical residues can be even be found in mother's milk." DDT was

banned in 1972 after it was shown to cause cancer in test animals (8 years after Rachel Carson died). Many people felt this was overreacting. Interestingly, under today's risk:benefit analysis, some would say it may not have been banned. It helped stop the spread of insect vectored diseases, such as yellow fever and malaria.

In the Spring of 1993, the National Cancer Institute published a study showing that women with the highest exposure to DDT, have a four times greater risk of developing breast cancer as that of women with the least exposure. Many have attacked the weaknesses of epidemiological studies. Still, health officials have pointed out that these findings may help our understanding of why breast cancer afflicts 1 out of 8 or 9 women in our society.

Our most commonly used materials have been shown to be less environmentally persistent than DDT. Many of our new pesticides are designed differently than DDT and have passed through a more restrictive regulatory system. But, older materials currently up for reregistration may not be available in the next 5 to 10 years. Could you manage your course without chlorothalonil?

I strongly believe that our environmental sensitivity will result in a better golf turf industry. The challenges we face in our jobs mirror the issues we face as a society. The result of increased awareness can be balanced when the community maintains an open dialogue. Often this may result in what we feel is unjust regulation. Yet, we must remain open-minded in our dealings with persons who challenge us. Acknowledge their concerns, discuss your philosophy and concerns. We all want the same thing!! Let's develop long-term solutions to environmental issues and make those solutions the legacy of *Silent Spring*. 🌱



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