

# THE PESTICIDE CONTROVERSY—CRISIS OR OPPORTUNITY?

by Roger C. Funk

**Abstract.** The public is becoming increasingly concerned about the use of pesticides in the urban environment. Our industry is partially responsible for these concerns due to our high visibility in residential areas, our over-reliance on pesticides, and our failure to respond to misconceptions involving pesticides. The news media have contributed by reporting only "newsworthy" items that sensationalize and distort the risk of pesticide exposure. Although the pesticide controversy has resulted in increased complaints and cancellations, it also has helped focus attention on our industry and the value of trees in the environment. The planting and preservation of trees has practically become a national pastime. The Chinese spell "crisis" by combining the symbol for "danger" with the symbol for "opportunity." There has never been a better opportunity for quality-conscious companies to respond to the changing needs of a growing market. Controversy almost always results in change—and with change comes opportunity.

"Better Things for Better Living Through Chemistry," the slogan for a major chemical company from the 1940's through the 1960's epitomized public attitude of that era and the optimism for the future. Today, the term "chemophobia" has been coined in response to the growing number of Americans who fear chemicals and their effect on human health and the environment.

Although everything in nature is composed of chemicals, people are beginning to associate chemicals with hazardous events. Media reports on Love Canal, New York; Times Beach, Missouri, Three Mile Island, Pennsylvania; and Bhopal, India leave lasting impressions, particularly when televised into homes throughout the United States. Isolated and unrelated events become "localized," distorting the magnitude of risks and magnifying individual concerns.

Chemicals registered as pesticides are thought to be particularly toxic or hazardous, perhaps because of the name itself. "Cide" means to kill. The word "pesticide" literally means to kill a pest. Unfortunately, this has led some government of-

ficials and anti-pesticide activists to make statements such as: "Pesticides are designed to kill living organisms and therefore will harm all living organisms," and "Every pesticide is a poison."

While these statements may be well intentioned, they actually mislead the public by implying that chemicals registered as pesticides are inherently more toxic than those which are not pesticides. This could cause individuals to focus on pesticide risks while ignoring other potentially more hazardous risks in the home. In fact, many common chemicals, both natural and synthetic, are more toxic than landscape pesticides and have known adverse health and environmental effects. Some, such as alcohol and gasoline, are highly effective as pesticides but are not registered for landscape use since they would also kill the desirable plants.

In many cases, the health risk from pesticides is slight compared to the health risk from the problem being controlled. This is certainly true with antibiotics which are pesticides designed to kill living disease-causing organisms that invade the human body. Two antibiotics, streptomycin and tetracycline, are also registered as landscape pesticides.

In her book, *Poisons of the Past*, historian Mary Kilbourne Matossian credits pesticides with curing many of the ills which plagued society during the Middle Ages. Aflatoxin, a natural poison produced by a fungus growing on stored grain, is deadly when ingested in minute quantities. In sub-lethal doses, it produces a wide range of health disorders including low fertility and the bizarre behavior that led to the Salem witch hunts. We're fortunate today that stored grain is treated with pesticides!

Although pesticides can, of course, be hazardous when misapplied or abused, there is no scientific evidence that pesticides registered for tree

care cause long term health problems in humans when used according to the label.

Another misconception concerning pesticides is the often-stated belief that commercial applicators are responsible for the majority of pesticides used in the urban environment. On the contrary, the Connecticut Agricultural Experiment Station reported that, excluding structural pesticides, homeowners use about 61% of pesticides, and that commercial applications, along with industrial and governmental uses, amounted to only 6% of the total pesticides used. Another survey reported in 1991 by the Professional Lawn Care Association of America gave similar results. In this national survey, 85% of homeowners who treated their lawns did the work themselves; only 15% hired a professional. Homeowners—not commercial applicators—apply the majority of the pesticides, and additional legislation to control the activities of the professional will have little impact in regulating the use and disposal of urban pesticides. Additional regulations are likely, however, since the recent Supreme Court ruling that the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) does not preempt local governments from regulating the use of pesticides. Since there are over 88,000 political subdivisions across the United States, this could result in a bewildering array of compliance requirements for companies that service multiple communities. A number of cities have already drafted legislation, and one city in Ohio suspended commercial pesticide applications while proposed legislation is under review.

In spite of the potential chaos, I have never been more optimistic about the future of the tree care industry and the role of pest management.

The environmental movement is focusing attention on our industry, increasing public awareness of the value of trees, and expanding the market for quality-conscious companies. Tree care advocates include the President of the United States, government officials, celebrities, businesses, schools and consumer, civic and environmental groups. Even those consumers who voice their concerns about pesticides are "unpaid marketing consultants" who indicate future trends and attitudes in arboriculture.

No industry remains the same in the face of changing public attitudes and government regula-

tions. For example, the automobile industry underwent significant changes in the early 1970's. Fuel shortages, environmental concerns and growing consumer activism created a demand for smaller, more fuel efficient cars of higher quality. The American automotive industry was slow to react and has yet to recover from the loss of consumer loyalty and trust when customer expectations were met instead by Japanese manufacturers. Similarly, public attitude and government regulations are changing the market for the tree care industry. Our customers still want pest management but with less risk of personal or environmental exposure to pesticides.

Success in any business is defined as finding out what the customer wants and then providing that service. The Davey Company surveyed customers in the mid-1980's and found that the majority of customers were concerned about pesticides, even when applied by professionals such as Davey. In a more recent survey of consumer attitude, the Roper Organization reported in 1990 that 68% of Americans favored banning the toxic ingredients in pesticides.

Regardless of our personal opinion of the risks involved in using pesticides, the perception of risk is increasing. These concerns can become a problem, however, only if we fail to respond to changing attitudes. Fortunately, our industry has already made significant reductions in the use of traditional pesticides and we are researching further changes in materials and methods of control. The Davey Company reported a 75% reduction in 1988 by adding insecticidal soap to reduced amounts of traditional pesticides and by increasing the use of horticultural oil.

Alternative materials such as soap and horticultural oil are effective against soft-bodied, sucking insects. Formulations of BT are available for gypsy moth and elm leaf beetle larvae although timing is more critical than with traditional pesticides. Further research is expected to improve these formulations as well as introduce other environmentally-acceptable materials.

The major insect groups for which we do not yet have effective alternative materials are borers, leaf miners and beetles. Until alternatives are available, however, we can significantly reduce pesticide use

by selectively spraying and by using only sufficient pressure and spray volume to provide adequate coverage of the target plant. Under actual field conditions, we have measured volume reductions of up to 70% when proper spray techniques are followed.

In summary, our clients continue to want pest management for their landscape plants but with less risk of pesticide exposure. Our industry has responded by researching and incorporating more environmentally sensitive materials in our treatments and by decreasing the number of treatments through monitoring and selective applications. Continued research in alternative materials and improved application techniques to reduce odor and drift will further reduce client concerns while maintaining and improving the quality of our service.

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**Résumé.** Le public est devenu de plus en plus inquiet au sujet de l'emploi de pesticides dans l'environnement urbain. Notre industrie est partiellement responsable de cette inquiétude en raison de notre grande visibilité dans les secteurs résidentiels, notre trop grande confiance dans les pesticides et notre échec à répondre aux fausses conceptions entourant les pesticides. Les médias d'information y ont contribué en diffusant seulement les points «journalistiques chocs» qui créent un sensationnalisme et une distorsion du risque à l'exposition aux pesticides.

**Zusammenfassung.** Die Öffentlichkeit ist gegenüber dem Einsatz von Pestiziden im städtischen Bereich zunehmend besorgt. Unsere Industrie ist hierfür teilweise mitverantwortlich, aufgrund ihres Vertrauens zu Pestiziden und ihrer fehlenden Reaktion auf Mißverständnisse im Zusammenhang mit Pestiziden. Die Medien haben dazu beigetragen durch Reportagen mit sensationsreichen Einzelheiten, die die Risiken der Pestizidanwendung verzerrt erscheinen lassen.