

## THE LAWN CARE INDUSTRY AND PUBLIC AWARENESS

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Rapid growth and development of the lawn-care industry has been accompanied by increasing pressure from various environmental groups and individuals to modify the methods employed by lawn-care firms in conducting their operations. Legislation has been introduced at municipal, county, and state levels that would require posting of signs, or written notification to adjacent residences, in conjunction with each agrichemical (fertilizer, pesticide) application. In Michigan, Senate Bill 730 was introduced in 1984 requiring, if passed, written notification to all residences within 24 hours prior to the application of agrichemicals by lawn-care operators. The bill was authored by State Senator Richard Fessler of West Bloomfield Hills, Michigan, and presented to the Forestry and Agriculture Committee for consideration. A public hearing on this and other proposed legislation was held on November 14, 1984, with Nick Smith (Chairman) and Harvey Cropsy of the Forestry and Agriculture (F&A) Committee in attendance. The hearing was well attended with numerous proponents and opponents of the bill participating. Only proponents testified, however, as opponents collectively decided to submit their positions in writing to the committee. Participants in favor of the bill who testified included Senator Fessler (author of SB 730), Dr. Paula Davies (Clinical Ecologist from Ann Arbor), Mr. Edward Parker (Attorney from Flint), Mr. Edward Pfiffer (Environmentalist from Ann Arbor), and several of Dr. Davies' patients. The arguments presented in favor of the bill primarily dealt with the issue of petrochemical sensitivity, and the presumed effect of lawn chemicals on sensitive residents living in the vicinity of treated lawns. Senator Fessler stated that he was acting on behalf of numerous constituents claiming to be adversely affected by materials applied by lawn-care firms. His position was that something had to be done to protect petrochemical-sensitive people wherever and whenever lawn-spraying operations were conducted, and that his bill was simply one alternative for effectively dealing with the problem.

Mr. Parker related his experiences in attempting to obtain cooperation from various lawn-care firms in providing prior notification of lawn applications in the vicinity of his residence as his wife suffered from various allergies exacerbated by lawn chemicals.

Dr. Davies presented an intriguing array of arguments against pesticides that were reminiscent of Rachel Carson's "Silent Spring." She claimed that, in sensitive patients, recurrent flu, shortness of breath, memory loss, and other maladies are direct results of pesticide exposure. She further stated that sensitivity to pesticides could result from a single large exposure, or from multiple, small exposures. Finally, she claimed that, with at least 20,000 new cases being reported each year, the number of pesticide-sensitive people in the United States was increasing rapidly.

Mr. Pfiffer stated that the number of new cases of pesticide sensitivity was actually 45,000 each year. He explained his "tip of the iceberg" theory: the number of people suffering from pesticide exposure was actually much greater than the figures previously cited, but most cases are undetected as illness resulting from pesticides is often (mistakenly) attributed to other causes.

Others testifying in favor of SB 730 related their personal experiences and suffering that they attributed to pesticide exposure.

Opponents of SB 730 included representatives of lawn-care firms and various professional associations in Michigan. They presented their positions in writing while opting not to testify before the F&A Committee. The principal arguments presented in their position papers dealt with the adverse economic impact of the bill, and the relative safety of professionally applied pesticides over application by homeowners of the same materials readily available at garden centers and other retail outlets. The position papers further emphasized that all pesticides used by the lawn-care industry were adequately tested and regulated by federal and state agencies.

Upon completion of the formal hearing, several informal discussions took place, especially among the lawn-care professionals in attendance. They resolved to form a study group to begin a thorough investigation of the problem. This resulted in a meeting on November 30, 1984, at the Hancock Turfgrass Research Center, of 24 people representing lawn-care firms, MSU Colleges of Agriculture and Medicine, chemical manufacturers, Michigan Departments of Public Health and Agriculture, and several professional associations. The meeting was chaired by the author, and included presentations by six of the participants as well as discussions following each presentation.

The first speaker was Mr. Art Bloomer of the Michigan Department of Public Health. While acknowledging that a small portion of the population is hypersensitive to petrochemicals, most reported cases are anecdotal and seriously lacking objective data for scientific analysis. Allergists and practitioners of "Environmental Medicine" differ in their opinions regarding the specific causal agents involved in petrochemical-related allergies. Considerable research is needed to adequately address this problem.

The next speaker, Dr. Donald Kaufman, Immunologist at the MSU College of Medicine, stated that petrochemicals are non-allergenic substances, and that most of the data cited by "environmentalists" are from studies which were not well designed scientific experiments. Furthermore, emotional and psychological responses to petrochemicals may enhance the allergic-type reaction thus magnifying any true sensitivity that might exist. To explain the kind of conditioned response that can occur in petrochemical-sensitive patients, he cited a classical experiment conducted with dogs. First, the animals were injected with bovine serum albumin, a chemical agent that induces a dramatic but short-lived allergic response. Then, the injections were accompanied by exposure to a chemical with a strong odor. Finally, the animals were subjected to the odor without an injection. In the third phase of the experiment (i.e., odor only, no injection), the animals reacted with the same allergic response as from the injection. The reaction was a condi-

tioned response learned from previous experience. This phenomenon suggests that, for petrochemical-sensitive people, the sight of a lawn tanker truck may be sufficient to induce a painful reaction even though no chemicals are being sprayed.

Dr. Kaufman's remarks provided important insight into the problem of petrochemical sensitivity. First, the problem is difficult to diagnose due to the lack of scientific data and reliable techniques for accurately assessing the real cause of the problem. Second, it is difficult to distinguish between physiologically and psychologically based phenomena.

Dr. Kaufman believes, however, that the problem is largely psychological in nature, and that psychological counselling is an important part of the treatment of petrochemical-sensitive patients.

Dr. Mike Kamrin, Environmental Toxicologist with the MSU College of Medicine, was the next speaker. He equated petrochemical sensitivity with "germ phobia" in the early 1900s. He emphasized that all chemicals may be toxic at a particular dose under some conditions, but that the perception of toxicity with respect to lawn pesticides is far greater than the real hazards associated with the use of these materials. Clearly, a major educational program is needed to correct the misperceptions of the general public regarding pesticides and their use by the lawn-care industry. With over 11,000 newspapers and 100 radio stations in Michigan, significant opportunities exist to address these issues. Dr. Kamrin stated that the MSU Center for Environmental Toxicology is willing to assist with research and Extension educational programs.

Dr. Emery Conyers, representing Dow Chemical Company, reported that about 200 bills are introduced each year in various legislative bodies to limit pesticide usage. He emphasized the need to "keep our houses in order" by developing and implementing industry guidelines, adequately training personnel, promoting a positive image, and continually working toward improving the industry. He suggested inviting members of the legislature to visit branch facilities and to observe application procedures. He also recommended that a validated registry be developed to identify petrochemical-sensitive people in areas of operation.

Dr. Fred Tschirley, MSU Professor of Botany and Plant Pathology, suggested that the petrochemical-sensitivity issue is indicative of "chemophobia" in segments of our society. It is largely due to a small group of environmental activists who are working vigorously to keep this and other issues alive at local, state, and federal levels. Over 5000 environmental groups are active in the United States; half of them were established since 1969. He stated that our primary strategy should be to educate the general public and the news media regarding pesticide safety.

Mr. Bob Mesecher of the Michigan Department of Agriculture emphasized the importance of training applicator personnel in the proper use of pesticides. Specifically, they should know what chemicals are being applied, what they do, and who should be called in case of a problem. He stated that SB 730 would be impossible to enforce as originally proposed; however alternatives should be offered to effectively deal with the problems addressed in the bill.

Following a general discussion of the issues presented at the meeting the group decided to:

1. Develop a summary of the information covered at the meeting.
2. Form a "Task Force" to develop a strategy for effectively dealing with the issue of petrochemical sensitivity.
3. Initiate an educational program for presentation to members of the industry.