

STATEMENT OF
JAY FELDMAN, EXECUTIVE DIRECTOR
NATIONAL COALITION AGAINST THE MISUSE OF PESTICIDES
BEFORE THE
ECONOMIC AND ENVIRONMENTAL AFFAIRS COMMITTEE
MARYLAND SENATE

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Mr. Chairman and members of the Committee. I am Jay Feldman, Executive Director of the National Coalition Against the Misuse of Pesticides (NCAMP), a national, grassroots, membership organization that represents community-based organizations and a range of people seeking to improve protections from pesticides and promote alternative pest management strategies which reduce or eliminate a reliance on pesticides. Our membership includes residents of Maryland and spans the 50 states and groups around the world.

We are facing a national pesticide exposure crisis, the dimensions of which are not adequately calculated by the U.S. Environmental Protection (EPA). At the center of this crisis are our children. Children are especially vulnerable to pesticides. Children take in more pesticides relative to body weight than adults and are less able to detoxify toxic chemicals.¹ Low levels of pesticide exposure can adversely affect a child's neurological, respiratory, immune and endocrine system.

Our testimony today supports the adoption of legislation that provide parental and school employee notification of pesticide use. Legislation adopted and signed into law last year, creates landmark law to insure that appropriate notification is provided when pesticides are used and requires the adoption of pest management techniques that do not rely on toxic chemicals, where possible. The

¹ National Research Council, National Academy of Sciences, *Pesticides in the Diets of Infants and Children*, Washington, DC: national Academy Press, 1993; Calabreses, E.J., *Age and Susceptibility to Toxic Substances*, John Wiley & Sons, 1986; Natural Resources Defense Council, *Intolerable Risk: Pesticides in Our Children's Food*, February, 1989; Spyker, J.M. and D.L. Avery, "Neurobehavioal Effects of Prenatal Exposure to the Organophosphate Diasinon in Mice," *Journal of Toxicology and Environmental Health* 3:989-1002, 1977; Paigen, B., "Children and Toxic Chemicals," *Journal of Pesticide Reform*, Summer 1986.

legislation before you will extend this law to the outdoor pest management practices in schools. We urge that this legislation be adopted to provide for universal, prior written notification when pesticides are used on school grounds. Because of the ability of pesticide to drift or volatilize, it is important that this notification standard be applied in all cases when pesticides are used outdoors, regardless of where the application takes place and the area treated.

Some of the pesticides used on Maryland school grounds. An overview.

Diazinon. One of the insecticides used in Maryland's school yards, diazinon, is a nervous system poison. It poisons children by reducing the body's production of the enzyme cholinesterase, necessary to the transmission of nerve impulses, triggering a range of symptoms from nausea, dizziness, headaches, aching joints to disorientation and inability to concentrate.²

2,4-D. Most studies have been unable to associate specific types of pesticides with specific types of disease. However, exposure to phenoxy herbicides (2,4-D, mecoprop, MCPA, all which are major lawn pesticides) have been linked with increased risk of specific cancers of the lymphatic and blood systems. For example, a 1986 National Cancer Institute study of Kansas farmers reports that those exposed to 2,4-D for 20 or more days per year were six times more likely to develop non-Hodgkins lymphoma than nonfarmers. Even higher risk was found for farmers who frequently mixed or applied the herbicide themselves.³ Women workers exposed to atrazine, another major lawn herbicide, were nearly three times more likely to suffer ovarian cancer according to a recently published study by Donna et al, 1989.⁴ Study conducted by the National Cancer Institute found elevated rates of canine lymphoma in dogs living in households where 2,4-D was used.

Glyphosate (Roundup/Rodeo). The adverse effects associated with glyphosate were early documented by doctors in Japan between June, 1984 and March, 1986 in cases associated with suicide attempts, causing gastrointestinal, respiratory, cardiovascular, and central nervous system damage. (Sawada, Lancet, 1988) At the time, the doctors identified the surfactant in the pesticides, POEA, as the cause of the adverse effects. This raises serious concerns about the product formulation, most of which is usually not disclosed on the product label, but

² Volberg, D.I., et al., Pesticides in Schools: Reducing the Risks, Attorney General of New York State, New York State Department of Law, Environmental Protection Bureau, New York, March 1993.

³ S.K. Hoar, et al., "Agricultural Herbicide Use and a Risk of Lymphoma and Soft-Tissue Sarcoma," *Journal of the American Medical Association*, 256(9): 1141-1147, 1986.

⁴ A. Donna, et al., "Triazine Herbicides and Ovarian Epithelial Neoplasms," *Scandinavian Journal of Work and Environmental Health*, 15: 47-53, 1989.

protected as trade secret information. A recent review identifies serious adverse effects associated with glyphosate's so-called inert ingredients. Inert is a term of art because it can include chemicals that are both chemically and biologically active. Glyphosate products have been reported to contain ammonium sulfate, benziothiazolone, 3-iodo-2-propynyl butylcarbamate (IPBC), isobutane, methyl pyrrolidione, pelargonic acid, polyethoxylated tallowaine (POEA), potassium hydroxide, sodium sulfite and sorbic acid. These chemicals are associated with a range of acute effects, including eye irritation, nausea, diarrhea, respiratory reactions, miscarriages in laboratory tests, skin reactions, weight loss. The California Department of Pesticide Regulation, 1998, in an unpublished report attributes the following adverse effects to glyphosate exposure: eye irritation, painful eyes, burning eyes, blurred vision, swollen eye, face, joints, facial numbness, coughing, headaches skin rash, heart palpitations, elevated blood pressure, chest pains and more.⁵

Triclopyr (Garlon). Garlon can cause permanent impairment of vision. Effects include severe conjunctival irritation, moderate internal redness, and moderate to severe corneal injury. Washing is not effective in prevention these effects. Subchronic and chronic feeding laboratory studies found kidney and liver effects in dogs.

At the same time, people are getting sick from non-agricultural pesticide exposure in their homes, offices, schools, and work places through direct exposure, drift, volatilization, or by way of residues on treated landscapes. According to EPA, "It is estimated that lawn pesticide sales in the U.S. approach \$500 million annually and result in 20 to 30 million pounds of active ingredients applied."⁶ EPA says there are 232 active ingredients in products which have ornamental lawn uses and notes that commercial chemical lawn care companies have experienced a rapid growth since the late 1970's, with a 15% annual growth rate in the early 1980's to become a \$2.8 billion industry. Approximately 230 million pounds of pesticides are used for non-agricultural purposes. The National Academy of Sciences report, *Urban Pest Management*, cites data from three cities surveyed in 1971 (years before the tremendous growth in lawn pesticide sales) where pesticides were applied at a rate of 5.3-10.6 pounds per acre, "suggesting that suburban lawns and gardens received heavier pesticide applications than most other land areas in the United States," according to the report.⁷

The growth of the chemical lawn care industry is a troubling development, in

⁵ Caroline Cox, *Herbicide Factsheet: Glyphosate (Roundup)*, Journal of Pesticide Reform, Northwest Coalition for Alternatives to Pesticides, 1998.

⁶ U.S. Environmental Protection Agency, *Lawn Pesticide Policy Group Briefing Paper*, Internal Document, January, 1988.

⁷ National Academy of Sciences, *Urban Pest Management*, 1971.

light of public exposure to hazardous pesticides that can cause cancer, toxic sensitization, neurological problems and a range of short term effects such as dizziness, headaches, rashes and mental disorientation. In addition, most of the pesticides in use have not been fully tested for the range of possible adverse health effects. This is true for both the active and inert ingredients.

According to its own internal memoranda, EPA lacks the information necessary on public exposure to ensure adequate protection. The Agency has virtually no data on two major routes of public exposure to lawn pesticides, through inhalation and skin absorption. EPA's internal documents reveal, "In order to provide meaningful estimate for homeowners and other individuals who may be exposed to pesticides via contact with treated home lawns, the Exposure Assessment Branch [of EPA] would need dislodgeable residue data."⁸

Many pesticides affect the immune system, which can result in increased problems with allergies, asthma, hypersensitivity to chemicals and a reduced ability to combat infections and cancer.⁹ Many insecticides, herbicides and fungicides are linked to cancer. The commonly used weed killer 2,4-D has been linked to non-Hodgkin's lymphoma in scientific studies of farmers and canine lymphoma in dogs. Studies show that children living in households where pesticides are used suffer elevated rates of leukemia, brain cancer and soft tissue sarcoma. The probability of an effect such as cancer, which requires a period of time to develop after exposure, is enhanced if exposure occurs early in life.

A U.S. General Accounting Office (GAO) review of pesticides, entitled *Nonagricultural Pesticides: Risks and Regulation*, found that, "The general public receives limited and misleading information on pesticide hazards."¹⁰ That was 1986 and nothing has changed in the intervening 13 years. Meanwhile, pesticides curtailed for use in nonresidential settings continue to be used around schools. For example, a commonly used insecticide called diazinon (SpectracideTM), banned by EPA for use on golf courses and sod farms because it had caused over 100 documented bird kills, is still available and used on Maryland school grounds. While EPA offers virtually no public health warning to consumers who use or are exposed to malathion, widely used in lawn and landscape care, the Agency does warn people to, "Wash immediately if automobiles are accidentally sprayed."

As evidence of public health and environmental effects associated with lawn and landscape pesticides mount, EPA claims that it regulates these toxic materials

⁸U.S. Environmental Protection Agency, January, 1988.

⁹Paigen, B., "Children and Toxic Chemicals," *Journal of Pesticide Reform*, Northwest Coalition for Alternatives to Pesticides, Summer, 1986.

¹⁰U.S. General Accounting Office (GAO), *Nonagricultural Pesticides: Risks and Regulation*, Washington, D.C., GAO/RCED-86-97.

in compliance with a risk-benefit standard in the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). In fact, in spite of the increasingly well-known risks, EPA often justifies the widespread use of poisons in pest control by referring to the "benefits" of their use. The biggest difference in the way that pesticides, as opposed to other toxic substances, are regulated is that it is assumed that there are benefits to releasing pesticides in the environment.¹¹

Under FIFRA, EPA may register a pesticide after determining that it "will not generally cause unreasonable adverse effects on the environment," and may cancel the registration if it does cause unreasonable effects on the environment. FIFRA defines "unreasonable adverse effects on the environment" to mean "any unreasonable risk to man or the environment, taking into account the economic, social and environmental costs and benefits of the use of any pesticide."¹² Those who use a pesticide have a right to expect that they will receive a benefit commensurate with the risk they take, and to which they expose their families, neighbors, and environment.

While EPA has attempted to apply a partial benefits analysis to pesticides on the market which have exceeded risk criteria established by the Agency, no analysis is conducted "up front," when the pesticide is registered. The Agency does not even pretend to do a benefit analysis. Officials assume that if there were no benefits to using the pesticide, then there would be no market. Therefore, barring evidence of extraordinary risks, EPA assumes that benefits outweigh the risks in the initial registration decision. At the "tail end," EPA does an analysis of the "economic impact of cancellation." EPA determines how the pesticide is used, how many acres are treated, and what is the most likely alternative to be used if the pesticide under consideration is cancelled. The most likely alternative in EPA's analysis is generally the most commonly used alternative pesticide.

EPA has failed the public's confidence. When it comes to non-agricultural pesticides, particularly those used for lawn and landscape care, EPA has failed to comply with the most basic of benefits reviews. Does a green lawn justify exposure to carcinogens, neurotoxins and chemicals that cause birth defects, genetic damage, and toxic sensitization? We do not think so. Has EPA considered the range of alternative methods of lawn and landscape care available, which does not rely on toxic materials? No it has not. Is the Agency out of compliance with the basic requirements of the law? Yes, it is.

The threat to public health from the use of lawn care pesticides is well documented in laboratory studies and victim reports. The cosmetic benefits do not

¹¹Dr. Terry Shistar, National Coalition Against the Misuse of Pesticides, *The Benefit Side of Risk-Benefit Analysis*, 1990.

¹²Federal Insecticide, Fungicide and Rodenticide Act, as amended, 1972.

outweigh the potential for additional, repetitive, and significant exposure to these toxins. There are problems based on what is known as well as what is not known. Lack of adequate data and public awareness on the full health and environmental consequences further argues for a change in use patterns and regulation of lawn chemicals.

I. The Cosmetic Benefits of Lawn Care Pesticides Do Not Justify Additional Public Exposure To Hazardous Chemicals.

As with most pesticides, use of lawn care pesticides poses immediate and long-term health risks to the public. While the nation has come to accept certain risks from pesticide use in agriculture and public health, based on the value of the food supply and protection from disease, increasingly the public is calling into question the use of pesticides for cosmetic results alone. The growth of the lawn care industry is a troubling development as it introduces additional exposure to hazardous chemicals that can cause short-term effects such as dizziness, headaches, rashes, and mental disorientation as well as cancer, neurological problems, reproductive effects, and birth defects.

II. Commonly Used Lawn Chemicals Are Known To Cause Cancer, Birth Defects, Liver and Kidney Damage, Reproductive Effects, and Skin Problems.

Of the 232 active ingredients registered for use on lawns, EPA estimates that 33 of these account for 95% of the use.¹³ Laboratory studies and/or reports on exposed humans indicate that those 33 include 9 with evidence of carcinogenicity, 10 with evidence of the potential to cause birth defects, 3 that have exhibited adverse reproductive effects, 9 shown to be damaging to the liver and/or kidneys, and 20 known to adversely effect the nervous system. The majority, 29, are known to cause skin disease or irritation. These represent documented toxic effects.¹⁴

III. Studies Of Human Populations Offer Further Evidence Of The Link Between Pesticide Exposure And Cancer

¹³U.S.Environmental Protection Agency, *Lawn Pesticide Policy Group Briefing Paper*, Internal Document, January, 1988.

¹⁴M. Moses, "Pesticide-Related Health Problems and Farmworkers," AAOHN Journal, 37(3): 115-130, 1989; U.S. Environmental Protection Agency Health Advisory Summaries, Office of Water, January, 1989; L. Weiss, *Keep Off The Grass*, Public Citizen's Congress Watch, April, 1989; M. O'Malley, "Skin Disease in Agricultural Workers," Pesticides and Health Conference, Yakima, WA, August, 1989; *Federal Register*, "Regulation of Pesticides in Food: Addressing the Delaney Paradox Policy Statement," October 19, 1988.

A. Elevated Cancer Rates Occur Among Occupationally Exposed Groups

In addition to the laboratory tests required in support of pesticide registration, evidence of the hazards posed by pesticide chemicals can be seen in human epidemiological studies. These unfortunate observations indicate that human exposure to pesticides is partly responsible for cancer rates which have been on the rise since 1950.¹⁵

B. Children, A Particularly Vulnerable Group, May Be At Serious Risk From Home and Lawn Pesticide Exposures

Often the occupational setting offers the best opportunity to associate specific exposures with particular outcomes. Numerous cancer mortality and case-control studies indicate that farmers, pesticide applicators, and pesticide plant workers suffer elevated rates of some cancer types, particularly lip, stomach, leukemia, lymphatic, multiple myeloma, and prostate.¹⁶

Children rarely fall prey to cancer, yet there are few more tragic events than cancer striking a young person. Epidemiological studies of childhood cancer lend very disturbing evidence that exposure to pesticides at home may be an important risk factor. Childhood tumors and blood disorders have been linked with substantial prenatal or environmental exposure to specific insecticides by Infante, et al.¹⁷ while Gold, et al. report that children with brain cancer are more likely than normal controls to be exposed to insecticides in the home.¹⁸ A study sponsored by the National Cancer Institute indicates that household and garden pesticide use can increase the risk of childhood leukemia as much as seven-fold.¹⁹ The most common exposure of 15 children whom reported to a blood dyscrasia clinic in California stricken with aplastic anemia or leukemia, was found to be exposure to household use pesticides, particularly DDVP and propoxur, a major residential use pesticide.²⁰

¹⁵S.S. Epstein, M.D., "Losing the War Against Cancer," *The Ecologist*, 17(2): 91-99, 1987.

¹⁶Statement of Leon F. Burmeister, Professor, Department of Preventive Medicine and Environmental Health, University of Iowa, before the Subcommittee on Department Operations, Research, and Foreign Agriculture, Committee on Agriculture, U.S. House of Representatives, May 21, 1985.

¹⁷P.F. Infante, et al., "Blood Dyscrasias and Childhood Tumors and Exposure to Chlordane and heptachlor," *Scandinavian Journal of Work and Environmental Health*, 4: 137-150, 1975.

¹⁸E. Gold, et al., "Risk Factors for Brain Tumors in Children," *American Journal of Epidemiology*, 109(3): 309-319, 1979.

¹⁹R. Lowengart, et al., "Childhood Leukemia and Parents' occupational and Home Exposures," *Journal of the National Cancer Institute*, 79: 39, 1987.

²⁰J.D. Reeves, "Household Insecticide-Asasociated Blood Dyscrasias in Children,"

IV. Gaps In The Toxicity Data Base Of Lawn Pesticides Makes It Impossible To Assess The Full Extent Of The Hazard They Pose.

The limited toxicity and epidemiological information which exists makes it clear that many of these chemicals pose a real and unnecessary hazard. Yet there is a great deal of information which we lack. Gaps in the toxicity data of the vast majority of pesticides in use today, which have been cited by numerous reports and studies by the General Accounting Office (GAO)²¹ and National Academy of Sciences (NAS),²² make it impossible to fully assess the long-term health hazard that pesticides pose. Since the overhaul of FIFRA in 1972 and EPA's mandate to bring pesticides into full compliance with modern safety standards, EPA has been able to collect full health and safety data on only 10 of the 600 active pesticide ingredients to date.²³ Also, as lawn care chemicals fall under the category of terrestrial nonfood use pesticides, the toxicity data requirements are less rigorous. The battery of chronic toxicity data including the potential to cause cancer, birth defects, and reproductive effects are not required of lawn pesticides if they do not also have food or feed uses. While 26 of the 33 most commonly used lawn pesticides do also have food or feed uses, as mentioned above this does not guarantee the existence of complete toxicity information. Finally, EPA does not require testing for immune system effects or chronic neurotoxicity, despite increasing scientific concern and evidence that pesticides adversely affect the immune and nervous system.²⁴ Currently, EPA's required neurotoxicity testing is limited to an acute delayed paralytic effect caused by some members of a distinct group of pesticides.

V. The Opportunities For Exposure to Lawn Pesticides Are Numerous and Significant While Public Awareness of Hazard Is Minimal.

Clearly the severity of health risks posed by lawn care chemicals underscores the need to reduce or better still, to eliminate exposure. The opportunities for exposure to lawn pesticides are numerous, ranging from their application on golf

(letter), *American Journal of Pediatric Hematology/Oncology*, 4: 438-439, 1982.

²¹U.S. General Accounting Office, *Pesticides: EPA's Formidable Task to Assess and Regulate Their Risks*, RCED-86-125, 1986; U.S. General Accounting Office, *Nonagricultural Pesticides: Risks and Regulation*, RCED-86-98, 1986.

²²National Research Council, National Academy of Sciences, *Toxicity Testing: Strategies to Determine Needs and Priorities*, 1984.

²³Chuck Kent, Chief of Reregistration Division, Office of Pesticide Programs, U.S. EPA, telephone conversation, March 24, 1989, as cited in Laura Weiss' *Keep Off The Grass*, Public Citizen's Congress Watch, April, 1989.

²⁴C.D. Klaassen, et al. (eds), "Toxic Effects of Pesticides," *Cassarett and Doull's Toxicology*, Macmillan Publishing Company, New York, NY, 1986.

courses, playgrounds or athletic fields to parks, rights-of-way, or indoors in public buildings.

While residential useage data is limited, a 1976-77 EPA survey found that approximately 40% of households use pesticides in their yards²⁵ and the National Academy of Sciences notes that suburban lawns and garden receive far heavier applications per acre than most other land areas in the U.S. including agricultural acres.²⁶ It is important to recognize that households use and store pesticide products unaware of the health implications, usually assuming that registration with EPA is equated with "safety" or "approval". The public is not generally informed on the gaps that exist in EPA's health and safety files or that pesticides are regulated based on a risk/benefit statute. Misleading advertising by those who sell pesticides further fuels these misconceptions.

Most of the information available to the user is in the form of the label. Labels advise on appropriate application methods and may contain precautionary information by way of recommending protective clothing such as long shirtsleeves and gloves or washing up after use. Health information is usually limited to warnings about acute hazard based on the immediate effects that result from a large exposure to the active ingredient. No information on chronic effects is included, nor even an indication of the EPA carcinogenicity rating. Furthermore, it is important to note that the "inert" ingredients which are not required to be listed by name on a pesticide label, may be just as, if not more, hazardous than the pesticide's active ingredient(s). Toxicity information about these trade secret chemicals is not available to users. Moreover, EPA's recently released study of exposure to pesticides in the home notes that residents often do not read the labels of pesticide products before using them.²⁷ Of course, even if labels are read, they do not generally provide information on the potential long-term effects from low level exposure over a long period of time. And if a resident employs a lawn care company, there is little chance the customer will see the pesticide label or be alerted to the potential health risks.

VI. The Use Of Lawn Care Companies Presents Special Problems.

Employment of lawn care companies presents additional special hazards in that they spray more frequently, often preventively (and, therefore, possibly

²⁵U.S. Environmental Protection Agency, *National Household Pesticide Usage Study*, Epidemiologic Studies Program, Health Effects Branch, Hazard Evaluation Division, 1979.

²⁶National Research Council, National Academy of Sciences, *Urban Pest Management*, 1980.

²⁷U.S. Environmental Protection Agency, *Nonoccupational Pesticide Exposure Study* (NOPES), EPA/600/3-90/003, 1990.

unnecessarily) and use chemical mixtures which may pose greater health hazards in combination. EPA does not require tests for the effects which may result from the interaction between different mixtures of pesticides yet consumers of a lawn care company's service usually are buying treatments consisting of a chemical brew. Also, while an individual household may only be treated six times per season, exposure from neighboring applications multiplies the exposure. One woman reported 40 pesticide applications in her immediate area in a two day period, by just one company.

VII. EPA Is Unable To Adequately Assess The Public's Exposure to Lawn Pesticides.

While it is the responsibility of the EPA to assess the risks associated with each pesticide's use in order to ensure adequate public protection, their internal memoranda acknowledges that the information necessary to assess public exposure to lawncare pesticides is lacking.²⁸ The Agency has virtually no data on two major routes of public exposure to lawn pesticides, through inhalation and skin absorption. The memo reveals, "In order to provide meaningful exposure estimates for homeowners and other individuals who may be exposed to pesticides via contact with treated homelawns, the Exposure Assessment Branch would need dislodgeable residue data." Children, with their playing habits, may be subject to the greatest levels of exposure. This is of serious concern as they are also at special risk to carcinogenic or neurotoxic pesticides which are particularly harmful to immature and developing systems²⁹.

VIII. Where There Is No Federal Agency Or Policy For Pesticide Victim Reporting, Victim Stories Must Serve To Illustrate A Portion Of The Health Consequences of Lawn Pesticide Use.

Assessing the full societal cost of hazardous lawncare pesticides is impossible. As there is currently no federal agency or specific policy to report on the extent of poisonings and illnesses that result from pesticide use, we must rely on the stories of victims which illuminate a portion of the health consequences. Newspaper articles announce the poisoning of schoolchildren in and around school areas, personal injury lawsuits are filed by the dozens against lawn care companies, and neighbors fed up with family and pet poisonings from neighborhood pesticide drift have organized to create local notification ordinances. In Phoenix, the Department of Health Services received a rash of complaints from children experiencing rashes, headaches, and even a swollen face as a result of pesticide use

²⁸U.S. Environmental Protection Agency, *Lawn Pesticide Policy Group Briefing Paper*, January, 1988.

²⁹E.J. Calabrese, *Age and Susceptibility to Toxic Substances*, John Wiley & Sons, 1986.

at the school.³⁰ In many cases students had been playing on pesticide treated fields. A Florida elementary school had to be evacuated for two days after pesticide drift from a neighboring park left 35 students and staff suffering nausea and eye, nose, and throat irritation.³¹ Marianne Johnson lost her dog following her use of 2,4-D and MCPP on shrubs. A neighbor's 2,4-D overspray on bushes poisoned John Jacobson's dog. Patricia Gergel hired ChemLawn Services Corp. The morning after their treatment with triclopyr, dacthal, and 2,4-D she woke up with hives on her arms and legs and continues to suffer outbreaks of rashes. A federal jury awarded her \$67,000, mostly in punitive damages, for a suit which charged the company misrepresented the treatment as safe. Diazinon, a major use lawn pesticide, has been responsible for approximately 60 bird kills in 18 states involving 23 species of birds.

Associating the immediate effects of pesticide intoxication is easier than outcomes which occur sometime later such as cancer, birth defects, or behavioral and learning effects. Yet Janet Darling suspects that the 2,4-D use by the Forest Service near where she lived 3 months prior to the conception of her son and in the latter part of her pregnancy are responsible for her son's birth defects. The defects, cleft palate, deformed ear, malformed and maybe missing neck vertebrae, and heart defects are remarkably similar to those seen in laboratory studies of 2-4-D exposure. The list of human and non-human victims is a long and growing one.

IX. Chemical Sensitivity Is Increasing And Could Become A Large Problem With Significant Economic Consequences Related To The Disablement Of Productive Members of Society.

A medical problem that is receiving increasing attention and which deserves special consideration is the non-specific, debilitating syndrome of chemical sensitivity. Often (but perhaps not always) the result of some acute or traumatic exposure, victims suffer the triggering of symptoms and observed sensitivities at very low levels of chemical exposure. A recent report to the New Jersey State Department of Health by Dr. Claudia Miller at the University of Texas Health Science Center and Dr. Nicholas Ashford at the Massachusetts Institute of Technology contains the most comprehensive study of this topic to date, and concludes that "existing evidence does suggest that chemical sensitivity is increasing and could become a large problem with significant economic consequences related to the disablement of productive members of society."³² For

³⁰L. Vrcan, "Are Pesticides a Cause for Concern?" *School and College Product News*, February, 1987.

³¹Nick Madigan, *The Palm Beach Post*, "Toxic Pesticide Fumes Make 35 Kids Sick, Force Closing of School, Park," May 22, 1986.

³²N.A. Ashford, and C.S. Miller, *Chemical Sensitivity: A Report to the New Jersey Department of Health*, 1989.

individual victims, the use of lawn care pesticides threatens their daily health during the spray season and forces lifestyle alterations.

For example, Carol Kapuszak faces longterm and continuing problems associated with her neighbors' application of lawn chemicals through the ChemLawn Service Corporation.³³ She has experienced chemical sensitivity, immune dysfunction and severe toxicological reactions to any lawn chemicals to which she is exposed. Her complaints of violent illness (including headaches, nausea, and diarrhea) as a result of exposure to even minute amounts of air-borne lawn care chemicals are clearly documented. Her efforts to obtain prior notification before application of lawn care chemicals to avoid noxious toxicological response has, at times, been unsuccessful and has resulted in serious injury and increased medical costs.

Barbara Ann Smith also suffers from severe chemical sensitivity. Although seriously ill since birth, she was able to work, raise a family and lead a normal life until lawn spraying and fumigation of public buildings became widespread. Exposure to lawn pesticides has caused her to lose consciousness, go into convulsions, and experience kidney problems. Ms. Smith now requires constant care and friends drive her from her Williamsville, New York home when a nearby lawn is sprayed.

Marietta Butler is another victim of chemical sensitivity. She has lived in a motel room for more than four years because it provides the most benign environment. Ms. Butler was healthy until being exposed to lawn spray in 1981 while living adjacent to a golf course in Syracuse. She has experienced chest pains, numbness, shortness of breath and dizziness on several occasions. Since then she became severely allergic to gas or oil heating systems, synthetic materials, non-organic food and other substances. Now permanently disabled, she left her teenage son with her parents in order to live in a motel room with electric heat in an all masonry building. Still she uses more than \$500 worth of oxygen each month, and is forced to leave her room whenever lawn sprays are applied at nearby businesses or homes.

X. The Public's Health Is Unnecessarily Threatened By the Use of Lawn Pesticides.

The data presented and the stories relayed are undeniable. Existing use patterns and regulation of lawn pesticides is not protecting the public's health. Rather, the unleashing of these chemical toxins into our environment for aesthetic

³³Letter re. ChemLawn Company from Craig A. Slater, Assistant Attorney General, Environmental Protection Bureau, New York Department of Law, Buffalo, NY, November 21, 1989.

gain is responsible for countless human suffering and untold environmental consequence. In the words of Rachel Carson, "How could intelligent beings seek to control a few unwanted species by a method that contaminated the entire environment and brought the threat of disease and death even to their own kind? Future generations are unlikely to condone our lack of prudent concern for the integrity of the natural world that supports all life."