#88

CONCERNS WITH PESTICIDES

- A PUBLIC VIEWPOINT

Address to the

THIRD ONTARIO CROP PROTECTION CONFERENCE

University of Guelph

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I. INTRODUCTION: CELA INVOLVEMENT IN PESTICIDE ISSUES

The Canadian Environmental Law Association, founded in 1970, is a public interest environmental law group committed to the enforcement and improvement of environmental laws.

CELA has been involved in pesticide issues largely through contact with members of the public who have experienced or are concerned about potential health or environmental problems arising from the use or misuse of particular pest control products.

Specifically in the past, CELA has represented:

- citizens groups in various parts of Ontario who have been concerned about the spraying of 2,4-D in city parks and schoolyards;

- citizens in northern Ontario who have been concerned about the use of 2,4-D and matacil in the Ministry of Natural Resources forest management program;

- individuals concerned about incidents involving contact with 2,4-D, and resulting adverse health effects.

We have been asked by the organizers of this conference to deal with the public's concerns about pesticides. As the majority of

our cases over the past few years have involved 2,4-D, we will focus on this herbicide as a microcosm of the issues in this area generally. We will also raise questions of the adequacy of pesticide laws and safety testing procedures as well as discuss alternatives to chemical pest control.

There can be no doubt that the public is concerned about the current use of certain pesticides. For example, the increasing number of cases our office has been receiving on 2,4-D would tend to indicate that all is not well with this particular herbicide.

The position that we find ourselves advocating on behalf of our clients is that one should err on the side of caution in the use of a pesticide where there is mounting evidence of adverse environmental and health effects. A careful analysis must be done of the costs and benefits involved in a particular pesticide program before making a decision to spray. The concept of cost must include all environmental and health costs. Thus in the situation where city parks and schoolyards are sprayed for largely cosmetic reasons and where clearly non-chemical alternatives are available and feasible, CELA, on behalf of our clients, have advocated that the use of 2,4-D be discontinued.

With regard to other uses of 2,4-D, including agricultural uses, CELA takes the position that the emphasis should be shifted away from chemical pest control to an integrated pest management approach. We would stress that while farmers have a legitimate interest in getting the best crops possible, it is the chemical companies, and

not the farmers, who have a vested interest in the promotion of chemical pest control. It is the farmers and the general public, and not the chemical company executives, who come in contact with these pesticides and who are suffering the adverse health and economic effects which are increasingly coming to light.

CELA has also called for increased public participation in the decision-making processes involving the registration and use of pesticides. Currently under the federal Pest Control Products Act, pesticides are registered as a result of consultation between the chemical industry and the federal government with no opportunity for public input. If new evidence comes to light on adverse health and environmental impacts, there is no process for public hearings and re-registration. The Provincial Pesticides Act which further classifies and regulates the use of pesticides, also lacks provisions allowing public participation and review.

It is this fact of being locked out of the decision-making process that often leads to frustration on the part of the public. The difficulty in obtaining up-to-date scientific information from government agencies as well as the basis on which regulatory decisions are made is also a problem.

In a May 1980 report to the American President entitled "Toxic Chemicals and Public Participation", 18 U.S. federal agencies have called for increased public participation in the regulatory process and have recommended funding for this purpose. The report bases

these recommendations on the principle that opportunities for effective participation enhances the legitimacy of the decisions reached.

Maxwell Cohen, the Chairman of the Environmental Contaminants Board of Review issued a report in July 1980 entitled "On Outside Review and Public Participation." At that time he stated that "in all the years the federal government has been making regulations to control pesticides, not a single public hearing has been held." He felt, however, that "public participation in pesticide matters was expecially needed because of the political, economic and social issues involved."

On the issues of access to information, the U.S. report states that, "the public has a strong interest in obtaining information on potentially toxic chemicals in products, in the workplace and in the environment in order to balance the benefits of exposure to substances against the risks in their own daily lives."

Yet in Ontario, citizens have difficulty getting copies of the permits issued to pesticide sprayers. The government in reversing a previous policy of access has stated that the public cannot have actual copies of these permits, but that the Ministry of the Environment will send out a letter containing most of the information contained in the permit. This is a waste of taxpayers money and civil servant's time.

These obstacles to citizen involvement in the regulatory process

become a problem when new information is obtained on the health effects of a certain pesticide. Our office, in the course of researching cases involving pesticide use, have gathered a great deal of information on the health effects of 2,4-D. It is this kind of information we would expect to bring before a regulatory hearing if there was one. It is some of this evidence that we would like to bring to your attention this afternoon.

II. 2,4-D: CASE STUDY OF A SAFE HERBICIDE?

. Information about adverse health effects of 2,4-D has been known for a long time. Rachel Carson, in her book Silent Spring, published 18 years ago, reported that "2,4-D has been shown experimentally to disturb the toxic physiological process of respiration in the cell and to imitate x-rays in damaging chromosomes."

. In the summer of 1979, a conference was held on pesticides at the medical school of the University of Oregon. At that time, a paper was given by Dr. Melvin Reuber from the National Cancer Institute, Frederick Cancer Research Centre in Maryland, entitled "Carcinogenicity of 2,4-D." He concluded that "2,4-D is carcinogenic in male and female rats and probably also in mice." Dr. Reuber analysed all the health studies done on the possible carcinogenicity of 2,4-D in animals to reach his conclusions. He also finds that 2,4-D was mutagenic and teratogenic (i.e. causing birth defects) in animals and caused poisoning in animals and human beings.

. As to the issue of extrapolation of animal data results to humans,

the U.S. report referred to above states that there is a wide consenses among experts on the validity of using laboratory tests with rats and mice to identify chemical substances that may cause cancer in human beings. Interestingly, the report continues to state that the scientific basis and support among experts for animal testing are often not recognized by the public and recommends that the federal agencies educate the public further about laboratory tests and carcinogens.

. Mr. A. W. Reid, chief of the Water Quality Branch, Environment Canada, has pointed out that "on the prairies, we find low concentrations of 2,4-D almost everywhere we have water, even if water is far from agricultural areas. If the source of this material is water transported, it would indicate the herbicide is relatively resistant to total degredation."

. The National Research Council in their 1978 report on Phenoxy Herbicides cite a survey of 3,300 Saskatchewan grain elevator operators and farmers that showed that 20% suffered adverse health effects such as nausea, loss of appetite, weight loss and occasional vomiting from the spraying of 2,4-D. In September 1980, Health and Welfare Canada announced that they are spending $65,000 on preliminary work for a comprehensive study to find out how many cancers, nervous disorders and miscarriages 2,4-D may have caused in Saskatchewan.

. The U.S. Environmental Protection Agency on April 28, 1980, decided

that the results of review of data on the toxicity of 2,4-D did not provide them with a sufficient basis for regulatory action at this time. This was mainly due to large gaps in the data they reviewed. Under the authority of the U.S. Federal Insecticide, Fungicide and Rodenticide Act, the Agency has ordered manufacturers to conduct new studies to determine whether 2,4-D is safe for humans and the environment. The agency further stated that all uses of 2,4-D would be prohibited in 90 days unless the manufacturers agreed to conduct new tests. Specifically, these tests will be in the area of oncogenicity (tumour-inducing potential), reproductive effects, and metabolism in animals. We understand that the 90 day period started running in September of this year.

The conclusion to be drawn from the E.P.A. position is that while we may not have the definitive answer on long-term adverse health effects there is enough concern to warrant a de-emphasis on our dependence on this chemical.

Moreover, since the E.P.A. statement regarding the sufficiency of data earlier this spring, there have been a number of new scientific findings which point to the increasing risk of continuing to use 2,4-D without question. Specifically on October 23, 1980, it was announced by Agriculture Canada that using state-of-the-art technology some 2,4-D products have been found to contain dioxin contaminants. While there had been some evidence which pointed to the existence of these dioxins, this is the first time that a government department has announced such a finding.

It now appears that a decision will be made on the future of 2,4-D before the spring spraying season.

III. THE FAILURE OF A CLOSED REGULATORY PROCESS: THE IBT AFFAIR AND ITS LARGER MEANING

Another new development has been the revelation in Canada of what is being called the "IBT affair". The IBT affair involves the fraudulent testing of numerous pesticides by Industrial Biotest Laboratories, Illinois. These pesticides are in widespread use in both Canada and the United States. The discovery of this reliance on fraudulant data has raised serious questions about the adequacy of our own pesticide laws. Specifically the IBT affair highlights:

- the failure of a closed regulatory process to protect public health and the environment;
- the result of an undue reliance on pesticides as the only answer to the detriment of alternative pest control strategies; and
- the dangers of a lack of an independent testing and research capability in Canada.

Concerns have been raised generally about the adequacy of Canadian research. The Saskatchewan Environmental Advisory Council in their 1977-78 annual report states:

> "There are major deficiencies in the present research and regulatory process. At the federal level, the main regulatory bodies (Agriculture and Health) do not conduct sufficient independent research. Both departments are forced to rely in part on laboratory tests by the chemical manufacturers. It is not com-

> petence but rather objectivity and credibility which are absent in this arrangement. A National Research Council biologist has stated that many of the present studies simply do not indicate the full potential hazards. For example, although studies have been conducted on specific chemicals, virtually no research has been done to determine the cumulative effects of using several agricultural chemicals over an extended period of time in the same area."

Thus, historically we have relied heavily on U.S. testing data with the result that we are now totally involved in sorting out the aftermath of the discovery of the fraudulent IBT data. Since 1977, the Canadian and U.S. governments have been conducting a joint audit on studies of all pesticides whose registrations were supported by IBT data. The IBT testing deficiencies related to whether the manufacturers' products cause such adverse effects such as cancer, birth defects, nerve damage or metabolic problems.

The audit has been moving very slowly and Mr. R.O. Read, Chairman of a federal working group on IBT pesticides, acknowledged that many registrants had failed to submit the information requested by the US EPA and Health and Welfare Canada. In a recent letter to the Canadian Agricultural Chemicals Association, Mr. Read advised that the validity of all IBT studies will remain in doubt until successfully demonstrated by the sponsoring registrant to be otherwise. He further noted that all long-term rodent studies and multigeneration reproduction studies performed by IBT were considered invalid and unless results from long-term animal testing by labs other than IBT could clear the pesticides in question, their safety would remain in doubt.

What is interesting is that there appear to be discrepancies between the U.S. and Canada as to the number of studies and pesticides requiring review. In June 1980 Health and Welfare published a list of 97 pesticides and then in August 1980 added an additional 9. They also announced that they had completed reviewing approximately half of a total of 815 studies in the joint audit. The U.S. has recently stated that 202 chemicals are under investigation and that approximately 1600 studies are involved.

Other inconsistencies in the Canadian-U.S. regulatory approaches to IBT tested products include the fact that a number of pesticides available for use in Canada and on the IBT list are currently subject to the U.S. E.P.A.'s rebuttable presumption against registration (RPAR) process. RPAR is a regulatory review procedure under U.S. federal pesticides law, reserved for substances that demonstrate chronic or acute health effects in humans and wildlife. Both captan (a fungicide)and lindane (an insecticide widely used in Canada), are suspected of being carcinogenic by the U.S. Environmental Protection Agency.

Indeed, in their recent Lindane Position Document, the U.S. E.P.A. has recommended the cancellation of the majority of uses of this pesticide. Their proposed label warning reads as follows: "The U.S. Environmental Protection Agency has determined that lindane causes cancer and fetotoxic effects in laboratory animals, and central nervous system effects in both human and laboratory animals."

The agency has also determined that there is a significant possi-

bility that children are more sensitive to the toxic effects of lindane than adults. To the best of our knowledge, no regulatory action has been taken in Canada to restrict the use of lindane.

The final inconsistency between the U.S. and Canadian IBT lists is the fact that 2,4-D appears on the U.S. list but not on the Canadian list. The position of both Canadian and U.S. governments has been to permit continued use of the pesticides supported in whole or in part by IBT data while re-testing proceeds. Other countries have not followed suit. For example, Sweden in 1978 banned the use of 9 pest control products that had been registered on the basis of tests conducted by IBT.

In view of the documented evidence on adverse health effects of 2,4-D, the new information regarding dioxins, and the fact that at least some of the data which supports the safety of 2,4-D is based on fraudulent data, we would submit that the evidence on the risks involved in using 2,4-D is increasing and that one can no longer turn a blind eye.

Regarding the IBT chemicals, CELA has recommended to the Pesticides Advisory Committee that pesticides on the IBT list with major data gaps be placed in a restricted use category until such time as scientifically valid studies demonstrate that the pesticide does not possess adverse effects.

The problems generally suggest that it is time for new directions in our pesticides policy and law.

IV. ALTERNATIVE PEST CONTROL STRATEGIES

The chemical companies in encouraging the dependency on 2,4-D have tried to scare both the government regulators and the farmers by arguing that if the herbicide were removed from use, "agriculture would suffer enormously -- food production would drop 30 to 50 per cent, the cost of food would increase greatly and the quality would decline to the point where you wouldn't want to buy apples, for example, because they would be full of maggots." This is an argument CACA uses generally for all pest control products. We would submit that this statement is exaggerated and that there is certainly evidence to the contrary. Again in following a "least-is-best" pesticide strategy which could include some chemical control, these figures would appear suspect. In an article by John Krummell and Judith Hough, at the college of Agriculture and Life Sciences, Cornell University, entitled "The Economic Consequences of Abandoning Pesticide Use", they state that while there is no doubt that considerable direct dollar benefits are derived from the use of pesticides, figures such as those cited above are "serious overestimates." They point to statistics showing that:

1. a relatively small percentage of crop acreage is treated with pesticides;
2. nonchemical pest control practices are currently used on more acreage than chemical control practices, and finally
3. crop losses from pests are already substantial, even with current chemical and nonchemical control methods.

They cite a 1978 Cornell study which analyzes the benefits of chem-

ical pesticides, including current patterns of pesticide use and estimated additional crop losses that would occur if pesticides were no longer used. The results of the study indicate that without insecticides, dollar losses would increase by about 5% above current losses to insects. Without herbicides, there would only be a 1% increase in crop losses due to weeds. Without fungicide use, crop losses were estimated at about 3%. The total of 9% is considerably lower than the 30-50% loss figures cited by the chemical industry.

The results of this analysis indicates that there would be no serious food shortage in the U.S. without pesticide use, even with only limited use of available alternative control techniques.

Other research has shown that pesticides are becoming counter-productive. For example, a 1976 report by the U.S. National Academy of Sciences indicated that because of pesticide abuse, yields of a number of major crops, such as corn, have begun to level off and in some cases to decline, and that losses are expected to accelerate. Often this is the result of a syndrome known as the "pesticide treadmill" in which insects acquire resistance to pesticides necessitating more costly applications which result in smaller agricultural yields until the infestation becomes uncontrollable.

The integrated pest management approach de-emphasizes synthetic poisons, and relies instead on biological and chemical controls.

CONCLUSION

In conclusion, we wish to cite a recent article in National Geogra-

phic entitled The Pesticide Dilemma, which poses the bottom line question as "who should bear the burden of proof in the pesticide dilemma?"

We would submit that on the evidence collected regarding 2,4-D the burden must be shifted to the chemical companies. The risks of continuing our dependency on this pesticide are beginning to outweigh the benefits of continued uncritical use. We must look more carefully at non-chemical alternatives and ensure that we don't "make the public unknowing guinea pigs, and the environment a laboratory."

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