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Standard-Setting to Protect Children's Health A Summary of the Pesticides Case Study

*Submission of the
Canadian Environmental Law Association
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*and the
Ontario College of Family Physicians
(Environmental Health Committee)*

*to the
House of Commons Standing Committee
on Environment and Sustainable Development*

*regarding the
Committee's Review of the
Federal Government's Regulatory Framework for Pesticides*

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**Submissions of the
Canadian Environmental Law Association
and the
Ontario College of Family Physicians Environmental Health Committee
to the
House of Commons Standing Committee on Environment and Sustainable Development
Regarding the Committee's Review of the Federal Government's Regulatory Framework
for Pesticides**

November 10, 1999

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1.0 INTRODUCTION AND CONTEXT

This submission is a summary of a detailed case study, near completion, that addresses the health effects of pesticides and the regulatory response by the Canadian Pest Management Regulatory Agency. The case study is in turn one of two case studies included within a large study addressing children's health and environmental standard-setting in Ontario (the "Children's Health Project"). Due for completion by mid-December of 1999, this work has been funded by the Laidlaw Foundation and conducted jointly by the Canadian Environmental Law Association and the Ontario College of Family Physicians Environmental Health Committee. This collaboration has laid a sound foundation for better understanding, further research and action steps, including educational activities, about the growing concern over the health effects in children of environmental contaminants and the adequacy of regulatory responses.

In contrast to the first case study which summarizes the comparatively vast amount of health effect information on one specific contaminant, lead, the Pesticides Case Study examines the relatively more limited information on a varied group of environmental contaminants collectively called, pesticides. Both case studies include a comprehensive review of health effects information as these affect Ontario children. On the regulatory side, the Pesticides Case Study focuses on a review of the Pest Management Regulatory Agency while the Lead Case Study is a broader canvassing of regulatory controls on all aspects of lead use and environmental emissions. The Lead Case Study provides the regulatory "cautionary tale" since it documents how regulatory action on lead has been consistently denied or delayed in the face of troubling but inconclusive evidence of harm. Despite early evidence from animal studies of the neurological harm caused by lead exposure, it was not until clear evidence of harm in children was extensively documented and literally millions of children were affected that effective regulatory action began to occur in industrialized countries, including Canada. The current situation with pesticides both in terms of the knowledge about health effects and the regulatory response is very similar to the early chapters of the "cautionary tale" of lead.

1.2 Children: Greater Exposure and Potential for Serious Health Effects

The 1993 report of the US National Research Council, *Pesticides in the Diets of Infants and Children*, was a pivotal work that focused attention on the greater susceptibility and exposure of children to environmental contaminants in general, but particularly from pesticide residues in foods. The range of known or potential health effects from pesticides includes: abnormalities in physical development; cancer; immune system suppression; neurotoxicity; reproductive effects; and alterations in endocrine function. However, the NRC report also highlighted that the gaps in our knowledge regarding the effects from pesticide exposures at a young age and over the course of childhood development are such that we cannot be certain of the long term effects on children's health.

Section 2 below summarizes, from the Pesticides Case Study, the circumstances by which children are generally more highly exposed to pesticides than are adults. Section 3 summarizes

the Case Study review of the scientific literature concerning the health effects of pesticides including the results from both animal studies and those addressing human health.

1.3 The Public Policy Response

Given the range and severity of both the demonstrated and potential effects of pesticide exposure, adequate pesticide regulation is critical to human and environmental health, and in particular, children's health. Globally, governments have begun to recognize the dangers associated with pesticides and are reassessing the safety of those that are currently in use. These governments are also applying new knowledge and assessment techniques in their evaluation of novel pest control products.

Government efforts to minimize the risks associated with pesticide use have also resulted in a number of international initiatives, of which Canada is a participant. For example, Canada is a signatory to the 1997 *Declaration of the Environment Leaders of the Eight on Children's Environmental Health*. In that declaration, Canada pledged to establish national policies regarding environmental hazards that, "take into account the specific exposure pathways and dose-response characteristics of children when conducting environmental risk assessments and setting protective standards."

The United States has recently acknowledged that changes are necessary in how science quantifies the risk to health from pesticides, in particular it recognized the need to better protect children. As a result of the scientific work by the NRC (noted above), the government committed to tougher standards for pesticide use in food with the *Food Quality Protection Act (1996)*.

1.4 Unfulfilled Commitments in Canada

In Canada, a new federal government agency, the Pest Management Regulatory Agency (PMRA), was created in 1995 to regulate pesticide use across the country. Since 1994, the federal government has made a number of commitments to improve its regulation of pesticide use. However, this investigation reveals that the great majority of these commitments remain unfulfilled. The federal government's failure to improve its regulation of pesticide use seriously calls into question the capacity of the current pesticide regulatory system to protect children's health.

Section 4 below summarizes the main conclusions of the Pesticides Case Study. Section 5 provides the Case Study recommendations organized according to the range of issues that are critical to the regulation of pesticides in a manner that is protective of children's health. These issues include necessary changes to the *Pest Control Products Act* and implementation of the Toxic Substances Management Policy, as well as a range of necessary changes to the process of pest control product registration, determination of food residue limits, pesticide re-evaluation and the regulation of pesticide formulants. Also considered are issues around access to information

and public involvement, alternative pest control methods and sustainable pest management and the application of WHMIS requirements to pesticides.

Finally, recommendations are made concerning the political will and resources necessary to do the job. The federal government's stated commitment to the well-being of Canadian children in the recently established National Children's Forum is laudable. This commitment is hollow however if it does not ensure that adequate resources exist to regulate toxic chemicals in a manner protective of children's health.

Full citations and references for the information in this report are contained in the Pesticides Case Study.

2.0 SUMMARY OF INFORMATION ON PESTICIDE EXPOSURE

Human exposure to pesticides occurs via numerous sources, media and pathways. Alongside the information in Table One, below, the following points provide a summary of exposure sources and issues specifically relevant to children.

- Children are *relatively* more often exposed to pesticides compared to other age groups.
- There are numerous routes of exposure by which children may come into contact with pesticides from everyday applications in their homes and yards through to dietary exposure to residues from agricultural application.
- The main exposure routes of concern are a) skin absorption, ingestion and inhalation from indoor and lawn applications and b) dietary exposure from pesticide use on fruits and vegetables that are important food items for young children.
- While those who work with pesticides and people living in agricultural communities are at greatest risk for exposure to pesticides, monitoring data for Canada and Ontario indicate that there are detectable levels of current and banned pesticides found in the environment and in certain foodstuffs, indicating the potential for general population exposure to these chemicals.
- Measures of the organochlorine pesticides (measured in blood, fat and breast milk of Great Lakes populations) indicate that most people carry a body burden of these persistent chemicals. There is concern for the effects from these same exposures which, in pregnant women and their unborn children, breastfed infants and children who eat freshwater fish or wildlife may mean exposure to higher than acceptable doses of certain pesticides.
- Poverty and minority status are additional factors that influence a child's exposure to pesticides. Poor children are more likely to live in areas and in homes that have pest infestations and therefore they may be more often exposed to pesticides applied in their household and surroundings.

Table 1. Sources of exposure relevant to children.

<p>1. The Home (in the child's home & homes of playmates)</p>	<p><i>Applications of pesticides</i></p> <ul style="list-style-type: none"> • Indoor commercial application of pesticides to control rodents, cockroaches, ants, termites, earwigs, etc. • Homeowner/resident use of insecticide sprays, strips, baits • Application of insect repellents directly on skin or scalp (e.g. personal bug sprays, shampoos for lice, scabies) • Collars or powders to treat household pets for fleas, ticks, etc. • Commercial application of lawn and garden insecticides, herbicides and fungicides • Insecticides, herbicides and fungicides used in the garden or on the lawn by the homeowner or resident <p><i>Storage and handling of pesticides</i></p> <ul style="list-style-type: none"> • Storage of household pesticides in areas accessible to children • Disposal of pesticides in household garbage <p><i>Pesticide life cycle and pathways</i></p> <ul style="list-style-type: none"> • Pesticide residues in house dust and in soil tracked in from outdoors • Pesticide residues on furniture, drapes, toys, pet fur, absorbent items
<p>2. Public Places (schools, daycare, etc.)</p>	<ul style="list-style-type: none"> • Commercial applications of pesticides for rodents, cockroaches, termites, etc. • Storage of pesticides in areas accessible to children • Disposal of pesticides and pesticide containers in regular school garbage • Commercial applications of pesticides to maintain playgrounds, playing fields • Wood preservatives on play structures • Pesticide application in other public places, e.g. airplanes, restaurants, malls, offices, etc.
<p>3. Via Air & Water</p>	<ul style="list-style-type: none"> • Pesticides in indoor air (from uses above for household and public places) • Pesticides in outdoor air <ul style="list-style-type: none"> • Pesticide drift from spraying (agricultural, municipal, household) • Long range transport of persistent pesticides (e.g. DDT) • Pesticides in drinking water - treated tap water or well water • Pesticides in swimming water - lake and river sediments, algicides in swimming pools
<p>4. Via Food</p>	<ul style="list-style-type: none"> • Food crops that are routinely sprayed and form a significant part of juvenile diet. E.g. fruits, vegetable, grains • Foods prepared from agricultural products. E.g., baby foods • Bioaccumulation in other animals and their products. E.g. meat, fish, eggs, dairy products, • Mother's intake and body burden transferred across placenta. • Mother's intake and body burden transferred to breast milk.

3.0 HEALTH EFFECTS OF PESTICIDES

The following summaries are excerpted directly from the detailed review (contained in the Pesticides Case Study) of the scientific literature concerning the health effects of pesticides.

3.1 Summary of Animal Studies

Experimental studies indicate that several different types of pesticides have a variety of effects on reproduction, development, growth, neurological development, behaviour, cancer risk and the functioning of immune and endocrine systems. The degree to which these observed effects are translatable to health risks in humans is not absolutely clear since some of these health effects have mainly been demonstrated only after exposure levels that are higher than those likely to be experienced by humans. Animal studies have also suggested, however, that there is increased sensitivity to pesticides in young, developing animals (both pre- and post-natally), that neurological and behavioural effects in the young may occur at low levels of exposure, manifesting at later stages in life, and that there is also the potential for transgenerational effects to occur.

3.2 Summary of Human Health Effects from Pesticides

The potential for the health of children to be affected by pesticides is undeniable.

Toxicity studies suggest that young, developing animals are particularly susceptible to adverse effects from pesticides. Animal studies also suggest that the effects of pesticides may be transmitted from generation to generation.

Children are likely particularly susceptible to the acute and chronic effects of pesticides because of their immature systems, long period of development and their unique behaviour that brings them into greater contact with sources of pesticides.

Most data on human health effects come from studies of those who handle pesticides, or from farming communities. Except for clinical information from accidental exposures, there are few epidemiological studies that specifically examine exposures to pesticides in children.

Depending on the specific pesticide and duration and timing of exposure, pesticides have been associated with a variety of health outcomes in people. There is an association between pesticide exposure and **reproductive effects** such as decreasing fertility in both males and females, as well as increased risk of spontaneous abortion. **Chromosomal abnormalities** have been observed after exposure to some pesticides and this also has implications for reproduction.

Developmental problems, including appearance of certain birth defects, *in utero* growth retardation and low birth weight have also been observed. There is recent startling evidence of **neurobehavioural** deficits in Mexican children heavily exposed to pesticides, confirming data from animal studies. There appears to be a higher risk for some **childhood cancers** such as

leukemia and brain tumours associated with prenatal and early exposure to certain pesticides.

In general, epidemiological studies are plagued by methodological and analytical problems that limit how reliably we can link effects in humans from pesticides, especially from low-dose, chronic exposures.

When we assess the effects of pesticides on animals in the lab and the wild, there are other outcomes that are of concern, such as the potential for endocrine disruption, neurobehavioural problems and immune system effects.

4.0 PESTICIDE REGULATION - MAIN CONCLUSIONS

The regulatory half of the Pesticides Case Study sets out how determinations are made regarding pesticide safety, with a particular focus on children's health. It provides a detailed review of the Pest Management Regulatory Agency's (PMRA) registration process for new products, the re-evaluation of existing or currently registered products and the assessment of formulants or "inert" ingredients in pesticides. The case study also addresses issues of sustainable pest management, access to information and the PMRA's implementation of the federal government's Toxic Substances Management Policy.

The case study is far from being a comprehensive investigation of the complex pesticide regulatory system. Instead, it focuses on a number of issues that are critical to pesticide regulation and the protection of children's health. Even this limited focus proved difficult, however, as no comprehensive documents have been produced by the Pest Management Regulatory Agency (PMRA) regarding its risk assessment and management processes. Information concerning these processes is difficult to access and understand. At times, it appears contradictory. Lack of clarity on the application of risk assessment and risk management processes is of significant concern given the well-documented problems with the subjective nature of this evaluation and management tool. The additional and more fundamental shortcomings of risk assessment, including its inability to assess "real-world" combinations of chemicals in a child's environment or their cumulative or synergistic effects, have yet to be effectively addressed by any advocates or practitioners of risk assessment. The PMRA's failure to explicitly set out its risk assessment and risk management approach, in a format for public consumption, is a key criticism of the case study and a factor that limited its scope.

Nevertheless, detailed recommendations can be made with respect to improving the transparency and effectiveness of regulating pesticides to protect children's health. Indeed, many of the Case Study recommendations have to do with the detailed steps necessary to implement a wide range of unfulfilled government commitments with respect to pesticides management. These include the fact that the PMRA has so far failed to: fully implement the Toxic Substances Management Policy; develop a regulatory policy on formulants; develop a national compliance policy; develop a re-evaluation policy and a comprehensive program of pesticide re-evaluation; develop a

pesticide risk reduction policy; produce Proposed Regulatory Decision Documents (PRDD) for proposed registration, re-evaluation and special review decisions; create a national database on pesticide use; require mandatory reporting of adverse effects by registrants; support the integration of pest management with the broader goal of environmental sustainability including setting targets and establishing workplans for the reduction of pesticide use in all sectors.

4.1 The Environmental Commissioner's Report

The Pesticides Case Study investigation confirms and expands upon the findings in last May's *Report of the Commissioner of the Environment and Sustainable Development to the House of Commons*. That report included troubling criticisms of the federal government's ability to protect Canadians from the risks of toxic chemicals in general and the PMRA's regulatory management of pesticides in particular. The report was critical of the PMRA in many respects including identifying the existence of conflicts and lack of integration, cooperation or collaboration with other government departments, lack of public access to pesticides-related information and the long-identified problem of lack of effective or coordinated monitoring (of environmental fate, effects, etc.) to complement the federal research agenda for toxic substances, including pesticides.

The Commissioner also found that the PMRA procedures for applying risk assessment and risk management are inconsistent and sometimes in conflict with other government departments. Chapter Three of the Children's Health Project, (of which the Pesticides Case Study is a part), documents the shortcomings of risk assessment and the need to more effectively adopt a precautionary approach to the management of toxic substances, including pesticides. As the Commissioner's report notes, the Toxic Substances Management Policy is an over-arching tool which provides the federal government's most important basis for implementing a preventative and precautionary approach to harmful pesticides and industrial chemicals. Although limited progress has been made, neither the PMRA, nor any other federal government department, has adequately implemented this policy.

The lack of adequate resources in PMRA and other departments alongside increased demands and increased private sector influence over research agendas were also noted as problems for the federal government's management of toxic chemicals, including pesticides.

The Commissioner's review of the federal government's 13-year-old commitment to pesticide re-evaluation found the actions of the PMRA to be largely inadequate and concluded that no assurance exists that Canadians are not being exposed to unacceptable risks from pesticides needing to be re-evaluated.

5.0 RECOMMENDATIONS

5.1 The *Pest Control Products Act*

1. While the *Pest Control Product Act's* core test for judging the acceptability of a pesticide (*unacceptable risk of harm*) appears sound, it has never been defined, nor has a process been

developed to guide decision-makers in the determination of acceptability. This omission is a critical flaw in the pesticide regulatory system that precludes the consistent application of a transparent test and should be addressed. An essential amendment to the Act, to complement Recommendation 5 below, is to designate persistent and bioaccumulative substances as presenting an unacceptable risk of harm.

2. The *Pest Control Products Act* should be amended to include a requirement to act in a precautionary manner, for example, when the weight of evidence points to the potential for “unacceptable risk of harm”. In keeping with this approach, Canada should follow Sweden’s lead with legislative amendments to specify inherent characteristics of pesticides that justify de-registration including criteria such as very high acute toxicity, endocrine disruption, probable human carcinogenicity, and neurotoxicity all of which should be considered synonymous with “unacceptable risk of harm”.

3. To more effectively implement Recommendations 6 - 31 below, the PMRA should publish a guideline to make its risk assessment and risk management process more transparent. The guideline should include detailed descriptions of its decision-making process including the manner in which children's health interests are taken into account. It may be necessary that the guideline be legislated in the form of a regulation under the *Pest Control Products Act*, in order to ensure that it is implemented.

4. The public should be placed on an equal footing with industry regarding the appeal of a registration decision. To do so, the public must be granted the authority to challenge the approval for registration of pest control products.

Note that several additional recommendations noted in the sub-sections below will involve additional amendments to the *Pest Control Products Act*.

5.2 PMRA Implementation of the Toxic Substances Management Policy

5. The PMRA should fulfill its commitment to incorporate the TSMP in pesticide regulation. This activity should include immediate bans (or de-registrations) on pesticides which are persistent and bioaccumulative (Track 1 substances) without wasting time and resources on re-evaluation. In keeping with this approach, the PMRA should immediately revise its TSMP Implementation Policy to eliminate the ability to register Track 1 pesticides.

5.3 The Registration Process: New Products

5.3.1 The Risk Assessment Process: Hazards

6. The PMRA should set out exactly how its two-tiered system of testing requirements functions. The trigger points for additional testing requirements should be made explicit.

7. There is a need for a detailed examination of the toxicity tests required by the PMRA in order to assess their adequacy. An investigation should be undertaken regarding whether the PMRA

requires testing for all potential endpoints and whether the tests that are required are adequate to gauge the risk of causing these endpoints.

8. Several toxicity tests that are currently conditionally-required should become standard requirements. Such tests should include evaluation of developmental neurotoxicity effects in young animals, which are particularly important for gauging risks to children's health. Similarly, tests for endocrine disruption that are protective of children should be made a standard PMRA test requirement.

9. The PMRA should consider the potential effects on human health of occupational/bystander and food/drinking water exposures on an aggregated basis.

10. The PMRA should consider the potential effects on human health of cumulative exposures to pesticides that act via common mechanisms of toxicity.

11. The PMRA should describe how it chooses a No Observed Adverse Effect Level (NOAEL) for occupational/bystander assessments and food residue assessments from the available alternatives.

12. The PMRA should set out how it determines which uncertainty factors to apply to the occupational/bystander and food residue NOAELs.

13. The PMRA should adopt a requirement similar to that found in the U.S. *Food Quality Protection Act*, mandating the application of an uncertainty factor with a minimum value of 10 in order to account for potential pre- and post-natal developmental toxicity and the incompleteness of toxicity and exposure data for children. The uncertainty factor could have a higher value in situations of relatively high uncertainty regarding toxicity and children's exposure.

14. The PMRA should explain precisely how it incorporates considerations regarding the increased sensitivity of the young and pregnant women into its risk assessments and should set out under which conditions it considers additional protection for these groups to be warranted.

15. The PMRA should set out precisely how its risk assessments are undertaken for potentially cancer-causing pesticides.

5.3.2 The Risk Assessment Process: Exposure

16. The PMRA should set out which factors it considers when making determinations regarding how large the ratio between the NOAEL for the most sensitive test species and the Expected Environmental Concentration (EEC) must be in order for the risks associated with a pesticide to be judged acceptable, as well as their relative weight, and the manner in which they are applied.

5.3.3 Value Assessment

17. The PMRA should set out how the results of its value assessment are used in the regulatory

decision-making process.

5.3.4 Maximum Residue Limits (MRLs)

18. Pesticide intake via soil and dust should be included in exposure estimates.
19. The PMRA should consider cumulative exposure to multiple pesticides that act via similar mechanisms of toxicity in its risk assessments.
20. The PMRA should ensure that the negotiation of MRLs between trading partners is a transparent process and that the strength of Canada's MRLs is not compromised.

5.3.5 Use Restrictions

21. In some cases, pesticide label instructions and restrictions are heavily relied upon in the management of pesticide risk to human and environmental health. Given the importance of label compliance, the PMRA should improve its inspection and enforcement operations to ensure appropriate pesticide use. The PMRA must not hesitate to apply the full range of enforcement penalties that are available to it, in order to guarantee compliance. Enhanced enforcement should be guided by a national compliance policy, which the PMRA committed itself to develop in its 1994 *Government Proposal for the Pesticide Management Regulatory System*.

5.4 Existing (Currently-Registered) Pest Control Products

22. The PMRA should expeditiously complete on-going re-evaluations including several that were initiated close to 20 years ago, such as for pentachlorophenol.
23. The PMRA should fulfill its commitment to establish a comprehensive pesticide re-evaluation and special review policy that includes responsibilities, methods for reporting and systems of accountability. The special review process should clearly set out the conditions necessary to trigger a special review. The PMRA should establish a re-evaluation program that sets out priorities and firm deadlines.

5.5 Formulants

24. The PMRA should expeditiously fulfill its commitment and complete development of its policy on formulants. The PMRA should release its policy to the public for comment and revision. Once completed, the PMRA should effectively implement and enforce its policy. The policy should set out how the PMRA will use the Environmental Protection Agency - United States (EPA) formulant classification system and toxicological database. The policy should also include an explicit enumeration of rigorous testing requirements for new and non-EPA-listed formulants. These requirements should be effectively enforced.
25. The PMRA should immediately complete its assessment of formulants in Canadian-registered pesticides in order to determine which are on the EPA lists and which are not. This

assessment is a vital precursor to effective pesticide regulation.

26. The PMRA should more effectively regulate the use of List 3 formulants of known or suspected toxicity. The PMRA should aggressively investigate the safety of List 3 formulants that truly are of unknown toxicity. In accordance with the precautionary principle, use of these formulants should be prohibited until their potential effects are understood.

27. All formulants should be listed on pest control product labels. The requirement to include List 1 substances on product labels should be more aggressively enforced.

28. The PMRA should make active use of the re-evaluation process to assess the safety of formulants that until now, have not been rigorously considered.

29. The PMRA should be granted legislative authority to demand formulant composition information from registrants. It is unacceptable that acquisition of this information is contingent on the good will of U.S. formulant suppliers.

30. The PMRA should expedite its work on the identification and risk assessment of non-EPA-listed formulants that are present in products registered in Canada. Pesticide registrants should be required to provide the PMRA with adequate data to assess the toxicological hazard of such formulants.

31. In his next report, the Commissioner of the Environment and Sustainable Development should investigate the adequacy of PMRA measures to ensure the safety of pest control product formulants.

5.6 Sustainable Pest Management

32. The PMRA should develop a pesticide reduction policy and should apply its policy to all PMRA decisions and activities.

33. The PMRA should reassess its Integrated Pest Management (IPM) program and make the establishment of sustainable agricultural practices the goal of this program. The program should have, as its focus, the reduction of chemical pesticide use. IPM considerations should be integrated into all stages of pesticide decision-making including a consideration, in the registration process, of whether lower risk or non-chemical alternatives exist, in some cases preempting the need for new registrations. Once registered, pest control product use should be guided by the principles of integrated pest management.

34. The PMRA should do more to facilitate the widespread adoption of IPM. The PMRA should develop a national policy, with clear goals, and a sustainable funding program in order to fulfill this goal.

5.7 Public Access to Information

35. The PMRA should ensure that the public has access to basic information that is essential to an understanding of the risks posed by pesticide exposure. The PMRA should disclose all pest control product ingredients and should provide access to all information upon which registration and other regulatory decisions are based. If necessary, the public health and environmental protection provisions in the *Access to Information Act* should be invoked. Public notification mechanisms regarding the initiation and status of new regulatory decisions should also be developed.

36. The PMRA should fulfill its commitment regarding Proposed Regulatory Decision Document (PRDD) production, making the documents as comprehensive as possible. The PMRA should clearly set out its policy for the incorporation of public comments and concerns regarding PRDDs.

5.8 Research and Monitoring

5.8.1 The Fate and Effects of Pesticide Use

37. The PMRA and its research and monitoring counterparts should establish and implement a plan for the collaborative gathering, sharing and use of vital pesticide information.

5.8.2 Adverse Effects Monitoring

38. The federal government should fulfill its commitment and legislate an adverse effects reporting requirement that explicitly includes information regarding the adverse effects of pesticide exposure on children.

5.8.3 Pesticide Use Database

39. The PMRA should promptly establish an enforced pesticide sales and use reporting requirement and a pesticide database. The database should be organized by active ingredient and should include detailed information regarding the quantities and locations of pesticide sales and use. Particular emphasis should be placed on reporting information relevant to assessing the effects of pesticide use on children. This information should inform pesticide regulatory decision-making.

5.9 The Workplace Hazardous Materials Information System (WHMIS)

40. The anomalous situation of WHMIS requirements not being applied to pesticides requires correction. Because of the possible transgenerational effects on the children of occupationally-exposed parents, WHMIS requirements are important not only to workers, but also to their children. WHMIS requirements for Material Safety Data Sheets (MSDSs) must be applied to pesticide suppliers for pesticides intended for use in the workplace. Pesticide suppliers should also be required to disclose the presence of formulants, and pesticide labels should conform to

WHMIS standards.

5.10 Political Will and Funding

41. In recognition of the greater exposure and sensitivity in children to the toxic effects of pesticides, the federal government's recently established National Children's Forum must allocate the necessary resources to honour longstanding domestic and international commitments to improving legal and policy tools, including application of the precautionary principle, to protect children from toxic substances, including pesticides.

42. The many recommendations noted above have significant resource implications in six major areas, including: 1) legislative amendments; 2) additional requirements in risk assessment and risk management procedures; 3) the re-evaluation of existing pesticides; 4) research and monitoring; 5) inspection and enforcement; and 6) development/refinement of guidelines and policy in key areas including risk assessment and risk management, the Toxic Substances Implementation Policy, formulants, integrated pest management, etc. Accordingly, for the upcoming federal budget, the PMRA should be required to prepare a detailed accounting of the resources necessary to implement these recommendations including an indication of short, medium and longer term priorities.

43. In setting priorities for the implementation of unfulfilled commitments and other necessary objectives for improving the pest management regulatory system, immediate attention and resources should be given to re-evaluation of existing pesticides, implementation of the precautionary principle, development of a formulants policy, and development and promotion of sustainable pest management alternatives.

44. In the establishment of an adequate and guaranteed resource base for the pesticide re-evaluation program, funding for re-evaluation must not be made contingent on the generation of funds from efficiencies created in other areas.

45. In the development of a policy on formulants, the PMRA should not be guided in the development of its formulant policy solely by the costs that would be borne by registrants for potential amendments to their registrations.



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MEDIA RELEASE

New Study Warns of Children's Health Effects from Pesticides and Calls for Urgent Changes to Pesticides Regulatory System

Ottawa (EMBARGOED UNTIL: 11:30 a.m., December 1, 1999). A new study released today by the Ontario College of Family Physicians (Environmental Health Committee) and the Canadian Environmental Law Association (CELA) gives an urgent warning about the health effects in children from pesticide use. According to the study, the health of Canadian children is at risk because of the inherent weaknesses of the Canadian regulatory system governing pesticides and the lack of capacity to implement existing laws and policies.

The study examined the impact of pesticides on children because children are relatively more often exposed to pesticides compared to other groups. Many exposure routes exist for children from everyday applications in their homes and yards through to dietary exposure to residues from agricultural application.

"Our study warns that every parent should be concerned about exposure of their children to pesticides," states Dr. Loren Vanderlinden, a co-author of the study working for the Ontario College of Family Physicians. "The potential for children's health to be affected by pesticides is undeniable. Although more research needs to be done, this does not exonerate pesticides as human toxins, especially when one considers that children are far more vulnerable to pesticides than adults. Not only is there potential for harm, but in all likelihood some Canadian children are now enduring the negative effects of pesticides."

For instance, evidence suggests that the immune systems of Inuit children are being jeopardized by exposure to many persistent chemicals, including DDE (a by-product of the pesticide DDT) through their mothers' breast milk and through their traditional diet. Kids in agricultural areas may also be at risk of cognitive deficits (nervous system damages) without obvious clinical symptoms of pesticide exposure. Pesticide use in the home puts children and pregnant women and their babies at risk of health problems, including cancer and reproductive problems in later life. Children from poorer families, living in older housing, and children with chemical sensitivities or immune system problems are also more likely to be affected by pesticides. Lastly, many commonly used pesticides can be detected in our food supply, frequently at levels that would not be safe for young children. "We believe that the cumulative effects of being exposed to many different pesticides over a lifetime represents an unacceptable risk to all Canadian children," said Dr. Vanderlinden.

"The sad message is that children's health is being impacted because of our inadequate regulatory system, a system the federal government promised to fix as far back as 1994. Our study finds that

the great majority of prior commitments remain unfulfilled. Canadians don't really have a regulator. Rather, industry has a customer service department. The message is not only that children are being impacted by pesticides but that the federal government is knowingly refusing to act to make legislative changes and spend the necessary resources. What can be more important than the health of young Canadians?" stated Kathleen Cooper, co-author of the study for CELA.

The study provides 45 recommendations covering a broad range of regulatory issues, including:

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- Implementation of the Federal *Toxic Substances Management Policy* including immediate bans (or de-registrations) on pesticides which are persistent (stay in the environment a long time) and bioaccumulative (accumulate in fat cells) without wasting resources on re-evaluation.
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The pesticides case study, which is part of a larger study program by the two sponsoring organizations, is to be presented today before the federal Parliamentary Standing Committee on Environment and Sustainable Development which is examining pesticide regulation in Canada.

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CANADIAN ENVIRONMENTAL LAW ASSOCIATION
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COMMUNIQUÉ DE PRESSE

Une nouvelle étude sonne l'alerte concernant les effets des pesticides sur la santé des enfants et elle fait appel pour des modifications urgentes au système de réglementation des pesticides

Ottawa (EMBARGO JUSQU'À: 11h30, 1er décembre, 1999). Une nouvelle étude, publiée aujourd'hui par le Ontario College of Family Physicians (Comité d'hygiène de l'environnement) et par l'Association canadienne du droit de l'environnement, lance une mise en garde urgente concernant les effets de l'usage des pesticides sur la santé des enfants. Selon, l'étude, la santé des enfants canadiens est en danger étant donné les faiblesses inhérentes du système réglementaire canadien régissant les pesticides et le manque de capacité de mettre en exécution les lois et les politiques existantes.

L'étude a examiné l'impact des pesticides sur les enfants parce que les enfants sont en général plus souvent exposés aux pesticides comparé à d'autres groupes. Il existe plusieurs voies d'exposition pour les enfants; utilisations diverses et multiples au foyer, dans la cour et jusqu'aux expositions dans le régime alimentaire dues aux utilisations agricoles.

"Notre étude avertit tous les parents qu'ils devraient s'inquiéter de l'exposition de leurs enfants aux pesticides," déclare D. Loren Vanderlinden, une co-auteure de l'étude qui travaille pour le Ontario College of Family Physicians. "Le potentiel que la santé des enfants soit affectée par les pesticides est maintenant indéniable. Quoiqu'il est nécessaire de continuer la recherche, cela ne peut exonérer les pesticides en tant que toxines chez les humains, surtout lorsque l'on considère que les enfants sont beaucoup plus vulnérables aux pesticides que les adultes. Non seulement y-t-il la possibilité de dommages et de souffrance, mais il est fort probable que plusieurs enfants canadiens endurent déjà les effets négatifs des pesticides."

À titre d'exemple, les preuves à cet effet suggèrent que le système immunitaire des enfants Inuit est compromis par l'exposition à plusieurs produits chimiques persistants, y compris le DDE (un sous-produit du pesticide DDT), que l'on trouve dans le lait maternel et à travers leur diète traditionnelle. Les jeunes dans les régions agricoles peuvent également être en danger de déficits cognitifs sans pour autant avoir de symptômes cliniques évidents d'exposition aux pesticides. L'usage de pesticides à la maison met les enfants, les femmes enceintes et leurs bébés en danger d'avoir des problèmes de santé, y compris le cancer et des problèmes de reproduction plus tard dans la vie. Les enfants provenant de familles pauvres, qui vivent dans des logements plus anciens, ainsi que les enfants ayant des chemosensibilités ou des problèmes de système immunitaire, sont encore plus aptes à être affectés d'une manière disproportionnée par les pesticides. En dernier lieu, plusieurs des pesticides d'usage commun peuvent être détectés dans nos aliments et souvent à des niveaux qui ne seraient pas sécuritaires pour les jeunes enfants. "Nous croyons que les effets cumulatifs de l'exposition à plusieurs pesticides différents au cours de la durée d'une vie représentent un risque inacceptable pour tous les enfants canadiens," déclare D. Vanderlinden.

"La chose triste, c'est que la santé des enfants est en train d'être perturbée à cause de notre système réglementaire inadéquat, un système que le gouvernement fédéral avait promis de corriger dès 1994. Notre étude démontre que la grande majorité de ces engagements antérieurs n'a pas été respectée. Les Canadiens n'ont pas vraiment d'organisme de réglementation. Au lieu de ça, l'industrie a un département de service à

la clientèle. Le message ici, c'est que non seulement les enfants sont affectés par les pesticides, mais aussi que le gouvernement fédéral refuse sciemment d'agir et de procéder à des modifications législatives et d'y consacrer les ressources nécessaires. Y a-t-il quelque chose de plus important que la santé des jeunes Canadiens?" déclare Kathleen Cooper, co-auteure de l'étude et membre de l'Association canadienne du droit de l'environnement.

L'étude met de l'avant 45 recommandations qui abordent une grande variété d'enjeux réglementaires, y compris:

- Modifications à la Loi sur les produits antiparasitaires. À titre d'exemple: clarifier le test de base pour juger de l'acceptabilité d'un pesticide; s'assurer d'utiliser l'approche de précaution lorsque le poids de la preuve suggère un potentiel inacceptable de risque de dommage, et; l'amélioration des droits des citoyens de faire appel d'une décision d'enregistrement.
- Mise en application de la Politique de gestion des substances toxiques du fédéral, y compris une interdiction immédiate (ou le désenregistrement) des pesticides qui sont persistants (qui demeurent longtemps dans l'environnement) et bio-accumulables (accumulables dans les cellules adipeuses) sans gaspiller d'autres ressources sur la réévaluation.
- Révisions du processus d'enregistrement des nouveaux produits, afin de s'assurer que l'on tient compte d'une plus grande gamme d'effets sur les enfants, y compris la neurotoxicité développementale, les perturbateurs du système endocrinien, ainsi que les effets des expositions cumulatives aux pesticides.
- Amélioration de l'inspection et de la mise en exécution par l'Agence de réglementation de la lutte antiparasitaire (ARLA) afin d'assurer un usage approprié des pesticides.
- Mise au point et mise en exécution par l'ARLA d'une Politique de gestion durable de la lutte antiparasitaire afin de réduire dans l'ensemble l'usage des pesticides.
- Améliorer l'accès public à l'information qui est essentielle pour comprendre les risques que représente l'exposition aux pesticides.

L'étude de cas sur les pesticides, qui fait partie d'un programme d'étude plus large parrainé par les deux organisations, sera présentée aujourd'hui devant le Comité permanent du Parlement fédéral sur l'Environnement et le développement durable qui examine présentement la réglementation des pesticides au Canada.

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MEDIA RELEASE

New Study Warns of Children's Health Effects from Pesticides and Calls for Urgent Changes to Pesticides Regulatory System

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For instance, evidence suggests that the immune systems of Inuit children are being jeopardized by exposure to many persistent chemicals, including DDE (a by-product of the pesticide DDT) through their mothers' breast milk and through their traditional diet. Kids in agricultural areas may also be at risk of cognitive deficits (nervous system damages) without obvious clinical symptoms of pesticide exposure. Pesticide use in the home puts children and pregnant women and their babies at risk of health problems, including cancer and reproductive problems in later life. Children from poorer families, living in older housing, and children with chemical sensitivities or immune system problems are also more likely to be affected by pesticides. Lastly, many commonly used pesticides can be detected in our food supply, frequently at levels that would not be safe for young children. "We believe that the cumulative effects of being exposed to many different pesticides over a lifetime represents an unacceptable risk to all Canadian children," said Dr. Vanderlinden.

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