SB

14

FISCAL NOTE

STATE OF ALASKA
2002 LEGISLATIVE SESSION

Fiscal Note Number:
Bill Version: SB 14
() Publish Date:

Revision Date/Time (Note if correction):
Dept. Affected: Environmental Conservation
Title: Tracking Pesticide Use
BRU: Environmental Health
Component: Laboratory Services
Sponsor: Senator Ellis
Requester: Senate Resources
Component No.: 2065

Expenditures/Revenues (Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below.

OPERATING EXPENDITURES	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008
Personal Services	227.1	227.1	227.1	158.3	158.3	158.3
Travel	8.0	8.0	8.0	8.0	8.0	8.0
Contractual	73.8	63.8	63.8	54.1	54.1	54.1
Supplies	4.0	4.0	4.0	3.0	3.0	3.0
Equipment	82.8	4.0	4.0	4.0	4.0	4.0
Land & Structures	0.0	0.0	0.0	0.0	0.0	0.0
Grants & Claims	0.0	0.0	0.0	0.0	0.0	0.0
Miscellaneous	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL OPERATING	**395.7**	**306.9**	**306.9**	**227.4**	**227.4**	**227.4**
CAPITAL EXPENDITURES	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
CHANGE IN REVENUES (1005)	**765.0**	**690.0**	**690.0**	**765.0**	**690.0**	**690.0**

FUND SOURCE (Thousands of Dollars)

1002 Federal Receipts	0.0	0.0	0.0	0.0	0.0	0.0
1003 GF Match	0.0	0.0	0.0	0.0	0.0	0.0
1004 GF	0.0	0.0	0.0	0.0	0.0	0.0
1005 GF/Program Receipts	395.7	306.9	306.9	227.4	227.4	227.4
1037 GF/Mental Health	0.0	0.0	0.0	0.0	0.0	0.0
Other (Specify Type--Do not abbreviate)	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	**395.7**	**306.9**	**306.9**	**227.4**	**227.4**	**227.4**

Estimate of any current year (FY2002) cost: 0.0
Check this box (X) if funding for this bill is included in the Governor's FY 2003 budget proposal:

POSITIONS

Full-time	4	4	4	3	3	3
Part-time	0	0	0	0	0	0
Temporary	0	0	0	0	0	0

ANALYSIS: *(Attach a separate page if necessary)*

See attached.

Prepared by: Janice Adair
Phone 269-7644
Division: Environmental Health
Date/Time 4/10/02 1:51 PM
Approved by: Kurt Fredriksson
Date 4/10/2002
Agency: Department of Environmental Conservation

SB 14 requires that DEC establish and manage a pesticide-reporting program that provides information on the individual application of certain pesticides as defined in regulations adopted under the bill.

The tracking system must identify the product, amount used, application rate, method, date applied, size of area treated, the location (street address) of the application, and the target organism. This data must be GIS based and easily accessible to the public through the Internet. The department is to prepare an annual report that summarizes the information that has been reported.

Additionally, a Pesticide Board is established to advise DEC on the development and implementation of the tracking system.

Two Environmental Specialists (an ES II and an ES III) will develop regulations, policies, procedures, outreach activities, prepare the annual report as well as staff and work with the Pesticide Advisory Board. The focus will be on helping the pesticide applicators come into compliance with the reporting requirements. A full time Environmental Technician will be required to input the data reported into the database and to manage the database system and reports.

An Analyst Programmer IV will oversee the development of the database and web site that will support the tracking system for 3 years.

The contractual line includes funding for training and preparation of outreach materials as well as $20.0 for a contract for the initial development of the GIS based data system in the first year. Subsequent years include $10.0 for a contract to assist with maintenance and needed upgrades to the system as technology changes.

Equipment costs in FY 2003 include the ordinary office equipment (desk, chair, and office furniture) for the new staff. The bulk of the costs are for the GIS workstations, ArcView license, W2000 server and related hardware and ArcView MapObjects Internet Map Server. $4.0 is included in subsequent years for equipment replacement and software upgrades.

Revenues are from the label registration and applicator certification fees. A $150.00 label registration fee will generate $690.0 based on an estimated 4,600 labels. Applicators would pay $75.00 ($25.00 per year) for a three-year certification. The certification fee, for approximately 1000 applicators, would generate $75.0 in FY 2003 and 2006.

Fees as established in this bill clearly generate more revenue than needed to operate the program described in SB 14. However when Oregon instituted this law, there was a 20% reduction in the number of registrations and licenses. If that same reduction were to occur here, revenue would decrease by $153.0 to $612.0 but still cover the projected cost of the tracking program.

Personal Services New Position Detail

Department of Environmental Conservation
SB 14 Fiscal Note

Scenario: DEC 2003 Fiscal Notes (2321)
Component: Laboratory Services (2065)
BRU Name: Environmental Health (207)

PCN	Job Class Title	Time Status	Retire Code	Barg Unit	Location	Salary Sched	Range & Steps	Budgeted Months	Split / Count	Annual Salary	COLA	Premium Pay	Annual Benefits	Total Costs
18-#007	Analyst/Programmer IV	FT	A	GG	Palmer	1A	20 A	12.0		50,712	1,051	0	17,025	68,788

Justification:
Required to oversee development of database and website that will support the pesticide tracking system for 3 years, to implement SB 14.

Funding Detail:

1005	General Fund/Program Receipts	100.00%	68,788
	Total Funding:	100.00%	68,788

18-#008	Environmental Tech II	FT	A	GG	Palmer	1A	12 A	12.0		29,502	811	0	13,114	43,227

Justification:
Required to input data reported into the database, maintain database and reports, to implement SB 14.

Funding Detail:

1005	General Fund/Program Receipts	100.00%	43,227
	Total Funding:	100.00%	43,227

18-#009	Environmental Spec II	FT	A	GG	Palmer	1A	16 A	12.0		38,454	797	0	14,765	54,016

Justification:
Required for implementation of SB 14. Position will develop regulations, policies, procedures, outreach activities, prepare annual report, provide staff support and work with the Pesticide Advisory Board and focus on compliance issues.

Funding Detail:

1005	General Fund/Program Receipts	100.00%	54,016
	Total Funding:	100.00%	54,016

18-#010	Environmental Spec III	FT	A	GG	Palmer	1A	18 A	12.0		44,298	918	0	15,843	61,059

Justification:
Required for implementation of SB 14. Position will develop regulations, policies, procedures, outreach activities, prepare annual report, provide staff support and work with the Pesticide Advisory Board and focus on compliance issues.

Funding Detail:

1005	General Fund/Program Receipts	100.00%	61,059
	Total Funding:	100.00%	61,059

Note: If a position is split, an asterisk (*) will appear in the Split/Count column. If the split position is also counted in the component, two asterisks (**) will appear in this column.

Personal Services New Position Detail

Department of Environmental Conservation
SB 14 Fiscal Note

Scenario: DEC 2003 Fiscal Notes (2321)
Component: Laboratory Services (2065)
BRU Name: Environmental Health (207)

Component Summary:

Total New Positions: 4

Fund	Description	Fund Percent	Fund Amount
1005	General Fund/Program Receipts	100.00%	227,090
	Total Funding:	100.00%	227,090

Note: If a position is split, an asterisk (*) will appear in the Split/Count column. If the split position is also counted in the component, two asterisks (**) will appear in this column.

22-LS0280\C
Lauterbach
4/9/02

CS FOR SENATE BILL NO. 14( )

IN THE LEGISLATURE OF THE STATE OF ALASKA

TWENTY-SECOND LEGISLATURE - SECOND SESSION

BY

Offered:
Referred:

Sponsor(s): SENATOR ELLIS

A BILL

FOR AN ACT ENTITLED

"An Act relating to pesticide use; relating to program receipts collected by the Department of Environmental Conservation for registrations and licenses relating to pesticides; and providing for an effective date."

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

* Section 1. AS 37.05.146(b)(4) is amended by adding a new subparagraph to read:

(AAA) receipts of the Department of Environmental Conservation under AS 44.46.025(e) and AS 46.03.320(b);

* Sec. 2. AS 44.46.025 is amended by adding a new subsection to read:

(e) The department may charge a registration fee of $150 for a pesticide label for a pesticide product registered for use in the state.

* Sec. 3. AS 46.03.320(b) is amended to read:

(b) The department may provide by regulation for the licensing of private applicators of restricted-use pesticides and for persons engaged in the custom, commercial, or contract spraying or application of pesticides and broadcast chemicals.

The license must specify each category of use that is authorized for the person holding the license. A person engaged in the custom, commercial, or contract spraying or application of pesticides and broadcast chemicals may, by regulation, be required to secure a surety bond or liability insurance. **The department shall establish and collect a fee for a license issued under this subsection. The fee shall be $25 times the number of years for which the license is valid when issued, regardless of how many categories of use are authorized under the license. The department shall review the licensing fee every two years and recommend changes in the fee to the legislature when considered appropriate.**

* **Sec. 4.** AS 46.03 is amended by adding a new section to read:

Sec. 46.03.325. Notice of commercial pesticide spraying. (a) Except as provided in (e) of this section, a person who engages in the business of applying pesticides shall give written notice as provided in this section every time that the person is going to spray a pesticide out of doors unless the spraying is covered by the notice provisions of AS 46.03.330.

(b) The notice required under this section shall be posted

(1) on the property to be sprayed and on each residence or commercial building within one-quarter mile of the site where the spraying will occur if the residence or commercial building is located on property that is contiguous to the property to be sprayed;

(2) at least 48 hours before the spraying and not more than 72 hours before the spraying; and

(3) in a manner that is reasonably calculated to provide actual notice to the persons living or doing business on property contiguous to the property to be sprayed.

(c) The notice required under this section must include

(1) the trade name of each pesticide;

(2) the chemical name, to the extent available, of the principal active ingredients in each pesticide;

(3) the exact date and approximate time that the pesticide will be sprayed;

(4) the name, address, and telephone number of the person doing the spraying;

(5) a warning that the pesticide is or may be harmful; and

(6) a statement of recommended precautions.

(d) The department shall provide samples of the notice required under this section. Substantial compliance with the sample notices constitutes compliance with this section.

(e) Notwithstanding other provisions of this section, notice is not required under this section if the pesticide will be applied only to the exterior surface of a building and if the pesticide will not be applied to plants or animals.

* **Sec. 5.** AS 46.03 is amended by adding new sections to article 5 to read:

Sec. 46.03.335. Pesticide tracking system. (a) The department shall establish and implement a pesticide use tracking system. In developing the system, the department shall ensure that, to the extent practicable, the data submission process uses existing record-keeping requirements, automates the reporting system, and encourages electronic submission of data. The department shall strive for a system that is efficient and cost-effective and that reveals the location and extent of pesticide use to the extent practicable.

(b) The department may establish regulations for the submission and dissemination of accurate data for the tracking system, including regulations

(1) for data submission timing, which may differ for different categories of pesticide applicators;

(2) regarding which pesticides are subject to the reporting requirements of this section, based in part on the frequency of pesticide application; in adopting regulations under this paragraph, the department shall seek and consider advice from the Pesticide Advisory Board; the department may not include sanitizers or disinfectants within the reporting requirements of this section; and

(3) regarding how location information is to be submitted and reported, which may differ for different categories of pesticide applicators; the department shall require enough specificity about the location of pesticide applications so that aggregation of the data into hydrological units, as defined by the United States

Geological Survey, is enabled without permitting identification of specific pesticide applicators in the aggregated data.

(c) The system established under this section must require all licensed custom, commercial, or contract pesticide applicators in the state to report to the department the following information pertaining to the professional use of the pesticides that the department has determined are subject to the reporting requirements of this section:

(1) pesticide product name and United States Environmental Protection Agency registration number;

(2) total amount of product applied;

(3) identification number assigned to the reporting entity by the department;

(4) size in acres or square feet of the area treated;

(5) application rate in volume or weight of product for each area treated;

(6) location of application;

(7) date of application;

(8) application method, including equipment, device, or apparatus used; and

(9) target organism.

(d) The department may conduct a statistically valid household pesticide use survey to acquire data that would complement information received under (c) of this section.

(e) A licensed custom, commercial, or contract pesticide applicator shall retain the records upon which the information submitted under (c) of this section is based for three years after submitting the report to the department.

(f) In addition to other civil or criminal penalties that may be applicable, the department may impose a civil penalty on a licensed custom, commercial, or contract pesticide applicator who fails to comply with a reporting requirement established under this section. The penalty may be up to $1,000 for the first failure to comply and up to $2,000 for a second or subsequent failure to comply.

Sec. 46.03.340. Availability of information to the public. (a) The data in

the tracking system developed under AS 46.03.335 shall be made accessible by the department to the general public through the Internet and shall be available from the department on disk and in printed format upon request. The department shall aggregate the data released under this section so that the anonymity of specific pesticide applicators and their clients is protected. The database shall be made accessible in a way that reasonably provides the public with understandable and useful information about the use of pesticides at local, regional, and state levels. The department shall ensure that pesticide use information in the database is accessible to researchers, pesticide users, workers, government agencies, and the public in a timely and user-friendly manner.

(b) On or before June 30 of each year, the department shall publish an annual report, available to the public, that includes

(1) a detailed summary of the information reported to the department under AS 46.03.335;

(2) an analysis of the data, including known reasons for any increases or decreases in pesticide use over time and within categories such as pesticide type, applicator type, and location; and

(3) a description of the improvements made in the database or data collection process during the fiscal year that have made the information in the database more accessible to the public or have integrated the database with other information or data bases maintained by the department.

Sec. 46.03.345. Pesticide Advisory Board. (a) There is established a Pesticide Advisory Board consisting of seven members appointed by the governor to staggered three-year terms as follows:

(1) one member who is a pesticide applicator or pesticide dealer who is required to be licensed by the department;

(2) one member who is not employed by or the agent of a licensed pesticide applicator or pesticide dealer and who has demonstrable expertise in fisheries biology or fish toxicology;

(3) one member who is not employed by or the agent of a licensed pesticide applicator or pesticide dealer and who has demonstrable expertise in wildlife

biology or wildlife toxicology;

(4) one member who is employed by or is an agent of a public water supplier;

(5) one member who is an agent or specialist with the cooperative extension service, University of Alaska;

(6) one member who is not employed by or the agent of a licensed pesticide applicator or pesticide dealer and who has some expertise in public health issues, particularly children's health issues; and

(7) one public member.

(b) The Pesticide Advisory Board shall

(1) advise the department on the development and implementation of the pesticide use tracking system required under AS 46.03.335, including advice on ways to make it as easy as practicable for persons to comply with the reporting requirements of AS 46.03.335;

(2) advise the department on the development and implementation of research and information-gathering mechanisms related to household use of pesticides, especially the location of intended use, purpose, and amounts;

(3) recommend to the department methods for increasing public awareness of less toxic alternatives to pesticides;

(4) solicit public input on, and recommend to the department, ways to improve the reporting and enforcement process and on ways to improve the accessibility and utility of the data generated by the tracking system;

(5) recommend to the department ways to address the problem of persistent organic pollutants in the state; and

(6) recommend to all state agencies and the University of Alaska ways in which they could modify their practices with regard to pest control so that prevention of pest populations is emphasized through structural and procedural modifications that reduce the potential habitat of pests, pesticides will be used as a last resort, the least hazardous pesticide will be used when pesticide use is needed, and pesticide use will be targeted to areas that are not accessible to people, especially children.

(c) A member appointed under this section is eligible for reappointment, but a member may not serve for more than two consecutive terms. If there is a vacancy, the governor shall make an appointment to become immediately effective for the unexpired term. A member serves at the pleasure of the governor.

(d) The Pesticide Advisory Board shall select one of its members as chair and another as vice-chair for the terms and with the duties and powers considered necessary by the board for the performance of the functions of the Pesticide Advisory Board.

(e) A majority of the members of the Pesticide Advisory Board constitutes a quorum for the transaction of business. The Pesticide Advisory Board shall meet at a place and time determined by the board. The board may also meet at other times and places specified by the call of the chair or of a majority of the members of the board.

(f) Notwithstanding AS 39.20.180, a member of the Pesticide Advisory Board is not entitled to reimbursement of transportation expenses and payment of per diem allowances.

Sec. 46.03.350. Technical assistance. (a) In order to develop and implement the pesticide use tracking system required under AS 46.03.335, the department and the Pesticide Advisory Board may request technical assistance from any public or private agency with expertise in the subject matter.

(b) The department may develop a program to provide technical assistance to pesticide applicators who are required to report under AS 46.03.335. The department may develop and provide computer software to licensed pesticide applicators to facilitate reporting for the tracking system.

Sec. 46.03.355. Department's use of the tracking system. The department shall use the pesticide use database developed under AS 46.03.335 in carrying out the department's responsibilities for the protection of water quality, other environmental protection, worker health and safety programs, public health protection programs, pesticide-related illness surveillance programs, risk assessment and pest management research and control programs. The department shall cooperate with and advise other state agencies concerning their programs that may be affected by the use of pesticides.

* **Sec. 6.** The uncodified law of the State of Alaska is amended by adding a new section to

read:

REGULATIONS. The Department of Environmental Conservation may proceed to develop and adopt regulations to implement this Act. The regulations take effect under AS 44.62 (Administrative Procedure Act), but not before January 1, 2003.

* **Sec. 7.** The uncodified law of the State of Alaska is amended by adding a new section to read:

REPORT. The Pesticide Advisory Board shall submit a report to the governor by January 1, 2005, concerning the board's recommendations for action related to its areas of jurisdiction under AS 46.03.345(b). The board shall notify the legislature that the report is available.

* **Sec. 8.** Except as provided in sec. 9 of this Act, this Act takes effect January 1, 2003.

* **Sec. 9.** Section 6 of this Act takes effect immediately under AS 01.10.070(c).

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From the office of Senator Johnny Ellis

To: **Senator John Torgerson, Chair, Senate Resources Committee**
Darwin Peterson, Senate Resources Staff

From: **Senator Johnny Ellis, Senate Minority Leader**

Date: **4/11/2002**

Re: **Information for SB 14 for Senate Resources Committee hearing April 12**

This packet includes necessary information for Senate Bill 14, An Act Relating to Pesticide Use, for inclusion in the committee packet for Friday, April 12.

A copy of a blank CS that we hope will be adopted is included. The changes from the old version of SB 14 to this current CS include two major changes and smaller changes made at the request of House members when the companion bill, HB 66, was heard earlier this session.

The two major changes are that the GIS component has been removed and notice of pesticide applications will now be required. The GIS component was removed to reduce the costs to the state. A section requiring notice of outdoor pesticide applications, modeled after Municipality of Anchorage regulations, has been added to ensure that individuals know when pesticides are being used around their homes and places of business. The other changes made following the hearing in House Labor and Commerce do not reflect changes in the intent of the legislation, but are clarifications that make the language in the bill more concise.

The fiscal note for the current version of SB 14 is included. If the CS is adopted a new fiscal note will be needed.

We have included background information regarding the issues of pesticide use and safety and have also attached newspaper articles from the last few years that can provide a chronology of what has been happening in Alaska to further this legislation, first introduced as HB 356 in the House in February 2000.

We, as policy makers, have an obligation to create laws that protect Alaskans. SB 14 is an important first step in accomplishing this.

ALASKA STATE LEGISLATURE

Senate Rules Committee
•
Senate Judiciary Committee
•
Department of Law
Budget Subcommittee

While in Session
State Capitol, Rm. 9
Juneau, Alaska 99801
(907) 465-3704
Fax: (907) 465-2529
•
While in Anchorage
716 West 4th Ave., Ste 440
Anchorage, Alaska 99501
(907) 269-0169
fax: (907, 269-0172

SENATE MINORITY LEADER
JOHNNY ELLIS

Sponsor Statement
SB 14

"An Act relating to pesticide use."

Alaskans lack the necessary information to safeguard their own exposure to pesticides. Certified pesticide applicators (CPAs) are required to keep documentation on restricted use pesticides, but they are not required to report even this small percentage of total pesticide use. The limited documentation kept is extremely difficult for the public to access. According to a recent survey, 93% of voters favor required disclosure and reporting of pesticide use in Alaska.

SB 14 and HB 66 make the commercial use of pesticides in public areas -- such as schools, parks, and municipal buildings -- known to the public. This bill creates a mechanism to track information necessary for the study of the suspected link between pesticides and increasing incidences of cancer (including in children), respiratory illnesses, reproductive failure, and allergies.

SB 14 specifically:

- Charges pesticide manufacturers from outside a $150 registration fee per label.
  Alaska is the only state that does not charge such a fee to manufacturers before they are allowed to sell their product in our state.
- Establishes a $25 per annum registration fee for certified pesticide applicators.
  The Department provides training and licensure, but does not yet have the authority to charge a fee.
- Requires notice of commercial pesticide spraying.
  Commercial applicators will be required to provide notice of pesticide applications that take place outdoors to nearby residents and business owners.
- Requires CPAs to report pesticide use to DEC.
  They are currently required to collect the information, but not required to report it. Information that would be reported is currently found on invoices.
- Mandates DEC establish a pesticide tracking system readily available to the public.
  DEC will make information available via the internet and will prepare an annual report on pesticide use in Alaska (while maintaining privacy of individuals).
- Establishes a seven-member Pesticide Advisory Board to advise the Department on implementation of tracking system.
  This is a volunteer board, which will incur no expenses to the State.

The tracking system will be fully funded by the $150 manufacturer's registration fee and the CPA licensure fees. Information collected by this tracking system will enable researchers and public officials the opportunity to create policy that reduces public exposure to potentially hazardous chemicals, protects water quality, and keeps pesticides out of subsistence foods.

Why is Senate Bill 14 needed?

1. Large amounts of pesticides are used every year in urban and rural Alaska, including use in schools, parks, agricultural lands, grocery stores, public buildings, homes, gardens, and elsewhere.

2. Pesticides are linked to a variety of health problems, including cancer, developmental disorders, reproductive failure, birth defects, allergies, and asthma.

3. Despite these known risks, we have no accurate information on which pesticides are used, where and where pesticides are used, and in what amounts.

4. In order to make informed and effective policy decisions to protect water quality, public health, and subsistence foods, Alaskans need reliable information on pesticide use.

5. In 2001, there were 4571 pesticide labels (individual pesticide products) registered for sale and use in the state of Alaska.

6. Alaska is the ONLY state that does not collect registration fees on pesticides registered for sale and use.

What will Senate Bill 14 mandate?

1. This bill will require those who use pesticides for commercial and contract purposes to provide notice to members of the public regarding applications of pesticides outdoors and to report basic information regarding where, when, quantity used, and name of product used to the Department of Environmental Conservation.

2. The Department of Environmental Conservation is required to make the reporting process convenient for those required to report, and to make the information available to the public, researchers, and public officials in a timely manner. Reports will protect privacy of both applicators and their clients.

3. The bill establishes a seven member Pesticide Advisory Board that includes representation from a pesticide dealer or applicator, a fisheries biologist, a wildlife biologist, a public water supplier, an agent of the Cooperative Extension Service, a children's health advocate, and a member of the public.

4. The bill requires a registration fee be collected for pesticide products registered for commercial sale in the state of Alaska and allows for the charging of licensing fees.

How will the information collected by used?

1. Effective public policy relies on good science and good data. Pesticide use information will help public officials protect water quality, public health, and subsistence foods.

2. Because pesticides are designed to be toxic chemicals that kill living organisms and are widely used in our communities, the public has a right to know about the pesticides used around us.

Who Supports tracking pesticide use?

1. There is broad support for pesticide use reporting, including support from the medical community, public health officials, researchers, subsistence food users, parents, teachers, organic farmers, and environmental health advocates.

Comparison of Service Report/Reporting Requirements of SB 14

SB 14	Service Report
#1-requires reporting product name and EPA registration number	listed on Service Report as chemical and EPA reg #
#2-total amount of product applied	listed on Service Report as amount
#3-identification number assigned by Department	not currently found on Service Report
#4-size of area treated	listed on Service Report as area treated
#5-application rate for each area treated	listed on Service Report as two separate items-area treated and amount, this piece of information is just the amount used divided by the area treated, for example, 3 gallons per acre
#6-location of application	listed on Service Report as Job Address
#7-date of application	listed on Service Report as Service Date
#8-application method	listed on Service Report as method
#9-target organism	listed on Service Report under description, for example, rodents/silverfish/aphids, etc.

****** All items requested by DEC, with the exception of #3 (the identification number assigned by DEC) are currently found on the Service Report ********

In Anchorage: 277-7378
403 East Fireweed Lane
Anchorage, Alaska 99503
Fax: 277-2833

Statewide: 1-800-770-3383

AMERICAN PEST MANAGEMENT

#9 target organism

SERVICE REPORT

CD	DESCRIPTION	LAST SERVICE	FREQUENCY	STARTING TIME			SR NO.
	Rodents						

MAP	ROUTE OR TECHNICIAN	SERVICE DATE	SERVICE NOTES			
	818	3-17-98				$

#7 date of application

Romig J.H.

JOB CONTACT
JOB PHONE 271-0541
JOB ADDRESS 2500 [illegible] Dr.
P.O. NUMBER

#6 applicat location

#8 application method

#4 add size

METHOD	INSPECTOR	AREA TREATED	TARGET PESTS #9	COMMENTS
INSPECTION ( ) [illegible] ( ) [illegible]		( ) BEDROOMS	( ) ANTS	Added one bait station to Teachers Lounge next to fridges
( ) [illegible]		( ) BATHROOMS	( ) BEETLES	
( ) SPOT TREAT		( ) KITCHEN	( ) BIRDS	
( ) AREA TREAT		( ) DINING ROOM	( ) COCKROACHES	
( ) DRILL/INJECT		( ) LIVING ROOM/FAMILY ROOM	( ) EARWIGS	Added one [illegible] Candy Machine.
( ) AEROSOL TREATMENT		( ) ATTIC	( ) FLEAS	
ULV FOG ( ) COLD ( ) THERMAL		( ) CRAWL SPACE	( ) RODENTS	
( ) INTERIOR BAIT STATIONS	818	( ) BASEMENT	( ) SILVERFISH	Added one to [illegible] Room,
( ) EXTERIOR BAIT STATIONS		( ) OFFICE	( ) SPIDERS	
POWER SPRAY ( ) CRAWL SPACE		( ) BREAK ROOM	( ) SQUIRRELS	
( ) FOUNDATIONS ( ) EAVES		( ) SERVICE AREA	( ) WASPS/HORNETS/YELLOW JACKETS	Added 1 bait station to Copy Room.
( ) GARBAGE AREA ( ) LAWN		( ) STORAGE ROOMS	( ) WEEDS/FUNGUS	
[illegible] ( ) LEVEL 1 ( ) LEVEL 2		( ) [illegible]	( ) WOOD DESTROYING ORGANISMS	
TREE ( ) FOLIAR SPRAY ( ) INJECT		( ) EXTERIOR	( ) FOOD INFESTATION	
( ) EXCLUSION		( ) TREES/SHRUBS		
( ) LIVE ANIMAL TRAP		( ) LAWN	( ) YARD PEST	
( ) [illegible] TRAP		( ) TRASH/STORAGE		
( ) GLUEBOARD TRAP		( ) OTHER	( ) ORNAMENTAL PEST	
( ) [illegible]				
( ) OTHER			( ) OTHER	

#1

CHEMICAL	EPA REG #	% #2	AMOUNT	SPECIAL NOTES
( ) [illegible]				TIME
( ) [illegible]				TEMP
( ) [illegible]				WIND SPEED
( ) KNOCKOUT [illegible]				WIND DIRECTION
( ) PYRETHRINS				[illegible] CALL
( ) VECTRIN				( ) NOTICES DELIVERED
( ) [illegible]				( ) NOTICES POSTED
( ) BRODIFACOUM - TALON-G			180 [illegible]	( ) 24 HOUR [illegible] CALL
( ) QUINTOX				( ) REGULAR SERVICE
( ) GROWTH REGULATOR				( ) SPECIAL SERVICE
( ) [illegible]				( ) N/C FOLLOW-UP
( ) [illegible]				( ) PRODUCT SALES
( ) PT				( ) RECEIVED $
( ) PT				( ) CASH ( ) CHECK #
( ) PT				( ) SPECIAL CHARGES
( ) [illegible]				MATERIAL $
( ) [illegible]				LABOR $
( ) BAIT STATIONS				OTHER $
( ) TRAPS				TOTAL $
( ) [illegible]				( ) SPECIAL JOB NEEDS
( ) [illegible]				
( ) [illegible]				( ) FOLLOW-UP REPORT MADE
( ) [illegible]				( ) COMPUTER ENTERED

( ) PAGE 2 ATTACHED

X [signature] 45871 [signature] 3/17/98

TECHNICIAN SIGNATURE LICENSE # CUSTOMER SIGNATURE

In Anchorage: 277-7378
400 East Fireweed Lane
Anchorage, Alaska 99503
Fax: 277-3333

Statewide: 1-800-770-3383

AMERICAN PEST MANAGEMENT

#9 target organism

SERVICE REPORT

CD	DESCRIPTION	LAST SERVICE	FREQUENCY	STARTING TIME			SR NO.
	Rodents						
MAP	ROUTE OR TECHNICIAN		SERVICE DATE	SERVICE NOTES			
	818		3-17-98				$

#7 date of application

Inlet View Elem.

JOB CONTACT ______
JOB PHONE 277-7681
JOB ADDRESS 1219 N st — #6 application location
P.O. NUMBER ______

application method

METHOD	INSPECTOR	AREA TREATED	TARGET PESTS #9	COMMENTS
INSPECTION ( ) SAFE ( ) STRUC ( ) CRACK/CREVICE ( ) SPOT TREAT ( ) AREA TREAT ( ) DRILL/INJECT ( ) AEROSOL TREATMENT ULV FOG ( ) COLD ( ) THERMAL (X) INTERIOR BAIT STATIONS ( ) EXTERIOR BAIT STATIONS POWERSPRAY ( ) CRAWL SPACE ( ) FOUNDATIONS ( ) EAVES ( ) GARBAGE AREA ( ) LAWN GRANS ( ) LEVEL 1 ( ) LEVEL 2 TREE ( ) FOLIAR SPRAY ( ) SUBJECT ( ) EXCLUSION ( ) LIVE ANIMAL TRAP ( ) MULTICATCH/SNAP TRAP ( ) GLUEBOARD TRAP ( ) TENT/FUMIGATE ( ) OTHER	818	( ) BEDROOMS ( ) BATHROOMS (X) KITCHEN ( ) DINING ROOM ( ) LIVING ROOM/FAMILY ROOM ( ) ATTIC ( ) CRAWL SPACE ( ) BASEMENT ( ) OFFICE ( ) BREAK ROOM ( ) SERVICE AREA ( ) STORAGE ROOMS ( ) BAR ( ) EXTERIOR ( ) TREES/SHRUBS ( ) LAWN ( ) TRASH [illegible] ( ) OTHER [illegible]	( ) ANTS ( ) BEETLES ( ) BIRDS ( ) COCKROACHES ( ) EARWIGS ( ) FLEAS (X) RODENTS ( ) SILVERFISH ( ) SPIDERS ( ) SQUIRRELS ( ) WASPS/HORNETS/YELLOW JACKETS ( ) WEEDS/FUNGUS ( ) WOOD DESTROYING ORGANISMS ( ) FOOD INFESTATION ( ) YARD PEST ( ) ORNAMENTAL PEST ( ) OTHER	Treated kitchen, Bathrooms, and office's, with Knock out for Silver Fish. Checked all Bait stations in office Full and in tact. Added one Bait station to copy Room and one in main office.

CHEMICAL	EPA REG #	%	AMOUNT	SPECIAL NOTES
( ) DURSBAN ( ) TEMPO ( ) PRESCRIBE ( ) KNOCKOUT 3FM ( ) PYRETHINS ( ) VECTRON (X) BAIT ( ) BRODIFACOUM - TALON-G ( ) QUINTOX ( ) GROWTH REGULATOR ( ) CARBARYL-SEVIN SL ( ) METASYSTOX ( ) FT ( ) FT ( ) FT ( ) FUMIGANT ( ) FERTILIZER ( ) BAIT STATIONS ( ) TRAPS ( ) INCLUDES ( ) OTHER ( ) OTHER ( ) OTHER			100 grams 2	TEMP TEMP WINDSPEED WIND DIRECTION PRESCHEDULE CALL ( ) NOTICES DELIVERED ( ) NOTICES POSTED ( ) 24 HOUR PRESERVICE CALL (X) REGULAR SERVICE ( ) SPECIAL SERVICE ( ) NC FOLLOW-UP ( ) PRODUCT SALES ( ) RECEIVED $ ( ) CASH ( ) CHECK # ( ) SPECIAL CHARGES MATERIAL $ LABOR $ OTHER $ TOTAL $ ( ) SPECIAL JOB NOTES ( ) FOLLOW-UP REPORT MADE ( ) COMPUTER ENTERED

( ) PAGE 2 ATTACHED

X [signature] 45016
TECHNICIAN SIGNATURE LICENSE # CUSTOMER SIGNATURE

Site Categories:
Agriculture and Forestry

Pesticide Use Reporting Worksheet - Do Not Mail or FAX This Worksheet to ODA
All reports must be submitted electronically- http://purs.oda.state.or.us/

Business or Individual Name:

Mod 1/15/02

Date of Use	Specific Site (Crop)	Location: TRS or GPS	Product Brand Name	Product EPA Reg. No. or SLN, Section 18, or EUP	Amount	Units	Purpose
/ /							
/ /							
/ /							
/ /							
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/ /							
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ANCHORAGE MUNICIPAL CHARTER, CODE AND REGULATIONS Municipality of ANCHORAGE, ALASKA Supplement No. MA 16 (All ordinances and resolutions passed and approved through December 31, 2001.)

Chapter 15.75 PESTICIDE CONTROL*

15.75.035 Failure of director to exercise authority not to constitute waiver.

(AO No. 86-112)

15.75.040 Issuance of applicator's permit; display; transfer.

A. *Application.* An application for a permit under this chapter must state the name, address and telephone number of the applicant, each type of equipment to be used by the applicant, a complete list of every pesticide, broadcast chemical and method of application which the applicant intends to use, a description of the area in which the applicant wishes to conduct business, and such other information as the director reasonably requires.

B. *Amendments.* A permit or an application for a permit may be amended without charge to include additional pesticides, broadcast chemicals or methods of application. The application to amend must be made to the director in the same manner as the original application and at least 30 days before the use of the pesticide, broadcast chemical or method of application.

C. *Denial or revocation.* The director may refuse to issue or amend a permit or revoke a permit in part or in its entirety if the director is aware of any fact which reasonably indicates that the applicant has not or will not conduct business in a safe, scientific and proper manner, that one or more of the pesticides, broadcast chemicals or methods of application listed on the application is, or in the director's opinion is reasonably expected to be, hazardous to the public, including plant or animal life, or that other risk of harm is threatened.

D. *Authority to impose restrictions.* The director may issue a permit subject to reasonable restrictions or may impose reasonable restrictions on an existing permit to reasonably limit the risk of harm to the public, including plants and animals.

E. *Investigation of applicant.* The director may conduct a reasonable investigation before acting on any permit or application, including investigation of the applicant's training and the applicant's past, present or intended methods of conducting business.

F. *Display.* The permit holder must prominently display the permit at the place of business or, if the permit holder does not have a place of business, at the permit holder's residence.

G. *Transfer.* A permit may not be transferred.

H. *Expiration.* The director shall issue permits on an annual basis and all permits shall expire on December 31 of the year of issuance.

I. *Fee.* The director may set a permit fee.

(GAAB 16.75.030--16.75.050, 16.75.070; AO No. 86-112)

15.75.050 Commercial application prohibited during certain wind conditions.

A person who engages in the business of applying pesticides or broadcast chemicals may not apply by spraying any pesticide or broadcast chemicals out of doors if the wind speed exceeds five knots per hour at the site of application.

(AO No. 86-112)

15.75.060 Notice of application by commercial applicators.

A. A person who engages in the business of applying pesticides or broadcast chemicals must give written notice as provided by this section every time that the person is going to apply by spraying a pesticide or broadcast chemical out of doors.

B. Notice must be given at least 24 hours before application and not more than 96 hours before application.

C. The person must post one or more copies of the notice on the property to be sprayed and at least one copy of the notice on each residence or commercial building located on property which is contiguous to the property to be sprayed.

D. Notice need not be given if the pesticide or broadcast chemical will be applied only to the exterior surface of a building and if the pesticide or broadcast chemical will not be applied to plants or animals.

E. The person must post the notice in a manner which is reasonably calculated to provide actual notice to persons living or doing business on property contiguous to the property to be sprayed.

F. The notice must include the trade name of each pesticide or broadcast chemical, the chemical name, to the extent available, of the principal active ingredients in each pesticide or broadcast chemical, the exact date and approximate time that the pesticide or broadcast chemical will be sprayed, the name, address and telephone number of the permit holder, a warning that the pesticide or broadcast chemical is or may be harmful, and a statement of recommended precautions. The department will provide samples of such notices and substantial compliance with such notices will constitute compliance with this subsection.

(GAAB 16.75.120; AO No. 85-8; AO No. 86-112)

15.75.065 Notice of application by municipality.

A. The municipality shall give written notice in the manner described in section 15.75.060.C and as described in this section before it applies in any manner any pesticide or broadcast chemical in public parks.

B. Notice must be given at least 24 hours before application and not more than 96 hours before application.

C. The municipality must post at least one copy of the notice in a manner which is reasonably calculated to provide actual notice to persons using the public parks.

D. The notice must include the trade name of each pesticide or broadcast chemical, the chemical name, to the extent available, of the principal active ingredients in each pesticide or broadcast chemical, the exact date and approximate time that the pesticide or broadcast chemical will be applied, the name, address and telephone number of the municipal department in charge of application, a warning that the pesticide or broadcast chemical is or may be harmful, and a statement of recommended precautions.

(AO No. 86-112)

15.75.070 Applicability of other laws.

Title 37. PUBLIC FINANCE

Chapter 37.05. FISCAL PROCEDURES ACT

***ADMINISTRATIVE CODE.

For purchasing see 2 AAC 15.

Article 01. ADMINISTRATION

Sec. 37.05.010. Bond of commissioner of administration.

The commissioner of administration, before entering upon official duties, shall execute a good and sufficient bond in the sum of $10,000 payable to the state, conditioned upon the faithful performance of duties imposed by law. The premium on each bond shall be paid in the same manner as other expenses of the department.

Sec. 37.05.020. Regulations.

The Department of Administration shall adopt regulations for the performance of its powers or duties, the execution of its business, and its relations to and business with other state agencies.

Sec. 37.05.030. Financial reports and statements. [Repealed, Sec. 19 ch 6 SLA 1998].

Repealed or Renumbered

Sec. 37.05.035. Annual state loan reports.

Each state agency that makes or purchases a loan shall prepare an annual report of the aggregate of all loans, by type, made or purchased by the state agency during the preceding fiscal year. The report must include the estimated rate of interest that would have been charged if the loan had been made or purchased at prevailing market rates and must include the difference between the return on the loan that would have been realized under that estimated rate of interest and the return on the loans under the interest rate actually charged. In the absence of a prevailing market rate in the state, the state agency shall use a rate that, in the judgment of the agency, is comparable to a prevailing market rate. The report must also include an analysis of the income groups benefited under the loan programs. By January 30 of each year the state agency shall notify the legislature that the report prepared under this section is available.

Sec. 37.05.040. Legal custody of records.

The commissioner has the legal custody of all records, memoranda, writing, entries, prints, representations, or combinations of them, of any act, transaction, occurrence, or event of the department.

Sec. 37.05.050. Federal funds.

Federal funds received by an agency shall be deposited in the state treasury and disbursed in the same manner as other state money. Federal funds are subject to the fiscal controls imposed by this chapter, except where federal laws or regulations prevent the funds from being deposited, appropriated, allocated,

accounted for, or expended as provided by this chapter and other laws not inconsistent with this chapter.

Sec. 37.05.060. - 37.05.120 [Repealed, Sec. 3 ch 188 SLA 1970].

Repealed or Renumbered

Article 02. UNIFORM ACCOUNTING

Sec. 37.05.130. General powers.

The Department of Administration is responsible for all accounts and purchases.

Sec. 37.05.140. Accounting system.

(a) The Department of Administration shall maintain centralized accounting records that include the general and controlling accounts of the state. The state agencies shall prepare and transmit the documents prescribed by the department and shall submit the reports and statements required in order to carry out this chapter. Statistical or cost accounts related to the control accounts may be maintained by the department or by the agency as determined by the department, after consultation with the head of the agency concerned. Duplicate accounting records may not be maintained, except in the office of the Department of Administration as it directs.

(b) [Repealed, Sec. 18 ch 9 SLA 1994].

(c) [Repealed, Sec. 18 ch 9 SLA 1994].

(d) The Department of Administration after consultation with the head of the agency concerned may decide not to maintain all or any part of the accounting records for an agency if the department finds that to do so would result in an appreciable loss of federal grant-in-aid funds to defray the administrative costs of maintaining the records.

Sec. 37.05.142. Accounting for program receipts.

The Department of Administration shall establish and maintain separate accounts by program source for all program receipts that state agencies deposit under AS 37.10.050 or under another statute if the program receipts are exempted by law from the deposit requirements of AS 37.10.050.

Sec. 37.05.144. Appropriations based upon program receipts.

The annual estimated balance in each account maintained under AS 37.05.142 may be used by the legislature to make appropriations to state agencies to administer the programs generating the program receipts, to implement the laws related to the functions generating the program receipts, or to cover costs associated with the collection of the program receipts.

Sec. 37.05.146. Definition of program receipts and non-general fund program receipts.

(a) In AS 37.05.142 - 37.05.146 and AS 37.07.030 , "program receipts" means fees, charges, income earned on assets, and other state money received by a state agency in connection with the performance of its functions. Unless otherwise provided in this section, program receipts are accounted for within, and appropriated from, the general fund of the state.

(b) The program receipts listed in this subsection are accounted for separately, and appropriations from these program receipts are not made from the unrestricted general fund:

(1) federal receipts;

(2) University of Alaska receipts (AS 14.40.491);

(3) designated program receipts; in this paragraph, "designated program receipts" means money received by the state from a source other than the state or federal government that is restricted to a specific use by the terms of a gift, grant, bequest, or contract;

(4) receipts of the following:

(A) highway working capital fund (AS 44.68.210);

(B) correctional industries fund (AS 33.32.020);

(C) loan funds;

(D) international airport revenue fund (AS 37.15.430);

(E) corporate receipts earned or managed by a public corporation of the state;

(F) fish and game fund (AS 16.05.100);

(G) school fund (AS 43.50.140);

(H) training and building fund (AS 23.20.130);

(I) retirement funds (AS 14.25, AS 22.25, AS 26.05.222 , AS 39.35, and former AS 39.37);

(J) permanent fund (art. IX, sec. 15, Alaska Constitution);

(K) public school trust fund (AS 37.14.110);

(L) second injury fund (AS 23.30.040);

(M) fishermen's fund (AS 23.35.060);

(N) FICA administration fund (AS 39.30.050);

(O) receipts of the employee benefits program established under AS 39.30.150 - 39.30.180;

(P) receipts of the deferred compensation program established under AS 39.45;

(Q) clean air protection fund (AS 46.14.260);

(R) receipts of the group insurance programs established under AS 39.30.090;

(S) mental health trust fund (AS 37.14.031);

(T) Alaska children's trust (AS 37.14.200);

(U) commercial fisheries test fishing operations (AS 16.05.050(a)(15));

(V) Regulatory Commission of Alaska under AS 42.05 and AS 42.06;

(W) Alaska Oil and Gas Conservation Commission under AS 31.05;

(X) receipts of the Department of Community and Economic Development under AS 08.01.065 (a), (c), and (f);

(Y) receipts from the seafood marketing assessment under AS 16.51.120 - 16.51.170, the salmon marketing tax under AS 43.76.110 - 43.76.130, and other receipts of the Alaska Seafood Marketing Institute;

(Z) the administrative cost charge under AS 44.33.113 for the state's role in the federal community development quota program;

(AA) dive fishery management assessment receipts (AS 43.76.150);

(BB) process service fees collected by the Department of Public Safety;

(CC) Alaska Commercial Fisheries Entry Commission under AS 16.05.490, 16.05.530, and AS 16.43;

(DD) receipts of the Alaska Vocational Technical Center;

(EE) Alaska Pioneers' Home care and support receipts under AS 47.55.030;

(FF) receipts of the Department of Transportation and Public Facilities from tolls charged for use of the Whittier Tunnel;

(GG) receipts of the Department of Community and Economic Development, division of insurance, from license fees and fees for services;

(HH) receipts of the division of the Department of Community and Economic Development that regulates banking, securities, and corporations;

(II) receipts of the Department of Corrections from the electronic prisoner monitoring program under AS 33.30.065 (d);

(JJ) receipts of the Department of Corrections from the operation of community residential centers;

(KK) receipts of the Alaska Police Standards Council;

(LL) receipts of the Department of Public Safety from fees for fire and life safety plan checks under AS 18.70.080 (b);

(MM) receipts of the Department of Transportation and Public Facilities from the measurement standards and commercial vehicle enforcement program;

(NN) receipts of the Department of Education and Early Development for teacher certification under AS 14.20.020 ;

(OO) receipts of the Professional Teaching Practices Commission from professional certification fees;

(PP) receipts of the Department of Health and Social Services, Bureau of Vital Statistics;

(QQ) receipts of the Department of Corrections from the inmate telephone system;

(RR) receipts of the Department of Public Safety from the Alaska automated fingerprint system under AS 44.41.025 (b);

(SS) receipts of the Department of Administration from the boat registration program under AS 05.25.096 ;

(TT) state land disposal program (AS 38.04.022);

(UU) shore fisheries development lease program account (AS 38.05.082(f));

(VV) timber receipts account (AS 38.05.110);

(WW) workers' safety and compensation administration account (AS 23.05.067);

(XX) receipts of fees for recording and related services of the Department of Natural Resources (AS 40.17.030 (a)(10), 40.17.070; AS 44.37.025(b), 44.37.027(c); AS 45.29.303 (b), 45.29.525, and 45.29.619(b));

(YY) receipts described in AS 46.03.482 (b)(1) and (2) received under the commercial passenger vessel environmental compliance program;

(ZZ) receipts of the Department of Community and Economic Development for fees for business license endorsements for tobacco products (AS 43.70.075);

(5) receipts of or from the trust established by AS 37.14.400 - 37.14.450, except reimbursements described in AS 37.14.410 ;

(6) receipts of the Alaska Fire Standards Council for which a taxpayer is allowed a credit under AS 21.89.075 .

Sec. 37.05.150. Funds and accounts.

The accounting system shall be in accordance with accepted principles of governmental (fund) accounting and shall include both budgetary and property accounts. The system must provide records showing at all times by funds, accounts, and other pertinent classifications the amounts appropriated, the estimated revenue, actual revenue or receipts, the amounts available for expenditure, the total expenditures, the unliquidated obligations, actual balances on hand, and the unencumbered balances of appropriations for each state agency.

Sec. 37.05.151. [Renumbered as AS 37.05.500].

Repealed or Renumbered

Sec. 37.05.152. [Renumbered as AS 37.05.510].

Repealed or Renumbered

Sec. 37.05.153. [Renumbered as AS 37.05.520].

Repealed or Renumbered

BASIC INFORMATION ABOUT PESTICIDES

What is a Pesticide?

By law, a pesticide is "any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest." This definition includes insecticides, herbicides, fungicides, rodenticides, and antimicrobials as well as plant growth regulators, defoliants and dessicants. The National Research Council has stated that pesticides are "perhaps the only toxic substances that are purposefully applied to the environment." While pesticides may be effective at killing or damaging pests, they do not solve pest problems because they do not eradicate the factors that have allowed the pest to thrive.

Does Government Registration Mean Pesticides Are Safe?

Legally, pesticides are supposed to be regulated so that they do not cause "unreasonable adverse effects" and so that there is "a reasonable certainty that no harm will result" from their use. But this does not mean that pesticides are safe by a common-sense definition. Registered pesticides are known to cause cancer, genetic damage, miscarriages, birth defects, liver and kidney damage, and cataracts. In addition, pesticide regulation is problematic. Many pesticides used today were registered using old test protocols and have not been reevaluated under current standards. Pesticide testing is performed or paid for by pesticide manufacturers, setting up a conflict of interest. Many tests are only "conditionally required" and are often waived. Finally, tests ignore the multiple pesticides to which people are regularly exposed because they only look at one pesticide at a time. Considering the above information, pesticides are not safe.

Are Pesticides Hazardous to Our Health?

As pesticides are chemicals designed to kill or harm pests, it is not surprising that they can damage human health. Pesticides can cause headaches, nausea, cancer and death, damage the nervous system, disrupt our hormone and immune systems, affect reproduction, and burn eyes and skin. Pesticides with significant health hazards are applied in startling quantities. For example, just looking at the 26 most widely used pesticides, Americans annually apply about 380 million pounds of pesticides classified by the EPA as carcinogens. About 650 million pounds of pesticides that cause reproductive problems are used annually, with hundreds of millions of applications in our homes, on our lawns, and in our gardens.

Do Pesticides Pose Special Hazards to Children?

Research shows that pesticides are particularly hazardous for children. Children eat more pesticides on their food than adults because of their eating patterns and their body size. The National Research Council estimated that every day, over 100,000 two-year olds consume more than our government's "acceptable levels" of a common group of neurotoxic pesticides. In addition, recent research has linked a wide variety of health problems in children to their parent's exposure to pesticides, such as brain cancer, birth defects, and premature birth. Finally, children's behavior makes them more susceptible to pesticide hazards because they crawl around and climb where pesticides may be applied, put things in their mouths that contain pesticide residues, and they breathe more for their body weight than adults.

Do Pesticides Contaminate Our Rivers, Streams, and Wells?

Pesticides are widely found in waterways throughout the United States. The U.S. Geological Survey (USGS) has found that over 95% of river and stream samples, as well as over 50% of well samples contained at least one pesticide, and many samples contained multiple pesticides. Both urban and agricultural areas have pesticide-contaminated waterways. Although many of the pesticide concentrations measured by the USGS are relatively low, recent studies show that these pesticides are already causing health problems for humans and animals. For example, the numbers of breast cancer cases in Kentucky and low birth-weight babies in southern Iowa were high in areas with pesticide-contaminated water. Also, the USGS concluded, "[w]ithin all regions studied," the fish already "may be experiencing some degree of endocrine disruption."

Organizations That Support Pesticide Use Tracking Bill SB 14

April 12, 2002

PUBLIC HEALTH GROUPS

Alaska Chronic Fatigue and Multiple Chemical Sensitivity Support Group

Alaska Community Action on Toxics

Alaska Injured Workers Alliance

Alaska Public Interest Research Group

American Lung Association of Alaska

Brain Injury Association of Alaska

Mental Health Association of Alaska

ENVIRONMENTAL ADVOCACY GROUPS

Alaska Action Center

Alaska Center for the Environment

Alaska Conservation Alliance

Arctic Organics

Ocean Conservancy (formerly Center for Marine Conservation)

Cook Inlet Keeper

Kachemak Bay Conservation Society

National Wildlife Federation of Alaska

Native American Fish and Wildlife Society

Northern Alaska Environmental Center

Alaska Conservation Voters

750 West Second Ave., Suite 109, Anchorage Alaska 99501 / Ph. 907.258.6171 / Fax 907.258.6177
P.O. Box 22151, Juneau Alaska 99802 / Ph. 907.463.3366 / Fax 907.463.3312 / www.acvoters.org

SB 14 ~ Tracking of Pesticide Use

To: Senate Resources Committee Members Date: April 12, 2002

Alaska Conservation Voters (ACV) is a nonprofit organization dedicated to protecting Alaska's environment through public education and advocacy. Our 34 member organizations represent over 35,000 registered Alaskan voters. As most Alaskans, our members want to be assured that the food we eat and the water we drink are free from contaminants.

Senate Bill 14 enables all Alaskans to access information regarding the use of pesticides, a group of chemicals linked to a variety of health effects. Armed with this information, Alaskans can choose the steps we, as individuals, want to take to limit our exposure to these chemicals. Additionally, health researchers and public health officials will have more data to help them determine the risks associated with pesticide use.

- **Pesticide Use Tracking System:** Senate Bill 14 mandates the Alaska Department of Environmental Conservation (DEC) to establish and implement pesticide use tracking system. Alaskans have a right to know about pesticide frequency, quantity applied, and size of area treated in areas such as public lands, parks, schools and workplaces.
- **Registration Fees:** The pesticide use tracking system will be funded by collection of registration fees on pesticide labels registered for commercial sale in the state of Alaska. Currently, there are no fees associated with registering pesticides. Alaska is the ONLY state that does not collect registration fees.
- **Pesticide Tracking Advisory Board:** Senate Bill 14 creates a Pesticide Advisory Board consisting of 9 members. The board would have diverse representation with members from medical communities, children's advocates, wildlife researchers, pesticide applicators, drinking water providers, and community members. The advisory board would advise the DEC on the development and implementation of pesticide use reporting, recommend methods for public education, research and develop mechanisms for collection of household use, and work with the public to improve the reporting and tracking system.

Alaska Conservation Voters encourage legislators to support SB 16 because of the health benefits and protections it provides Alaskans. This legislation, which contains its own funding mechanism, represents an opportunity for the Department of Environmental Conservation to further its mission to protect public health.

Danielle Brown

Danielle Brown

National Conference of State Legislatures
ENVIRONMENTAL HEALTH SERIES

July 1999
No. 1

Pesticides and Human Health

by Glen Andersen, M.S.
NCSL Environmental Health Project

Pesticides play a vital role in ensuring the quality of the United States food supply—but the potential for pesticides to cause human and environmental harm has required the creation of numerous regulations. Pesticide use affects a large number of people the United States: the Environmental Protection Agency (EPA) estimates that approximately 100,000 pesticide poisonings occur annually. Pesticides have been detected in a large number of the nation's water bodies, including those that provide drinking water[1]. Congress, through the Food Quality Protection Act, has required the EPA to review and revise all pesticide residue limits to ensure that they adequately protect children. This review, which will impact the use of the most harmful pesticides, is an effort to ensure that regulations keep pace with the complex and changing science that determines pesticide safety. State laws that regulate pesticide use will need modification to account for federal rules and scientific advancement.

Contents

Overview 1
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Approaches for Managing Pesticide Use 4
Pesticides and International Trade 5
Federal Policy 6
Notes 8

Overview

The importance of pesticides in world agriculture should not be understated, as their introduction in the 1940s began a trend marked by crop yields that continually increased in size and quality. This "Green Revolution," which relied heavily on chemical pesticides and fertilizers, led to healthier populations by providing an increasingly varied food supply, controlling food borne disease, and reducing malnutrition. Agricultural dependence on pesticides has steadily increased since their introduction—each year more than 2 million metric tons of pesticide products are used to control pests and diseases.

Although the use of pesticides to produce healthier and more abundant crops has been beneficial for human health, some aspects of pesticide use still trouble scientists, lawmakers and the public. Problems with pesticides were not widely known until the publication of the book *Silent Spring* by researcher Rachel Carson in 1962. Her book presented a detailed study of ecosystem damage

caused by the indiscriminate use of pesticides. Later work by other researchers supported Carson's book, and suggested negative effects for humans as well. Due to mounting evidence against hazardous pesticides, the federal government banned DDT and chlordane.

Sources of Exposure

Food

The U.S. Environmental Protection Agency defines a pesticide as "any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest. Pests can be insects, mice and other animals, weeds, fungi, or microorganisms like bacteria and viruses."

Many modern pesticides are designed to break down into non-toxic substances with the passage of time. Pesticides are most potent just after application, but should break down to relatively safe levels by the time treated food reaches the table. If the pesticide has not had the required amount of time to break down, is applied too liberally, or a more persistent pesticide is used, some pesticide residue may still be in food at the time of consumption.

The U.S. Food and Drug Administration's Pesticide Program found that 60 percent of the fruits and 37 percent of the vegetables that were sampled in 1995 contained detectable pesticide residues. Approximately 2 percent of these fruit and vegetable samples contained residue amounts that exceeded maximum residue limits set by the EPA. The EPA sets the maximum residue limit (MRL) to be the maximum level of residue legally permitted in or on a crop in commerce. This level is set to insure that there are no adverse effects to the consumer over a lifetime of dietary exposure.

Under the 1996 the Food Quality Protection Act, many of the current MRLs are likely to change, largely since the new act requires that levels be reduced by 90 percent if uncertainty about effects on children exists. The EPA must review all pesticides and their health effects using current methodology, taking into account exposure to pregnant women and developing children, while also including exposures from other sources. Using this new data, EPA must set residue limits accordingly by the year 2000.

Water

Pesticides enter water resources in a variety of ways, including:

- Runoff from field application;
- Direct entry from spray operations;
- Sewage dumping;
- Settling from the atmosphere;
- Leaching from waste dumps;
- Leaching from field application through soils into groundwater.

The amount each of these methods of entry contributes varies, depending upon the environment and nature of the source. However, runoff and leaching tend to be the main pesticide pathways to water.

Groundwater, which supplies drinking water to approximately 50 percent of the U.S. population, was until recently thought to be safe from chemical pollution. However, researchers are detecting a greater variety of pesticides in a growing number of groundwater resources across the United States. In 1988, the EPA documented the presence of 46 pesticides in groundwater from 26 states. A 1990 study found one or more pesticides in 10.4 percent of community water systems. Contamination of these important water resources may threaten human health, since the millions of Americans who rely on groundwater use it without pre-treatment. Residues that reach groundwater may linger for long periods of time, or eventually find their way to surface waters by emerging through springs and lake bottoms. In 1986, EPA testing found pesticide residues in half of the 2,000 wells they tested in Iowa. Groundwater contamination can have long-lasting effects, since the cold temperatures and a lack of organic substances impede the decomposition of pesticide compounds.

In 1998, the U.S. Geological Survey finished the largest pesticides and water study ever conducted. Within the study regions, they found that 95 percent of streams and 50 percent of wells near agricultural and urban areas contain one or more pesticides. Although most did not violate current safe drinking water standards, these standards are valid only for exposure to individual pesticides, not to the mixtures of different pesticides that are present in most contaminated sources. For most of the streams tested—half of which supply drinking water—pesticide levels exceeded EPA's guidelines for aquatic life.

Air

Workers can be exposed to pesticides through direct skin contact or inhalation during application. Such exposure also may occur when safety periods between application and harvest are ignored or when pesticides are overused or used improperly. Pesticides from aerial spraying may also drift into neighboring areas and expose residents.

In 1995, an international study conducted by the World Health Organization estimated that approximately 3 million cases of pesticide poisonings occur annually, including 220,000 pesticide-related deaths, mainly among those who use and apply pesticides.

The most common type of pesticide poisoning results from ingestion, inhalation, or skin absorbtion of relatively large amounts of pesticides. This type of acute poisoning is most common among agricultural workers. While much is known about the toxic effects of pesticides at these higher levels, uncertainty about long term low level exposures—similar to what one could experience through food and water consumption—remains.

Health Effects

The nature of a pesticide is to kill or otherwise adversely affect the target pest, be it fungus, insect, weed or rodent. Although efforts are made to design the pesticide in such a way that it

affects only the target organism, pesticides do cause harm to non-target organisms. Toxic effects range from acute (poisoning occurring through single or a few exposures) to chronic (occurring through long-term exposure). In humans, pesticides can affect the nervous, reproductive and endocrine systems, and may cause cancer. Laboratory studies conducted on animals also have linked chronic exposure of pesticides to birth defects, tumor development and cancers. The EPA's has classified approximately 165 chemical pesticides as known, probable or possible human carcinogens.

The U.S. Environmental Protection Agency estimates that approximately 100,000 pesticide poisonings occur annually.

New research suggests that some pesticides may disrupt the body's endocrine system—the set of glands, hormones and target cells that help control growth, development, reproduction and behavior. Endocrine disruptors interfere with this system, causing biological dysfunction. Some endocrine disruptors mimic hormones that occur naturally in the body, fooling the body into a response. Other endocrine-disrupting chemicals can inhibit or stimulate the body's production of hormones. Such disruption is known to cause birth defects in wildlife and laboratory test animals, and is suspected of causing cancer and birth defects in humans. Much is yet to be learned about the effects of pesticides on the human endocrine system, and research in this area is ongoing.

Children, in particular, are susceptible to pesticides for various reasons—they are still developing, have faster metabolisms and are involved in play activities that increase their exposure. A child's small size and quick metabolism means that he or she consumes more fresh produce, breathes more air, and drinks more water than adults relative to his or her body weight. They also play on the ground, swim in lakes and rivers and mouth toys and other objects, all of which lead to increased pesticide exposure. Additionally, a child's growing body is more sensitive to chemical exposures because development is taking place in the brain, nervous system and many other areas. Some studies have shown that children of parents who use pesticides occupationally or in the household are three to nine times more likely develop leukemia. (1, 2)

Determining the levels at which a pesticide causes harm is a complex, scientifically demanding task. Pioneering biomonitoring efforts by the Centers for Disease Control and Prevention have helped reduce the uncertainty involved in estimating human risk involved in pesticide and other chemical exposures. Biomonitoring involves the direct measurement of a toxic substance in blood or urine to assess exposure, and will help to determine which of the thousands of known chemical compounds cause birth defects, cancer and other diseases.

Approaches for Managing Pesticide Use

Reducing the human health threat of pesticides is possible through combined efforts in different areas, such as improved risk assessment and toxicity testing, better education and training for users of pesticides, and integration of farming practices that require fewer pesticides. Ways

to reduce the potential hazards of pesticide use could involve the following:

- Crop rotation helps mitigate weed, disease and pest problems, increases soil nitrogen, and reduces the need for fertilizers. Monoculture—the practice of repeatedly growing one type of crop, such as corn, in the same field year after year—is a common practice throughout the United States. This practice promotes pest problems and depletion of soil nutrients.
- Natural predators and parasites can be used to control pests. Pesticides often destroy predators while the pest gradually grows more tolerant to the pesticide, requiring that increasing amounts of the pesticide be applied.
- Soil and water conserving tillage reduces runoff and helps maintain soil quality.
- Integrated pest management is encouraged by the EPA and U.S. Department of Agriculture. This approach to pest control uses the tactics mentioned above—such as crop rotation, biological controls, resistant varieties of plants, pheromones to attract beneficial insects, efficiently timed spraying—and other methods. Integrated pest management can be more economical because it minimizes the use of costly chemicals.
- The majority of children's pesticide exposure comes from home, lawn, and garden application—reducing this exposure requires a more prudent and controlled use of pesticides in private and public areas. (3)

Pesticides and International Trade

In 1996, the United States exported 687 million pounds of pesticides, mostly to developing countries. Workers in developing nations such as Mexico often lack proper training and handle pesticides without masks or protective clothing. In the highly agricultural Culiacan Valley of Mexico, nearly 3,000 field workers are hospitalized for pesticide poisoning each year.

Ten million pounds of 1996 U.S. pesticide exports were pesticides that were banned or forbidden for use in the United States due to their hazardous nature. In addition, testing of produce imported into the United States has uncovered traces of banned pesticides. Chlordane and lindane, extremely hazardous pesticides that are banned for food use in the United States, have appeared in canola seed imports from Canada and carrot imports from Mexico. Adding to the safety uncertainties of imported produce is the decline in the testing of imported produce since the implementation of the North American Free Trade Agreement.

To address this growing problem, 95 countries have signed the Prior Informed Consent Convention. The convention contains provisions for the exchange of information among parties about potentially hazardous chemicals that may be exported and imported. This convention requires that 1) all chemicals designated for occupational use must be accompanied by an international safety data sheet; and 2) all chemicals that are banned or severely restricted domestically must have labeling that provides information with regard to risks and hazards to

human health and the environment. The convention has been signed by the president, but has yet to be ratified by the Senate.

Several attempts have been made to address the problem in the United States through "Circle of Poison" legislation. These bills, none of which have passed, were designed to stop companies from exporting banned and unregistered pesticides, as well as to introduce tougher testing standards to keep the pesticide residues from showing up in consumers' food.

Federal Policy

The United States has a complex set of chemical safety statutes and regulations that are administered by a number of federal agencies. The principal statutes are described briefly below.

Toxic Substances and Control Act (TSCA)—Regulates industrial chemicals, including heavy metals. Identifies and controls industrial chemical hazards that are toxic to human health and the environment. Administered by the U.S. Environmental Protection Agency.

Federal Insecticide, Fungicide and Rodenticide Act (FIFRA)—Also administered by the EPA, requires the agency to register all pesticides sold in the United States. FIFRA makes it a violation to use a pesticide in a manner inconsistent with its label, including the specified uses. FIFRA was revised and strengthened substantially by the Food Quality Protection Act in August 1996.

Federal Food, Drug and Cosmetic Act (FFDCA)—Regulates the establishment of pesticide tolerances (maximum residue levels). FFDCA was revised and strengthened substantially by the Food Quality Protection Act in August 1996. Administered by the EPA and the Food and Drug Administration.

Food Quality Protection Act (FQPA)—Amends both FIFRA and FFDCA to make a more consistent, protective regulatory system that is supported by sound science. It mandates a single, health-based standard for all pesticides in all foods and provides special protection for infants and small children.

Emergency Planning and Community Right-to-Know Act (EPCRA)—Requires local emergency planning for responses to industrial chemical or pesticide accidents; requires industries to notify their communities and states of releases; provides information from companies about possible industrial chemical or pesticide hazards in the facility's community; and mandates a national inventory of toxic chemical releases (Toxics Release Inventory [TRI]). Administered by the EPA.

Clean Air Act (CAA)—Establishes criteria and standards for regulating toxic air pollutants to safeguard public health and the environment. Administered by the EPA.

Clean Water Act (CWA)—Establishes criteria and standards for pollutants—including some

pesticides—in surface water bodies to protect against chronic ecosystem effects. Administered by the EPA.

Safe Drinking Water Act (SDWA)—Establishes enforceable maximum contaminant levels (MCLs) for pesticides and health advisories. Major revisions strengthening SDWA were enacted in August 1996. Administered by the EPA.

Resource Conservation and Recovery Act (RCRA)—Requires appropriate handling and disposal of hazardous waste. Administered by the EPA.

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)—Covers incidents with hazardous materials and mandates the EPA Superfund program to clean up the highest priority sites contaminated by chemicals. The Agency for Toxic Substances and Disease Registry (ATSDR) evaluates data on the release of hazardous substances to assess effects on public health, initiates toxicological research, establishes and maintains registries for persons exposed to hazardous substances, and provides response to emergency release of substances.

Hazardous Materials Transportation Act (HMTA)—Ensures the safe and environmentally sound transportation of hazardous materials by all modes of transportation through a comprehensive, risk-based national program. Administered by the U.S. Department of Transportation (DOT).

Federal Hazardous Substances Act (FHSA) Consumer Product Safety Act (CPSA) and Poison Prevention Packaging Act (PPPA)—Regulates the safety of consumer products, including chemical safety. (Consumer Product Safety Commission)

Occupational Safety and Health Act (OSHA)—Regulates toxic chemicals related to occupational safety. Administered by the Occupational Safety and Health Administration (OSHA) and the National Institute for Occupational Safety and Health (NIOSH).

Notes

1. "Pesticides in Surface and Ground Water of the United States: Summary of Results of the National Water Quality Assessment Program" U.S. Geological Survey, (1998)

2. J.D. Buckley, L.L. Robison, R. Swotinsky, D.H. Garabrant, M. LeBeau, P. Manchester, M.E. Nesbit, L. Odom, J.M. Peters, W.G. Woods, and G.D. Hammond, "Occupational Exposures of Parents of Children with Acute Nonlymphocytic Leukemia: A Report from the Children's Cancer Study Group," *Cancer Research* 49, (1989): 4030-4037.

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Children's Health and the Environment

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Children tend to be more vulnerable to substances in the environment because they breathe more air, drink more fluids and eat more food in proportion to their body weight than adults. Exposures that would not harm an adult can cause permanent damage to a child's developing body. The U.S. Environmental Protection Agency is presently revising pesticide residue limits insure sure they provide a margin of safety for children as well as adults. States may be required to update environmental standards to comply with federal regulations. Currently, most state and federal regulations are based on adults, only recently has legislation been introduced to take children's special vulnerabilities into account.

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Overview

Traces of man-made synthetic compounds can be found throughout the world, even in the plants and animals of our planet's most remote regions. With more than 70,000 chemicals in use in the United States and 2,000 new compounds being introduced every year, the average citizen is likely to be exposed to a large cocktail of chemical substances. These compounds are present in food, water and air, and little is known about many of their effects on children's health. A child's environment also contains particles and chemicals that result from incineration, smelting, transportation and other industrial processes.

Although state and federal regulatory agencies attempt to set standards that protect the public's health—including children, pregnant women, and the elderly—most standards are based on data collected from adult humans or adult animals. As differences between the adult and child response to environmental hazards become more apparent, government agencies are realizing that testing and standard setting should accommodate the sensitivities of developing children.

Why are children more susceptible?

Children's quick development and growth make them more vulnerable to environmental pollutants. The complex processes of cell division, development of the nervous system and hormonal activity can easily be disrupted by toxic exposure, particularly in the case of the fetus. The resulting abnormal growth and development can lead to permanent immunological disorders, brain disorders, cancer and birth defects. The cause of most birth defects is unknown and may be due to unidentified environmental exposures. In addition, the immune systems of the very young, being less well developed than those of adults, make them less resistant to environmental risks. (1)

A child's faster metabolism and small size subjects them to higher exposures than adults. Also, because children breathe, eat and drink more than adults relative to their body mass, they will ingest more pollutants per pound of body weight. Children's diets, which often include proportionally larger amounts of fruits and vegetables, also contribute to increased pesticides exposure.

An additional risk factor involves activities that engage the typical child. Children tend to play on the ground, amplifying chemical exposure through the inhalation of ground-level contaminants and hand-to-mouth behavior. These behaviors dramatically increase exposure in the case of lead, and in all likelihood, pesticides.

Developing organs and other physiological differences often cause children to absorb a higher percentage of the toxics to which they are exposed. A child's liver and kidneys may not be as efficient as an adult's when it comes to removing toxic substances, while differences in skin and the gastrointestinal tract also can increase absorption. Due to physiological differences, children absorb nearly five times more of the lead they ingest than adults.

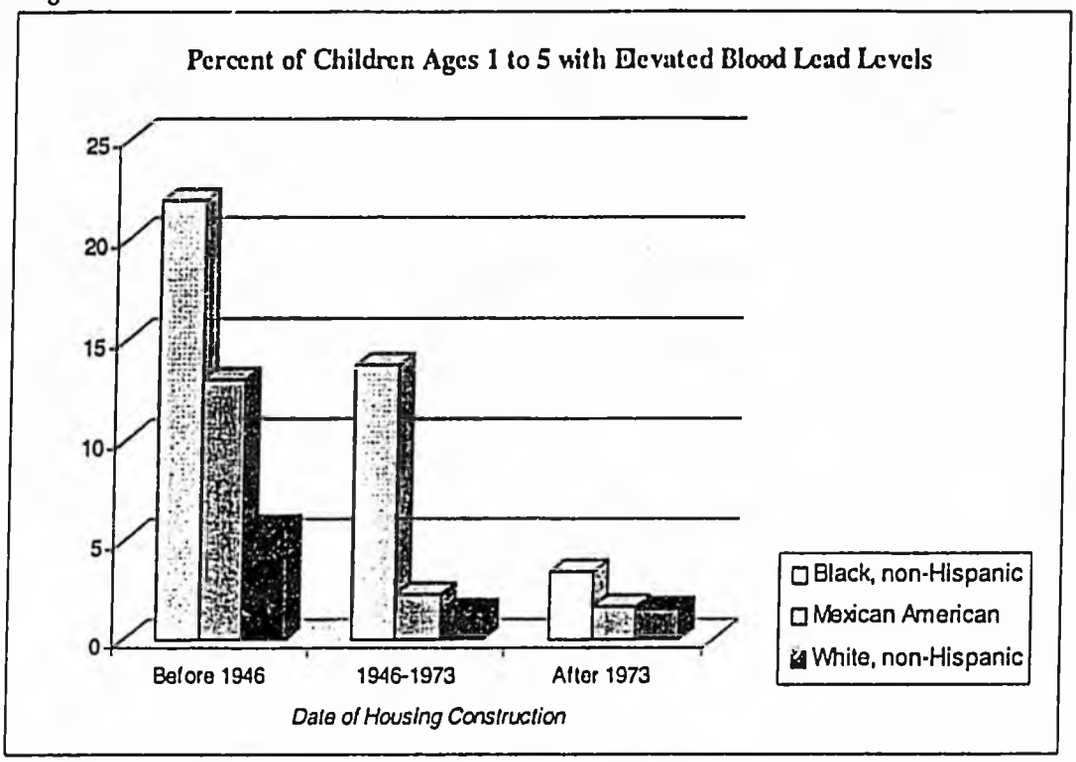
Which Children are Most Affected?

Children of poverty and of color are most likely to suffer from exposure to environmental hazards (see figure 1). Two of the most common hazards—poor indoor air quality and lead-based paint—are common in low-income neighborhoods and are associated with poorly maintained housing. Hazardous waste dumps and industrial sites are more likely to be in low-income neighborhoods than in middle- and upper-class neighborhoods. Additionally, lack of access to health care compounds the treatment of environmentally related health problems such as asthma and lead poisoning.

Toxic Elements

Lead Lead is a leading example of an environmental hazard that disproportionately affects children. Commonly caused by deteriorating lead paint in pre-1978 housing, lead poisoning in

Figure 1.

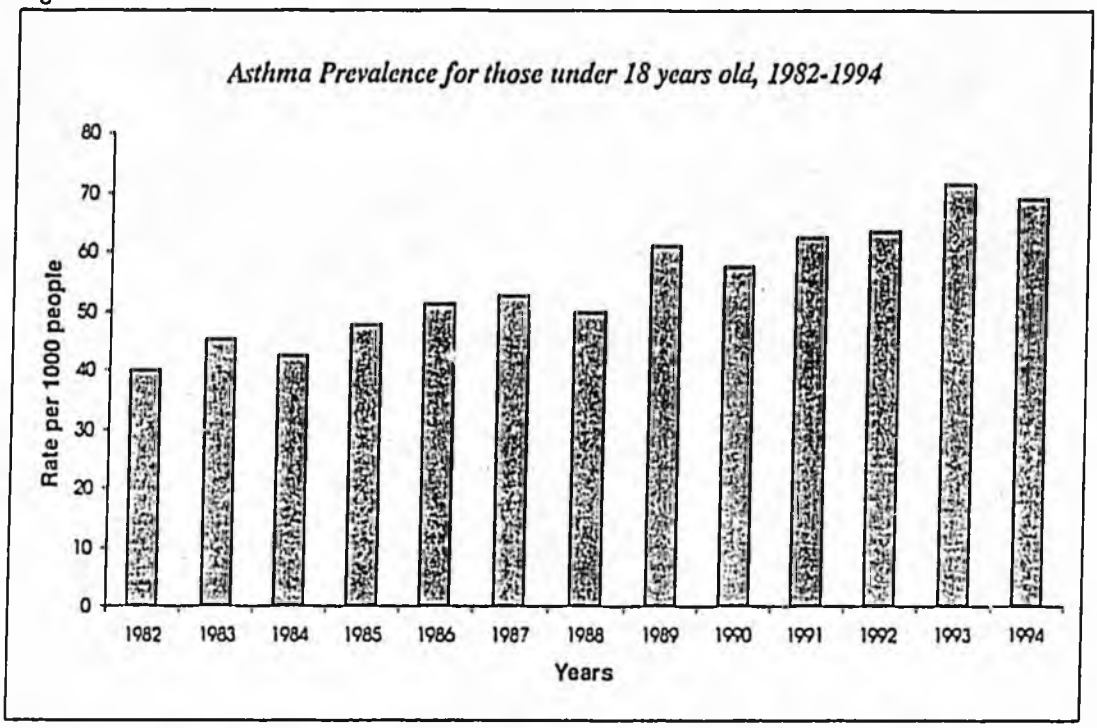


Source: *National health Interview Survey*, National Center for Health Statistics, 1982-1994.

young children can cause learning disabilities, behavioral problems, I.Q. deficits and nervous system disorders. Results of research conducted by the Centers for Disease Control and Prevention (CDC) in 1994 found that approximately 900,000 children suffer from lead poisoning and the potential for permanent health effects. Great strides in reducing lead poisoning have been made during the last 25 years, including the phasing out of leaded gasoline, the elimination of lead-based paint for household use, and the elimination of lead solder in plumbing and food cans. Although these measures have helped to reduce the average levels of lead in children and adults by 80 percent since the 1970s, lead poisoning remains a problem for children who live in older housing and near mining and industrial sites.

Poor Indoor Air Quality Research indicates that indoor air pollution is a potential environmental hazard in many homes and schools. Poor ventilation, lack of upkeep, leaky roofs and use of indoor chemicals such as solvents and pesticides all are associated with poor indoor air quality. One of the most visible results of poor indoor air quality is the rising rate of asthma. Common air pollutants such as cigarette smoke can bring on asthma attacks and increase their severity. Asthma deaths in children and youths increased by more than 100% between 1980 and 1993 (see figure 2), and asthma-related illness is the number one cause of hospital admissions among the nation's children.

Figure 2.



Source: *Trends in Asthma Morbidity and Mortality*, American Lung Association, November 1998.

Poor Outdoor Air Quality According to the U.S. Environmental Protection Agency (EPA), nearly 25 percent of the nation's children live in areas that do not meet national air quality standards. Research shows that particulate matter, ground-level ozone and sulfur dioxide have harmful effects on lung function and the upper respiratory tract. Children are particularly sensitive to these particles, and many studies indicate that lost school days, restricted activity and reduced lung function correspond to increases in air pollutants.

Pesticides Children are exposed to pesticides through household use, eating produce and drinking water that contains pesticide residue. Because children consume significantly more produce and play on the ground where pesticide residues may linger, they can receive higher doses of many different pesticides. Studies have shown that children of parents who use pesticides occupationally or in the household are three to nine times more likely develop leukemia. (2,3) The U.S. Geological Survey recently finished the largest pesticide and water study to date. Within the study regions, it found that 95 percent of streams and 50 percent of wells near agricultural and urban areas contain one or more pesticides. Although most did not violate current safe drinking water standards, these standards are valid only for exposure to individual pesticides, not to mixtures of various pesticides that are present in most contaminated sources. For most of the streams tested, half of which supply drinking water, pesticide levels exceeded aquatic-life guidelines as defined by the U.S. Environmental Protection Agency.

Solvents Some studies have linked occupational solvent exposure of pregnant women to birth defects in their children. Solvents—chemicals that dissolve or disperse other substances—are present in gasoline, paints, paint thinners, glues and many other products. (4,5,6)

Poor Water Quality Children swim in our lakes and streams, and eat freshwater fish. Swimming in polluted freshwater or coastal areas can cause respiratory, gastrointestinal, eye and ear symptoms, and fever. This pollution usually is the result of sewage dumping, industrial effluent and agricultural runoff. Thousands of rivers, lakes and streams across the nation have signs posted that warn pregnant women, children and other sensitive individuals to avoid eating fish caught in these water bodies due to contamination. The EPA states that from January to September 1994, 1,500 fish advisories were posted; 73 percent of these postings were related to mercury contamination, the rest were related to PCBs, pesticides, and other toxics.

Endocrine Disruptors Chemicals such as DDT, PCB and others found in common pesticides are known to disrupt the endocrine systems (the body's chemical communication network) of wildlife and laboratory animals. Humans also may be at risk. Endocrine disruptors can interfere with the hormonal activity in the body during sensitive stages of prenatal development, creating a potential for birth defects and abnormal growth and development in children. They also may promote the development of reproductive cancers. The EPA, CDC and other organizations currently are developing tests and conducting research to find out more about endocrine disrupting chemicals in our environment.

Mercury Mercury may damage the nervous system and cause severe mental retardation and cerebral palsy in newborns of mothers who consume too much mercury-contaminated fish, which occurred on a large scale in Minimata, Japan. The EPA states that from January to September 1994, 1,075 fish advisories were posted due to mercury contamination; more than 40 states have issued mercury fish consumption advisories for at least one of their water bodies. Mercury is a pollutant that can persist in the environment for hundreds of years. The largest sources of mercury pollution are waste incinerators and power plants. When pregnant mothers ingest too much mercury-contaminated fish, it can result in permanent brain damage and cerebral palsy in their newborns.

To better understand the effects of these toxic chemicals, the CDC uses biomonitoring to accurately assess chemical exposures. Biomonitoring uses blood or urine samples to measure toxic substances in the body. These techniques are leading to a better understanding of the environmental exposures that lead to disease.

Federal Policy

Action on children's environmental health has slowly increased in recent years, growing in momentum since the Federal Executive Order of 1997, titled "Protection of Children from

Environmental Health Risks and Safety Risks." This order charges agencies to consider special environmental risks to children in their activities. The EPA created the Office of Children's Health Protection (OCHP) in 1997 to support this order and is cooperating with other agencies to establish federally funded research centers that are devoted to protecting children from environmental health threats.

Food Quality Protection Act (FQPA)—Amends both the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and the Federal Food, Drug, and Cosmetic Act (FFDCA) to make a more consistent, protective regulatory system that is supported by sound science. It mandates a single health-based standard for all pesticides in foods and provides special protection for infants and small children. It also takes into account the possible additive or multiplicative effects of different pesticides from all sources of exposure. To make up for the lack of children's toxicity data, the FQPA requires the EPA to use an additional, tenfold (10X) safety factor in setting tolerance levels, unless "reliable data" for children's toxicity and exposure exists to prove that this unnecessary .

Chemical Right to Know—The EPA intends to promulgate a Children's Health Test Rule under section 4 of the Toxic Substances Control Act (TSCA). This rule will require the testing of chemicals to which children are likely to be exposed, but lack sufficient toxicity data for risk assessment. Manufacturers, importers and processors of the selected chemicals can be required to conduct the tests.

New Clean Air Standards—In July 1997 the EPA issued stricter ozone and particulate matter air quality standards, taking into account children's susceptibility to air pollution. The more stringent standards aim to reduce the effects of outdoor air pollution on asthma and other illnesses.

Asthma Initiative—On January 28, 1999, the administration announced a comprehensive, national $68 million initiative aimed at combating childhood asthma. This program will invest in research to determine the environmental causes of asthma and to develop new strategies to reduce asthma. It also provides funds to states and providers to help them implement effective disease management strategies to lower hospitalizations, emergency room visits and deaths from asthma.

Residential Lead-Based Paint Reduction Act—Enacted in 1992, this law directs the EPA, the U.S. Department of Housing and Urban Development (HUD), and the Occupational Safety and Health Administration (OSHA) to develop lead hazard reduction programs. As a result of this act, states are given the option of developing their own lead programs or having the EPA run a program for the state. As of February 1999, 38 states had enacted legislation to create lead programs.

State Policy

Legislative activity on children's environmental health issues has consisted mainly of bills targeting specific hazards, such as lead poisoning or parental notification before school pesticide use. State legislation that targets children's special vulnerabilities to general environmental hazards did not appear until 1998. Local data—lead notwithstanding—does not exist in relation to children's environmental health. Data that can help guide decisions at the state and local levels still is needed.

Michigan House Bill 4550, introduced in April 1999, proposes the creation of the Office of Children's Health Protection within the Department of Environmental Quality. The goal of this department is to protect children's health while taking into account the special vulnerability of children to pollution in their environment. The bill requires that the office review proposed environmental legislation, statutes and rules, and subsequently make recommendations to ensure children have adequate health protection. The bill also requires the office to coordinate research and public education programs to make parents aware of children's environmental health risks.

California has introduced similar but less comprehensive legislation relating to children's environmental health concerns. Senate Bill 25, introduced in December 1998, requires review of the state's air quality standards to determine if they adequately protect the health of children and infants, and provides for revisions if standards are deemed inadequate. A second California bill, Assembly Bill 1207, introduced February 1999, seeks to protect children at schools and daycare centers from environmental hazards such as radon, asbestos, indoor air pollution and toxic pesticides.

New Jersey introduced Assembly Bill 2069, the "Children's Environmental Health and Safety Rights Act," in May 1998. The bill creates an advisory council on children's environmental health to ensure that risk assessments upon which standards, regulations, and guidance are based adequately consider child-specific susceptibilities. The council also must seek out research on children-specific environmental vulnerabilities and make sure that recommendations include these concerns. The state education department and the departments of environmental conservation and health will revise standards and regulations to reflect the findings of the council.

New York Assembly Bill 2068, the "Children's Environmental Health and Safety Bill of Rights," was introduced January 20, 1999. This bill requires that the departments of Environmental Protection and Health and Senior Services review standards, regulations and guidelines that are intended to protect the environmental health and safety of children, taking into account a child's special environmental susceptibilities. The departments will evaluate risk assessments upon which standards are based and establish procedures to insure that future risk assessments take into account children's sensitivity to environmental hazards. Additionally, the department

should develop new comprehensive policies to address cumulative and simultaneous exposures of children to environmental hazards.

Notes

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2. J.D. Buckley, L.L. Robison, R. Swotinsky, D.H. Garabrant, M. LeBeau, P. Manchester, M.E. Nesbit, L. Odom, J.M. Peters, W.G. Woods, and G.D. Hammond, "Occupational Exposures of Parents of Children with Acute Nonlymphocytic Leukemia: A Report from the Children's Cancer Study Group," *Cancer Research* 49, (1989): 4030-4037.

3. R.A. Lowengart, J.M. Peters, C. Cicioni, J. Buckley, L. Bernstein, S. Preston-Martin, and E. Rappaport, "Childhood Leukemia and Parents' Occupation and Home Exposures," *Journal of National Cancer Institute* 79, (1987): Pages 39-46.

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May 2000
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Asthma: A Growing Epidemic

By Glen Andersen

OVERVIEW

Rates for asthma have steadily increased over the past 20 years in all age groups. Children under age 5 have been the hardest hit, experiencing a two and one-half fold increase.[1] Despite advances in medical treatment, asthma deaths have nearly doubled since 1980 and now total more than 5,000 per year. The economic costs are high as well—an estimated $11.3 billion was spent on asthma treatment and hospitalization during 1988.[2] To date, little is known about the factors that cause individuals to develop asthma, and most states lack comprehensive asthma programs to effectively track and monitor the epidemic.

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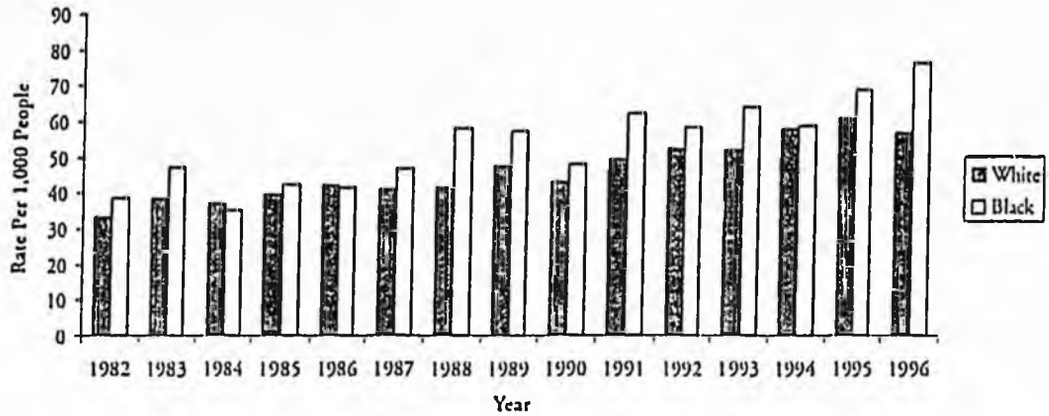
DEFINING ASTHMA

More than 5 percent of Americans have asthma, a chronic disease that inflames of the airways and lungs, causing shortness of breath, wheezing, and—in extreme cases—death. Asthmatics' respiratory systems tend to respond to a specific set of irritants and allergens, such as cigarette smoke, dustmites and air pollution. The airways constrict upon exposure to even very small amounts of these substances, reducing airflow and making it difficult to breathe; this reaction is reversible and varies between individuals and exposures. Breathing during an asthma attack is often compared to breathing through a straw, demonstrating how small the airways can become. Exercise, colds, food additives, and stress can also

Figure 1. Asthma Prevalence Under Age 45



Source: National Center For Health Statistics, *National Health Interview Survey 1996.*

5.7 percent of the U.S. population has asthma.

precipitate asthma attacks. Asthma can not be cured, but can be controlled with medical treatment and environmental intervention.

The medical community has long been aware that asthma can be triggered by allergens, but is still uncertain why some people develop asthma and others do not. Although it is thought that certain genetic components increase the likelihood of developing asthma, most researchers believe that the interaction of environment with genetic predisposition is important in its development. Some scientists believe that ongoing exposure to allergens very early in life may lead to a sensitization of the airways and, ultimately, asthma.[3] Supporting this contention is the January 2000 asthma report from the Institute of Medicine of the National Academies of Science, which states that—based on the scientific literature available—there is sufficient evidence of a causal relationship between exposure to house dustmite allergen and the development of asthma in susceptible children. The report also concludes that there is an association between exposure to tobacco smoke and the development of asthma in younger children.

A growing number of studies show that air pollution also influences asthma. Research has found that common air pollutants—particulates (very small pollutant particles that can reach the lungs), nitrogen oxides and ozone—exacerbate asthma. The American Lung Association found that children with asthma are 40 percent more likely to suffer asthma attacks on high pollution days than on days that do not violate pollution standards. Children are more susceptible than adults to air pollution, since they spend more time outside engaged in vigorous activity. Higher activity levels and longer duration of exposure, combined with a higher breathing rate relative to body weight, result in higher pollutant

exposures for children. Air pollution that may cause negligible breathing difficulties in an adult may seriously impair a child's ability to breathe because of higher exposures and smaller airways. Unfortunately, more than 132 million Americans (nearly half of the U.S. population) live in areas where air pollutants reach unhealthy levels as measured by the Environmental Protection Agency's Air Quality Index.

There is no cure, and no certainty as to what causes asthma.

Why are asthma rates rising?

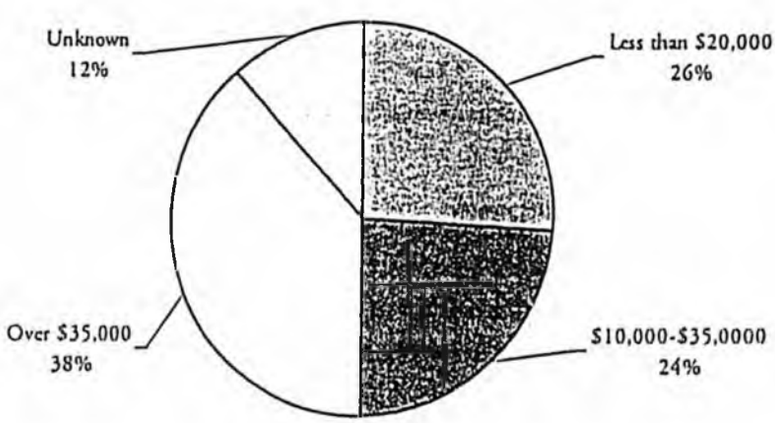
Although conclusive evidence is lacking, the suspected causes of the asthma epidemic are manifold. While genetics is likely to play a role in asthma development, genetic traits change far too slowly to account for the recent increase in asthma cases. Improved recognition and diagnosis of asthma may also play a small role, although research indicates that this change alone cannot explain the recent upward trend.[4]

Given the current state of research, no one is certain what changes could explain the epidemic. Researchers do have suspicions, however: children are spending more time indoors, increasing their exposure to certain allergens and indoor air pollutants, and they are exercising less. More research on asthma's relationship to environmental exposure and genetics will be needed for scientists to determine its cause and remedy.

Asthma Prevalence and Costs

More than 5 percent of the people in the United States have asthma; its prevalence has steadily climbed since the 1980s, rising 75 percent in the general population and 160 percent in children under age 5. Asthma is the most common chronic disease in children and the primary cause of missed school days, responsible for more than 10 million per year.

Figure 2. Asthma Distribution by Family Income



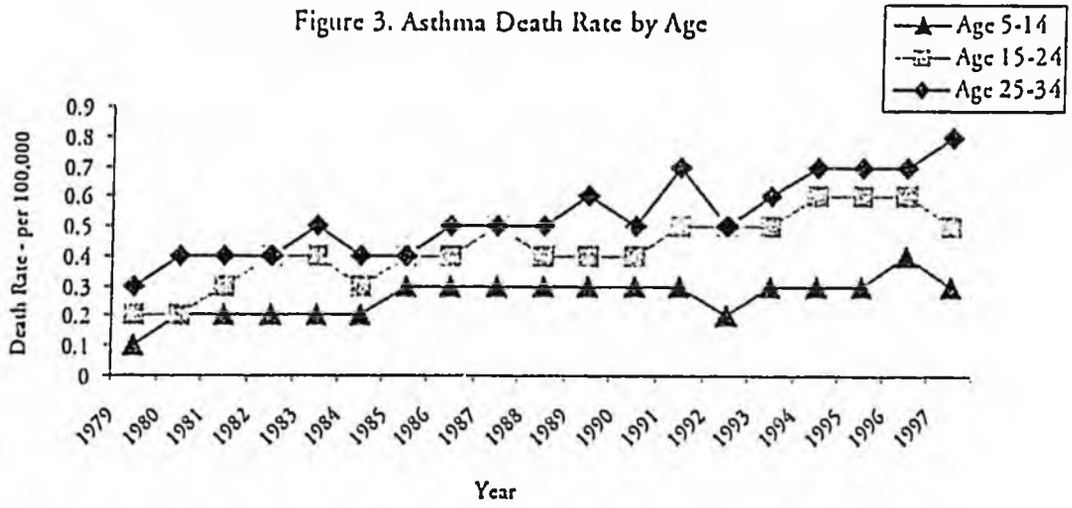
Source: National Center For Health Statistics, *National Health Interview Survey 1996.*

Each year, half a million people in the United States require hospitalization asthma, while over 5,000 die. Hospital visits for asthma have increased to nearly 2 million per year, making asthma the primary cause of emergency room visits.[5] The significant increase in asthma in poor areas—where medical care and follow-up are lacking—means that asthma symptoms are more likely to result in full-blown attacks that lead to costly trips to the emergency room.

Asthma causes 500,000 hospitalizations and nearly 2 million emergency room visits per year.

Although asthma affects people at all socioeconomic levels, poor and minority populations tend to experience a greater burden when measured by the chances of dying or being hospitalized for the disease. The reasons for this disparity, while not fully understood, probably include nutrition, a lack of preventive care, and exposure to higher levels of indoor and outdoor air pollution. A May 2000 report by the Pew Environmental Health Commission projects that if asthma continues to spread unchecked, by the year 2020 it will strike 1 in 14 Americans and 1 in 5 U.S. families.

Figure 3. Asthma Death Rate by Age



Source: National Center For Health Statistics, *Annual Summary of Vital Statistics, 1979-1997.*

Battling the Asthma Epidemic

Although great uncertainty remains about what causes the initial onset of asthma, researchers have gained a good deal of knowledge about asthma treatment. Besides having access to a number of new and more effective asthma medicines, more is known about the exposures that exacerbate asthma and how they can be eliminated or reduced in the asthmatic's environment. Research indicates that carpet removal, frequent cleaning with a special fine-particle filter vacuum cleaner, use of bedding covers that prevent dustmite buildup and

elimination of tobacco smoke are some of the many actions that can be taken to relieve asthma symptoms. Despite this knowledge, there is little evidence that these treatment strategies are being implemented.

Federal Activity

In January 1999, the President's Task Force on Environmental Health Risks and Safety Risks to Children released a report outlining what it considered to be the most effective strategies for fighting childhood asthma. The report acknowledges that asthma is a growing epidemic and that there is "no national system to collect data from states specifically on asthma."

It recommended the following:

1. Focus research on the environmental factors that cause or exacerbate asthma;
2. Implement public health programs that use current scientific knowledge to reduce environmental factors that worsen asthma symptoms;
3. Establish a coordinated, systematic and integrated nationwide asthma surveillance system that includes health outcomes and risk factors at state, regional and local levels and;
4. Identify and eliminate the unequal burden of asthma among the poor and ethnic and racial minorities.

Costs of treating asthma were estimated to be $11.3 billion in 1998.

The administration slated $68 million to address some of these recommendations, with a focus on implementing school-based asthma programs, developing disease management strategies to target low-income children and creating a national public information campaign.

The U.S. Department of Health and Human Services (HHS) outlines its approach to asthma in Healthy People 2010, a document designed to focus the nation's prevention goals. Healthy People 2010 suggests that the focus be on reducing the affect of asthma through education, outreach, and further research for those who already have the disease. The document adds that states need to track asthma and the factors that trigger asthmatic episodes. HHS released its Action Against Asthma strategy in April 2000.

State Activity

In a report released May 2000 by an organization called Health Track, researchers used Centers for Disease Control and Prevention data to determine that most states have no ongoing asthma monitoring program. The study found that 30 states have no timely information that describes asthma within their borders and that only seven states have

"ready access" to statistics on emergency care for asthma. It also found that among the 23 states that track asthma, there is uncertainty as to the adequacy of their tracking efforts.

State legislative activity on asthma tends to fall into three main categories: bills designed to create state asthma programs, bills that deal with asthma medication use in schools, and bills that focus on improving insurance coverage for asthma.

Asthma rates have nearly doubled during the last 20 years.

When House Bill 1012 was signed in March 2000, Virginia became the first state to pass a law that requires the development of a comprehensive, statewide asthma strategy. The law requires the commissioner of the Department of Health to create an asthma plan that includes disease surveillance, public and professional education, and public and private partnerships with health care providers, local school divisions and community coalitions. It also requires identification of best practices for use in public health and clinical interventions. Funding for the program is designated to be from "such funds as may be appropriated" and from grants.

California, New York and North Carolina have introduced bills aimed at developing statewide asthma management and control programs. Other states have introduced legislation that would provide for the development of task forces to study asthma in the states and schools, and for asthma education.

In August 1999, Illinois enacted legislation requiring that the Department of Public Health work in conjunction with state and community-based asthma programs to develop and administer an informational program about asthma and its treatment. The program is targeted at high-risk population groups.

Twelve states passed legislation allowing students to carry and use asthma inhalers on school grounds. These bills were introduced in response to a number of school no-drug policies that required that asthma sufferer's medication be locked in the nurse's or principal's offices.

Nine states have enacted legislation to improve health care access and coverage for asthma sufferers.

Notes

1. Surveillance for Asthma - United States, 1960-1995, *Morbidity and Mortality Weekly Report*, 47, no. SS-1 (Atlanta Georgia, 1998).

2. National Heart, Lung, and Blood Institute Data Fact Sheet - Asthma Statistics, National Institutes of Health (1999).

3. Elaine Friebele "The Attack of Asthma," *Environmental Health Perspectives* 104, no. 1 (January 1996).

4. Kevin B. Wess and Diane K. Wagener, "Changing Patterns of Asthma Mortality," *Journal of the American Medical Association*, 264, no. 13 (October 3, 1990).

4. State of the Air 2000, American Lung Association (2000).

5. Vital Health Statistics, Ambulatory Care Visits to Physician Offices, Hospital Outpatient Department and Emergency Departments, National Center for Health Statistics 13, no. 134 (1998).

DEC *NEWS RELEASE*

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October 26, 2001

DEC gives Anchorage School District Beyond Compliance Award for pesticide management policy that helps protect children's health.

New regulations for pesticide use by all Alaska schools signed.

As part of National Children's Health Month, Alaska Department of Environmental Conservation Commissioner Michele Brown today gave the Anchorage School District a Beyond Compliance Award for the District's pesticide management policy. Brown also signed new regulations on the use of pesticides in state and private schools throughout the state.

"The Anchorage School District's policy to protect the health of our children is one of the most progressive in the nation and is a good model for other Alaska school districts," Commissioner Brown said. "Children are most susceptible to possible impacts from chemical pesticides and these new measures gives them much better protection."

ASD Superintendent Carol Comeau accepted the award on behalf of the School District. Comeau and the Commissioner also thanked Alaska Community Action on Toxics and Alaska Youth for Environmental Action for their involvement in the development of the district-wide pesticide management policy.

The policy was put in place early last year by ASD and the new regulations for pesticide use by all Alaska schools, signed by Commissioner Brown today, will become law later this winter.

The school district's pest prevention and management strategies use the following guidelines:

- Least disruptive of natural controls.
- Least hazardous to human health.
- Minimal negative impacts to non-target organisms.
- Least damaging to the school and natural environment.
- Most likely to produce long-term reductions in pest control requirements.

The new regulations take clear steps to limit student and staff exposure to pesticides. The rules include:

- Schools must use nonchemical methods to control pests whenever possible.
- School must notify parents at least 24 hours before applying any pesticide which children would come in contact.

- Treated areas must be posted with a sign and the area restricted until it is safe to enter.
- The person who applies or supervises the use of most pesticides on school premises must be certified by the state.
- Certified applicators must keep records on the use of general use pesticides.

Superintendent Comeau said, "I really want to commend the students with the Alaska Youth for Environmental Action and Alaska Community Action on Toxics for bringing this issue forward. It shows that the public process works. Our new policy promotes a healthy and safe school environment for students and staff. We will use non-chemical measures first, with pesticides used only as a last resort and with parental notification."

Brown also lauded the efforts of the Alaska Community Action on Toxics and youth from the Alaska Youth for Environmental Action for their initiative in calling for the policy. "We've gotten in front of a problem plaguing other school districts in the nation. ACAT and these involved young people worked hard to see these rules made, and their foresight will protect the health of school children in the future."

Pam Miller, director of ACAT, said, "We started calling for a district-wide pest management policy in the summer of 1999 because we were concerned about the health effects of certain pesticides, especially among young people. It took over a year, but we were very pleased with the outcome and the cooperative working relationship we had with the Anchorage School District in developing this policy. The students at AYEA were instrumental in assuring the success of getting the policy in place."

AYEA student Corey Rennell said, "I am overjoyed to hear that the state is implementing statewide regulations from the ideas some AYEA students helped create for the Anchorage School District. It was amazing to see an idea we developed evolve into a working, effective, and progressive plan to help protect public health in Alaska. Through testifying, extensive collaboration, lobbying, and media work, our voices were heard by the school district and our hopes were achieved. It is so fulfilling now to see the work of a few in the community spread to benefit the whole state."

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ACAT

Alaska Community Action on Toxics

Bill seeks to track use of pesticides in public

By DAN JOLING
The Associated Press

JUNEAU -- Parents would be able to monitor pesticide use in schools, parks and other public places under legislation proposed by an Anchorage lawmaker.

At a luncheon hosted by Alaska Community Action on Toxics to explain the bill, Rep. Sharon Cissna said Alaskans don't know how much pesticide is being used and where it's being used in the state. She also said not enough is known about links between pesticide exposure and disease.

"Those things made me feel really strongly that we need to take a step," said Cissna, D-Anchorage.

The bill is a small step, she said. House Bill 356 would require certified pesticide applicators to report pesticide use to the Department of Environmental Conservation. Applicators are required to collect the information now but not required to report it, Cissna said.

The bill requires DEC to establish a pesticide tracking system readily available to the public and to integrate pesticide tracking with other data bases such as the cancer registry to see if there is a correlation between pesticide use and disease.

Cissna said the program would be paid for by charging pesticide manufactures a $150 registration fee for every type of pesticide used in the state. Alaska is the only state that does not require such a fee. Pesticide applicators would pay a $25 annual registration fee.

The bill also would set up a nine-member Pesticide Advisory Board to research ways to limit public exposure to pesticides.

The bill would not track pesticides in households.

As a member of the House's Democratic minority, Cissna may have difficulty pushing the bill through the Legislature. The bill was referred to three committees in the House and had not been scheduled for a hearing as of Tuesday.

Michelle Wilson of Angoon, a spokeswoman for Alaska Community Action on Toxics, said pesticides cover everything from insect sprays to herbicides. In public buildings, they often are used to control silverfish or spiders. Homeowners often use pesticides and herbicides in their gardens.

Susan Schrader of Alaska Conservation Voters said protecting children from prolonged exposure to pesticides is as important as providing good schools. Pesticides are potentially damaging to their immune, nervous and reproductive systems, she said. Senior citizens and nursing and pregnant women also are susceptible.

She said Alaskans are exposed to pesticides when they visit ferries, schools or Pioneers' Homes, and Cissna's bill would allow Alaskans to judge their exposure.

"This basically is a right-to-know bill," Schrader said.

Wilson said the Anchorage School Board is close to adopting a "least toxic" approach to controlling pests that calls for using pesticides as a last resort. She said the district often used pesticides as its first choice before embracing the new policy.

"It's the most progressive pest management policy in the country," Wilson said.

Michelle Wilson of Alaska Community Action on Toxics discusses public awareness of pesticide use as her son Elijah Wilson Nordholt, 2, snacks on organic fruit Tuesday at the Cafe Myriad in Juneau. Rep. Sharon Cissna, D-Anchorage, sponsored the luncheon to talk about a bill that would set up a tracking system for use and sales of pesticides in Alaska.

Wednesday, February 23, 2000 ☆☆ Anchorage Daily News

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ANCHORAGE DAILY NEWS
THURSDAY, February 24, 2000 ☆

Alaska Community Action on Toxics

School Board cuts pesticide use

By PETER PORCO
Daily News reporter

The Anchorage School Board on Wednesday night agreed to restrict the use of pesticides in local schools. The new policy allows pesticides to be used only when bugs threaten health or safety.

The unanimous vote — the second on the issue in two weeks — was a victory for a group of students, teachers, parents and activists who convinced school district administrators that routine spraying posed a health risk and was unnecessary.

"I really believe this policy is precedent-setting, not only for the state but for the country," Pam Miller, program director for Alaska Community Action on Toxics.

"Specifically it says that pesticides will be used only as a last resort."

Under the district's previous plan, the exteriors of all schools were sprayed at least once a year with carbaryl, a federally regulated pesticide. Carbaryl can be toxic when ingested in large quantities but is considered safe when used properly, according to the state Department of Environmental Conservation.

The district's carbaryl spraying occurred usually in August, without notice to parents and school staff.

The new plan calls for notification of students, parents and staff whenever a building is to be treated with a pesticide. But the plan calls for nonpesticide control measures — caulking cracks in walls and floors and keeping facilities as clean as possible, for example — to be tried first.

Pesticides may be used "only if pests present a health and safety hazard, not for aesthetic or nuisance purposes," the plan states.

Superintendent Bob Christal commended Alaska Community Action on Toxics, which spearhead the drive to reform the district's pest management plan. After meeting with group members and other activists last summer, Christal ordered a review of the district's pest-management policies and suspended the annual spraying of carbaryl.

The organization reviewed a draft of the plan and made recommendations, said Stanley Syta, the district's director of operations.

"This has been a collaborative effort," Syta said last week at the board's hearing on the policy. "Central to the plan is notification" for those using the buildings.

The plan establishes a new position of pest management technician, whose salary will be about $40,000 a year, officials said. The district will save about $20,000 if it doesn't spray.

The use of pesticides in schools has been brought to the attention of the Legislature. State Rep. Sharon Cissna, D-Anchorage, has introduced a bill that would enable parents and others to monitor the use of pesticides in public places.

On a national level, the General Accounting Office, the investigative arm of Congress, tried unsuccessfully to determine the amount of pesticides used in the nation's schools, the degree to which children are exposed to them, and how their health might be affected, according to the National School Boards Association.

Several U.S. senators are trying to pass bills that would make schools notify the community before they use pesticides and to have schools adopt the least-toxic approach, the association said.

"I really believe this policy is precedent-setting, not only for the state but for the country."

— Pam Miller, Alaska Community Action on Toxic

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ACAT
Alaska Community Action on Toxics

chorage Daily News

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FINAL EDITION

Lead Story
Front Page
Anchorage Daily News

Schools cancel spraying

District reviews pest-control efforts

By PETER PORCO
Daily News reporter

In response to the concerns of parents, teachers and activists, the Anchorage School District said Thursday it was canceling its annual August insecticide spraying on all city schools.

The district is also reconsidering its entire pest-management program, Superintendent Bob Christal said. That includes studying the adoption of a "least toxic" approach, which favors other means of controlling insects, spiders and rodents, keeping pesticides as a last resort.

"That would be trying to combat pests by getting at the root of the problem, so you make sure food sources and their favorite habitat are eliminated," said Stanley Syta, the district's operations director.

Michelle Wilson of Alaska Community Action on Toxics said she was thrilled with the decision. The citizens group had urged the district to review its pest-management practices and notify building occupants and students' parents when pesticides are to be used.

The district's first comprehensive review

Please see Back Page, SPRAYING

SPRAYING: District cancels annual pesticide application

Continued from Page A-1

of pest control in its schools began last month. Officials will consult experts in and out of state, and hope to have a policy in place about the end of October, Christal said.

In the meantime, the district will inspect the inside and outside of every school before the school year starts Aug. 31, Christal said, and pesticides will be applied if a pest emergency warrants.

Officials will also "make every effort to notify the school community, including students, parents and staff, in advance of any pesticide application," he said.

Christal has formed a working group to study the problem and recommend pest-control practices, he said. The group consists of Syta as well as the district's risk manager, its directors of food service and student nutrition and a school principal. Its report is due Oct. 15.

Wilson said the group should also include a student and teacher, a physician and a member of her group.

"We can give comments to the working group, but we want to play a more active role," she said.

Syta said the district could not involve a lot of people and still complete the process on time. The public will have a chance to comment on the plan, he said.

Pest control is necessary because schools are also places where children eat and food is prepared, Christal said.

For many years the district has had the chemical carbaryl sprayed annually around the outsides of all public schools to kill spiders and insects. The spraying occurs mostly in August near the beginning of the school year.

"We do this when the kids are not around" in the summer and during holiday breaks, said Everett Walton, an owner of American Pest Management, the district's contractor.

Carbaryl has been approved by the federal Environmental Protection Agency. It can be toxic when ingested in large quantities but is considered safe when used properly, said Rosemarie Lombardi, pesticide specialist for the state Department of Environmental Conservation.

Carbaryl is commonly used to combat spruce bark beetles in Southcentral Alaska. The solution sprayed around schools — on the walls below ground-floor windows and on the ground within four feet of the wall — is one-fourth the strength used to protect trees, Walton said.

An EPA official in Anchorage said carbaryl has been used for many years. It belongs to a different class of pesticides than two others that the EPA banned with much fanfare earlier this month because of their potential effects on children.

"Nothing has shown up yet with carbaryl," said Rick Albright of the EPA's Alaska operations office. "But there's no guarantee nothing will show up."

Karl Arne, an EPA pesticide specialist in Seattle, recommended against using carbaryl or any other pesticide if other pest-control options are available, saying the agency supports the broad approach known as integrated pest management.

"Pesticides are an easy solution to a lot of pest problems, but they may cause problems," Arne said. Questions arise regarding the toxicity of chronic exposure to carbaryl and other substances, he said.

The "least-toxic" approach, which Wilson's community action group and others recommended in a meeting with Christal last month, will be considered, Christal wrote to Wilson in a letter Wednesday.

Reporter Peter Porco can be reached at pporco@adn.com and at 257-4582.

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ACAT

Alaska Community Action on Toxics

ANCHORAGE DAILY NEWS

THURSDAY, March 18, 1999 ★

Herbicide creates hubbub

Railroad revives controversy with plan to spray tracks

By ROBERT KOWALSKI
Daily News Juneau Bureau

JUNEAU — In a move that already is generating controversy, the Alaska Railroad is planning to spray toxic chemicals this summer to rid vegetation from 86 miles of its tracks in areas stretching from the Kenai Peninsula to Fairbanks.

The railroad last week asked the state Department of Environmental Conservation to approve a permit so it can spray the herbicide glyphosate along the rail bed and rights of way in six locations.

There is a long history of opposition to such proposals in the state. Herbicide spraying plans by the railroad in 1988 and by the state Department of Transportation in 1994 faced such a huge public outcry that they were withdrawn or blocked. The last time herbicide spraying was used in the state was in 1984, when a federal judge ordered the railroad to stop.

The railroad has decided now that other methods of weed control, including burning, steam spraying and hand cutting, aren't effective. Vegetation weakens the rail bed and creates hazards for rail-yard workers and train engineers.

"We have an acute safety problem. ... We need to do something," Alaska Railroad spokesman Ernie Piper said Wednesday. "Some of this stuff is chest high."

If the railroad's plan is approved, it would change Alaska's status as a herbicide-free state on transportation systems. No state agency uses toxic chemicals for vegetation control in Alaska now, said Rosemary Lombardi, an environmental specialist with the DEC's pesticide program.

Less than a week after the railroad applied for a permit, it already is facing objections.

"It's distressing to see the railroad once again propose to use these toxic chemicals on a large scale in Alaska's environment," said Kay Brown, executive director of the Alaska Conservation Alliance. "I wish the railroad

Please see Page C-3, GLYPHOSATE

Use of herbicide by Alaska Railroad 'will lift lid off boiling pot'

Continued from Page C-1

would reconsider."

"It's lifting the lid off of a boiling pot," said Sen. Kim Elton, a Juneau Democrat who remembers the last time the state proposed chemical spraying. "I think this is a significant public-policy issue."

Piper said the railroad has begun an information campaign to demonstrate the benefits of chemical spraying and what it believes is the benign nature of the herbicide it wants to use.

Last week the railroad hand-delivered letters about the plan from its president, former Gov. Bill Sheffield, to numerous state legislators, including those whose districts lie along the railbelt.

The DEC has scheduled five public hearings around the state beginning next week.

"The thing that's critical in any kind of effort is to be totally transparent," said Piper. "We're confident of its safety. ... We don't view this as a tradeoff between the environment and economy."

Elton thinks the railroad is smart to start informing the public of its plans now.

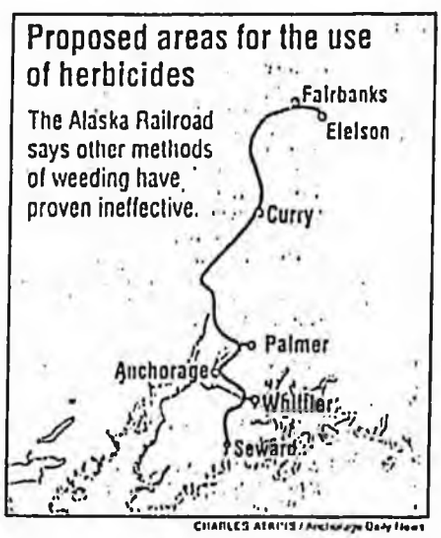
The railroad plans to spray a glyphosate chemical known as Roundup, which is commercially produced and is available in hardware stores and gardening shops nationally.

The chemical would be sprayed to kill weeds in rail yards in Anchorage, Fairbanks, Whittier and Seward, and along stretches of track in Palmer, Elelson, at the Fairbanks airport rail spurs and the siding in the Curry area north of Talkeetna.

The railroad intends to apply a total of 150 gallons of the chemical over a total area of 160 acres, starting in June, Piper said.

The railroad has earmarked $300,000 for glyphosate spraying this year out of a $1.4 million budget for vegetation control along its 525 miles of tracks, Piper said.

The railroad spent $1 million since 1990 studying ways to clear brush from rail beds before deciding chemicals were necessary, Sheffield said in his letter to lawmakers.



CHARLES ATKINS / Anchorage Daily News

One advantage of a herbicide is that it kills root systems, Piper said. The railroad chose its locations for spraying because they aren't heavily used by the public, he said.

"The yards were the most practical places to do it," Piper said. "People aren't picking berries in there."

Glyphosate, Piper said, is a benign substance that clings to soil where it is applied and doesn't readily spread into groundwater.

The last time the railroad proposed using chemicals to control vegetation, in 1988, it was blocked by an order from Gov. Steve Cowper. The railroad had planned to use chemicals other than glyphosate at the time.

But glyphosate has faced opposition in Alaska before.

In 1994, the state Department of Transportation received DEC approval to spray another commercial herbicide that contains glyphosate, Rodeo, to clear brush along 90 miles of roadways in eight Southeast Alaska communities.

The department canceled that plan after hundreds of Southeast residents and environmental groups protested.

And some environmental groups believe glyphosate poses environmental hazards that are serious enough to call the railroad's plan into question.

"They're trying to claim that the herbicide glyphosate ... is benign," said Pam Miller, of the group Alaska Community Action on Toxics. "I think that's an outright lie."

The Northwest Coalition for Alternatives to Pesticides, an Oregon group, studied glyphosate and concluded in a 1998 report that the chemical and substances it is mixed with can have toxic effects on plants, animals and people.

There also is evidence that it causes genetic damage, said Caroline Cox, editor of the Journal of Pesticide Reform, which the group publishes.

"That presents a scary thought for using it along a large number of miles of Alaska Railroad," she said.

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GLYPHOSATE

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ACAT

Alaska Community Action on Toxics

Anchorage Daily News

Saturday, October 9, 1999

Alaskans need treaty to fight toxic chemicals

By PAMELA K. MILLER

COMPASS

The north is a hemispheric sink for many toxic chemicals. Pollutants suchas polychlorinated biphenyls (PCBs), pesticides and other industrial chemicals are transported northward by wind and ocean currents and are trapped by the cold air. These chemicals accumulate in the fat tissues of polar bears, fish, whales and humans. Compared with countries such as Canada, the United States has not been responsible in implementing a northern contaminants assessment program that would help us to understand the health impacts of pollutants in foods. Although far from a complete picture, the scientific evidence of damage is disturbing.

Recent studies have shown that chemicals such as PCBs and DDT are carried into Interior Alaska lakes in the bodies of spawning salmon that deposit contaminated roe. Other studies confirm high levels of DDT and PCBs in the bodies of killer whales in the Gulf of Alaska and DDT in eagles from the western Aleutians. Whether transported from thousands of miles away or leaking from the many military and industrial contaminated sites in Alaska, persistent chemicals such as PCBs, pesticides and dioxins present a significant public health issue.

Whether transported from thousands of miles away or leaking from the many military and industrial contaminated sites in Alaska, persistent chemicals such as PCBs, pesticides and dioxins present a significant public health issue.

From Sept. 6-11, delegates from 120 countries met in Geneva to negotiate a treaty to reduce or eliminate some of the world's most toxic chemicals, a class known as persistent organic pollutants (POPs). These chemicals present potent threats to humans and wildlife on a global basis because they can travel thousands of miles, accumulate in the food chain, and may persist in the environment for centuries. POPs now reside within the bodies of every living organism on earth. Exposure to POPs can cause birth defects, certain cancers, immune system disorders and reproductive problems. They may also reduce our ability to fight disease and diminish the intelligence of children.

In response to concerns from people around the world, the United Nations Environment Programme took the lead in facilitating international efforts to control POPs on a global basis. UNEP called for international action to reduce or eliminate POPs, including the development of a legally binding treaty before 2001. Twelve pesticides and industrial chemicals have been identified by the UNEP that require urgent action because they are potent threats to environmental and human health on a global basis.

Heila Watt-Cloutier, president of the Inuit Circumpolar Conference Canada, told delegates that the breast milk of Inuit women contains concentrations of certain POPs that are five to 10 times higher than women in southern Canada. Faith Gemmill, representing the Gwich'in Nations, stated, "As indigenous peoples, we are greatly concerned when we realize evidence which suggests that women, infants, and children are very vulnerable to POPs. This threatens the very existence of our peoples and cultures. The multigenerational impacts threaten our hope of healthy, thriving and productive future generations."

Physicians for Social Responsibility facilitated participation of 180 public interest organizations at the negotiations in Geneva from 40 countries. These public interest groups are part of the International POPs Elimination Network. IPEN focuses on achieving a global treaty to phase out and eliminate POPs. We were there to encourage delegates to act swiftly to implement a strong global treaty. We were there to remind the delegates that this is not an abstract issue for us, but one that affects the safety of our water and food, our health and the health of our children.

As David Prince of Mossville, La., a primarily African-American community near large plastics manufacturing plants, noted at the conference, "We wanted the delegates here to know that laws, policies, and industry practices in the U.S. are not currently protecting us. Because of the many illnesses that are now occurring in Mossville and other parts of the U.S. and around the world, we hold out the great hope that all governments attending here will adopt a treaty to eliminate the production of all POPs, including dioxins." We now know that toxic releases from chemical plants in Mossville or pesticide spraying in Mexico may affect us here in the north. POPs respect no political boundaries.

People in Alaska have an historic opportunity to encourage the United States to enact a strong treaty that will eliminate major sources of toxic pollution that affect our health. Alaska senators will have a particularly important role in ratifying the treaty. For more information or to get involved, please call Alaska Community Action on Toxics at 222-7714.

©Biologist Pamela K. Miller is the program director for Alaska Community Action on Toxics, based in Anchorage.

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Pesticides found in Aleutian Island eagle eggs

By John Roach
Saturday, October 02, 1999

Bald eagle eggs in Alaska's pristine Aleutian Islands have been found to contain elevated levels of organochlorine pesticides — startling evidence that the contaminants can travel long distances and affect wildlife in remote locations.

Organochlorines are chemical compounds used to kill agricultural insect pests. Unfortunately, they are long-lived, toxic to most animals and can be converted to even more deadly compounds as they degrade or are eaten and released into the environment.

Some organochlorines, such as DDT, are banned in the United States, but many others are still regulated for use, said Bob Anthony, a U.S. Geological Survey scientist and lead author a report published in the September issue of *Environmental Toxicology and Chemistry*.

The report adds to a growing body of research that indicates organochlorine pesticides can travel long distances. Evidence suggests the pesticides are transported via atmospheric and ocean currents, as well as via seabirds who eat contaminated fish in parts of the world where organochlorines are used.

There is even the possibility that the military took DDT up to the Aleutians and once they determined they had no use for it, dumped it in a bay. "We do know that the bays heavily used by the military over time do show the highest levels of PCBs," said Anthony.

The most likely source of contamination is migratory seabirds that may feed on contaminated fish in southern latitude waters. When bald eagles eat those seabirds, they may accumulate the contaminants.

As evidence, Anthony and his colleagues point out that eagles on Kiska, the westernmost of the islands, had a diet composed of 60 percent seabird, whereas on the innermost islands, seabirds only made up 25 percent of the diet. Eagle numbers per nest on Kiska, unlike the other islands, were dangerously low.

"The high proportion of seabirds in the diet of eagles from Kiska island could be the major source of DDE and mercury contamination," Anthony said in a statement.

"That is where it (the research) is leading us," he added in an interview, "but we don't want to rule out the possibility that it might be arriving via atmospheric and ocean currents."

The researchers are one year into a four-year study on the source of elevated levels of DDE and mercury in nearshore marine communities in which bald eagles forage.

READER FORUM

Don't wait for a crisis

Parents and state and federal officials need to move to protect children from health problems because of pesticides

Upon arriving in Portland recently, I was dismayed to read an opinion piece by Dr. Allan Felsot (Sept. 21) concluding that "there is no health crisis due to pesticide use." While this may be a fair statement, I think most readers would agree that we don't need to wait for a "crisis" before acting to protect the health of our children.

As a physician, I believe that preventing health problems is as much a part of my job as treating them. I believe all physicians have a responsibility to work toward reducing children's exposure to pesticides and other toxic chemicals.

Every day, scientists learn more about the health threats posed by pesticides, especially those that affect our children's health. Based on the current state of the science, it appears that some pesticide-related health problems are much more significant for the fetus and infant (as compared to an adult) because of the rapid growth and development of certain organ systems early in life. Injury to the developing child's immune, hormone and nervous systems is of special concern. It is now well established that relatively low-level exposures to toxic chemicals, occurring at critical stages of development, can cause permanent damage to these systems. The results of such injuries may range from poor school performance and behavior to alteration of the reproductive organs.

Children also differ in their exposure to toxic chemicals in their environments. For example, children behave like children. Few adults place their toys in their mouths. Few adults spend most of their free time crawling around on the floor. Few adults spend most of their free time outdoors playing in the dirt. In addition, children have much greater skin surface in relation to their weight than adults, and often wear fewer clothes.

Children eat differently. They drink far more fluids. They are far more prone to binge eating of a single food. They breathe differently. Children at one year of age breathe 50 percent more air each minute relative to their weight than do adults.

Because of these differences, children's potential exposure is greater, thereby putting children at greater risk of pesticide-related illness. Obviously, avoiding exposure to these chemicals is prudent. Unfortunately, it is also often difficult. Pesticides are more widely used in our communities and in our own homes than most of us realize. Children may be exposed to these poisonous chemicals in the food they eat, when they are at school, around pets treated for fleas, and on playgrounds and fields. In agricultural communities, children have even greater potential for exposure from contaminated well water or directly from their parents' work clothes.

Health experts still can't say exactly which pesticides cause which health problems, in part because we don't know what children are being exposed to in the real world. Researchers need reliable information to understand whether pesticide exposure is linked with childhood diseases such as cancer, learning disabilities, or hormone system injuries. Good science relies on good data. Right now, Oregon has no system for tracking pesticide use to allow it to answer some basic, yet specific, questions about children's exposure.

With a pesticide tracking system, health researchers won't have to make assumptions about pesticide use and exposure. As Felsot asserts, lumping all pesticides together obscures the real trends. On this count, I couldn't agree more. Pesticide use data would allow researchers to better identify risks associated with specific types of pesticides, as opposed to making generalizations about pesticides as a whole.

Clearly, the time has come for us to take steps at both the state and federal levels that prevent adverse health effects to children from toxic chemicals in the environment. At the federal level, the Environmental Protection Agency must protect children from pesticide residues on food by implementing the federal Food Quality Protection Act as Congress intended. As a member of EPA's advisory committee working on implementation of this law, I can say that we are still not sufficiently protecting infants and children from pesticide risks.

On a personal level, parents should heed these warnings and avoid exposure to pesticides in the home and garden. At the state level, simply collecting better information on which pesticides our children are being exposed to is crucial for understanding the health impacts of these chemicals and preventing exposure. Ignorance is not bliss when it comes to pesticides and children. We simply need strong policies, reliable information and sound research, so that we can prevent a "crisis" because of pesticide use.

J. Routt Reigart, M.D., is a professor of pediatrics at the Medical University of South Carolina and chairman of the U.S. Environmental Protection Agency's Children's Health Protection Advisory Committee.

Alaska Science Forum

November 2, 1995

Unwanted Traveler Settles in Alaska Trees
Article #1259

by Ned Rozell

This column is provided as a public service by the Geophysical Institute, University of Alaska Fairbanks, in cooperation with the UAF research community. Ned Rozell, is a science writer at the institute.

Being the wonderful place it is, Alaska attracts migrants of all shapes and forms--from ducks winging their way north in the springtime to humans towing both trailers and dreams of life in the Last Frontier. Because of its location on the globe, Alaska also draws its share of wind-carried pollutants from other areas of the earth.

In a recent study by Indiana University researchers, samples of Alaska tree bark showed high concentrations of pesticides that were sprayed on crops possibly half a world way. The Alaska results were part of a worldwide analysis of tree bark performed by Ronald Hites, a chemistry professor at IU in Bloomington, Indiana, and Staci Simonich, who earned her doctorate degree with the research and now works with Proctor and Gamble in Cincinnati.

Northern areas such as Alaska become home to pesticides hitching a ride on the wind because of what Simonich calls a "global distillation process," where airborne pollutants are carried from warm to cold areas. Once in a cold area, they settle on vegetation, soil and bodies of water.

Picture it this way: a farmer growing rice in India sprays his crop with an insecticide, some of which misses the mark and floats in the air. The wind picks up the chemical particles and carries them northward. When the particles collide with cold air over northern parts of the globe, they change from a gas to a liquid and settle out in a new home. Hites likens this condensation process to the steam from a coffee cup set on the dashboard of a cold car. The steam rises until it hits the cool surface of the windshield; there it reverts back to a liquid as an annoying foggy patch on the glass.

Tree bark provides a unique landing pad for condensed pesticides. Tree bark contains fats, called lipids, which help create a waxy coat that prevents the tree from losing too much moisture during dry periods. These lipids act as a magnet for the condensed insecticides.

With the help of friends and colleagues, Hites and Simonich collected 200 tree bark samples from all over the world. Simonich asked a friend who worked in the lab and was traveling to Alaska to gather a

few samples. The bark fragments, some collected from a variety of tree species near Denali National Park, showed a high level of lindane. Lindane is the active ingredient in pesticides used to kill aphids and other insects that plague agricultural operations varying from tree plantations to rice farms.

Simonich said the level of lindane found in Alaska tree bark isn't high enough to harm people, wildlife, or trees, but it is a good indicator of how far pollutants can travel. She said the lindane found in Alaska tree bark could have originated from local sources--although it's not likely due to the scarcity of Alaska farms and tree plantations--or from as far away as India.

In the study, published in the Sept. 29 issue of *Science*, Hites and Simonich found high lindane concentrations in tree bark from other high-latitude countries such as Norway, Canada, Sweden, Scotland and Russia. Simonich said the bark samples from Norway were gathered from a particularly remote site, which buttresses the theory that lindane--a chemical that easily changes from gas to liquid--travels on the wind toward the cold regions of the globe.

Simonich said the tree bark actually cleans the air of such compounds, but the fate of pollutants after trees die and bark decays isn't as clear. In a sense, Alaska trees could be cleaning the earth's atmosphere by collecting the remnants of pesticides sprayed on the other side of the globe.

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BASIC INFORMATION ABOUT PESTICIDES

WHAT IS A PESTICIDE?

By law, a pesticide is "any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest." This definition includes insecticides, herbicides, fungicides, rodenticides, and antimicrobials as well as plant growth regulators, defoliants and dessicants.

It is important to note what this definition does *not* include. Pesticides kill or damage pests, but they don't solve pest problems. Solving a pest problem requires identifying the factors that allow the pest to thrive, and then changing those conditions so that the pest is no longer successful. At best, pesticides provide short-term respites from pests, and require repeated treatments to keep pest populations low.

Pesticides are unique chemicals. Designed to kill or damage living things, they are, as the National Research Council has written, "perhaps the only toxic substances that are purposefully applied to the environment."[1]

A Legal Definition

The term pesticide is defined by the national pesticide law, the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). According to FIFRA, a pesticide is "any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest."[2] FIFRA also adds plant growth regulators, defoliators, and desiccants to the legal definition of pesticides.[2]

"Pesticide" is commonly used as a synonym for insecticide, a substance which targets insect pests. However, under the legal definition all "cides" are pesticides: fungicides to kill molds and fungi, herbicides to kill plants, rodenticides to kill rodents, and antimicrobials for killing bacteria and viruses.[3]

What a Pesticide Is Not

A comprehensive definition of the term pesticide also needs to include what pesticides *don't* do. Pesticides kill or damage pests, sometimes very effectively. What they don't do is solve pest problems. Killing pests, in and of itself, is never the answer to a pest problem. Pest problems get solved when we figure out the causes of the problem, the factors that have allowed a pest to thrive. When these factors are addressed, a pest problem is truly solved.

Simply killing pests, instead of solving pest problems, leads to routine and repeated use of pesticides as pests need to be killed over and over again. The enormous amounts of pesticides that are currently used, after decades of widespread use, are a simple demonstration of this fact. There are over 800 different pesticides and over 20,000 products currently registered for use in the U.S.; total pesticide use is over 4.5 billion pounds annually.[4] An estimated 4.4 billion applications are made annually in homes, yards, and gardens.[5]

If pesticides really solved pest problems, these enormous numbers would shrink.

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BASIC INFORMATION ABOUT PESTICIDES

DO PESTICIDES POSE SPECIAL HAZARDS TO CHILDREN?

Recent research shows that pesticides are particularly hazardous for children.

Neurotoxic pesticides are a special concern. Because children's eating patterns are different from those of adults, children, for their size, eat more pesticides on their food than adults. The National Research Council estimated that every day, over a hundred thousand two-year olds consume more than our government's "acceptable levels" of a common group of neurotoxic pesticides.

In addition, children whose parents use pesticides, both in the home and on the farm, are at higher risk for certain health problems. These problems include childhood brain cancer, birth defects, miscarriages, and premature birth.

Children's special susceptibility to pesticides was first widely publicized by the National Research Council (NRC) in their 1993 report *Pesticides in the Diets of Infants and Children*. The NRC concluded that children are not adequately protected from pesticides on their food because, for their size, children consume more calories, drink more water, and eat fewer types of food than adults. The NRC recommended changes in the regulation of pesticides.[1] Many of these changes were included in a 1996 law (the Food Quality Protection Act; FQPA), but have yet to be fully implemented.

Jay Sheard

Neurotoxic Pesticides

As an example of children's vulnerability to pesticides, the NRC focused on the large and widely used family of organophosphate insecticides and noted that these pesticides share the same neurotoxic effect. They looked at two-year olds, the foods they commonly eat, and total pesticide exposure for common members of the organophosphate family. Based on this data, the NRC estimated that large numbers of children are exposed to unacceptable amounts of these pesticides: *Every day*, 45,500 American two-year olds consume organophosphates in amounts above the U.S. Environmental Protection Agency's acceptable level, and some children would consume ten times this much. When juice was included in the NRC's calculations, the number rose to 143,500 children.[1] These calculations remain valid, because the FQPA's changes have not yet been implemented for organophosphates.

Other Hazards to Children

Recent research has linked a wide variety of health problems in children to their parent's exposure to pesticides.

Examples include:

• A study of children with brain cancer in Los Angeles County (California) found that these children were twice as likely as children without the disease to have been exposed prenatally to flea and tick insecticides when their mothers treated their pets.[2]

• In California counties with high agricultural pesticide use, the incidence of limb reduction birth defects is also high.[3]

• In Minnesota, farmers licensed to apply pesticides on their farms are more likely to have children with birth defects. This association was particularly strong in counties with high use of fungicides and herbicides related to 2,4-D.[4]

• A study of Canadian farmers found that use of the insecticide carbaryl was associated with an increased incidence of miscarriage and the use of the herbicides atrazine and 2,4-DB was associated with an increased risk of premature birth.[5]

Taken together, these studies are a clear demonstration that pesticides' effects on children's health are a cause for concern.

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BASIC INFORMATION

ARE PESTICIDES HAZARDOUS TO OUR HEALTH?

Pesticides with significant health hazards are applied in startling quantities. For example, just looking at the 28 most widely used pesticides, Americans annually apply about 380 million pounds of pesticides classified by the U.S. Environmental Protection Agency (EPA) as carcinogens. About 860 million pounds of pesticides that cause reproductive problems are used annually, with hundreds of millions of applications in our homes, on our lawns, and in our gardens.

As chemicals that are biologically active by design, it may not be surprising that pesticides can damage human health. Small amounts of some pesticides cause death;[1] others burn or irritate eyes and skin,[1] damage the nervous system,[2] disrupt our hormone[3] and immune systems,[4] reduce our ability to successfully reproduce,[3] and cause cancer.[5] What is surprising, however, are the enormous quantities of these hazardous chemicals that are used in the U.S. every year.

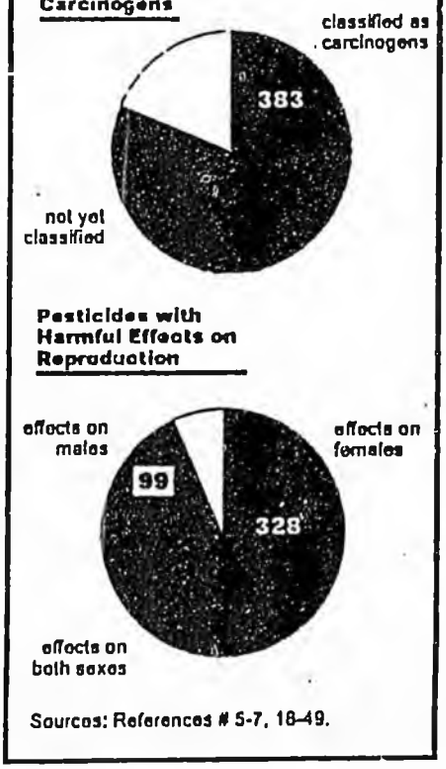
Pesticides and Cancer

As an example of the use of pesticides which damage our health, consider pesticides that are carcinogenic (cancer-causing). EPA is in the process of classifying pesticides based on whether or not they cause cancer in studies of laboratory animals, and so far has evaluated about 250 pesticides.[5] NCAP looked at the 26 pesticides that are most widely used in the U.S.[6,7] (This includes all pesticides with an annual use of at least six million pounds.[6]) Of these pesticides, 12 are classified as carcinogens by EPA,[5,8] with an annual use that totals 380 million pounds.[6] In other words, our dependence on chemical pest control results in 380 million pounds of carcinogenic pesticides being purposefully applied to the environment every year.

Another way of evaluating pesticides for their ability to cause cancer is to study the incidence of the disease in humans who have been exposed to particular pesticides. Such studies are called epidemiological studies. Although these studies are less common than laboratory studies, they have demonstrated associations between increased exposure to four frequently used pesticides and an increased risk of cancer.[9-18] Together, almost 190 million pounds of these four pesticides are used annually,[6] including 120 million household applications every year.[19]

Use of Common Pesticides with Health Hazards

(in million of pounds per year, including just the 28 most widely used pesticides)



Sources: References # 5-7, 18-49.

Pesticides and Our Ability to Reproduce

Pesticides have a variety of effects on reproduction. In exposed people, some pesticides cause birth defects, some cause miscarriages, some cause babies to be small, and others decrease fertility.[20-23] Reproductive effects can occur in males, females, or both. As with cancer, perhaps the most striking statistics are the sheer volume of pesticides used every year that have harmful effects on reproduction.

Looking again at the 26 most commonly used pesticides, 9 have harmful effects on male reproduction (causing sperm abnormalities, reducing sperm production, disrupting male hormones, and damaging male reproductive organs, mostly in laboratory tests).[24-33] Use of these pesticides totals over 300 million pounds per year,[6] including about 360 million household applications.[19]

Most (17) of the 26 commonly-used pesticides have caused decreased pregnancy success in laboratory tests. Miscarriages, a reduction in the number of living offspring, and reduced birth weights are common problems.[34-51] Total use of these pesticides is about 600 million pounds per year,[6] including about 330 million household applications.[17]

These examples lead to two straightforward conclusions: many pesticides pose significant hazards; and millions of pounds of these pesticides are used annually.

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BASIC INFORMATION ABOUT PESTICIDES

DO PESTICIDES CONTAMINATE OUR RIVERS, STREAMS, AND WELLS?

Pesticides are widely found in rivers, streams, and wells. In a recent national study, the U.S. Geological Survey found that over 95 percent of river and stream samples, as well as over 50 percent of well samples contained at least one pesticide. Many samples contained multiple pesticides. Both urban and agricultural areas have pesticide-contaminated streams and rivers.

New studies show that the relatively low concentrations of pesticides found in water can affect human and animal health.

Pesticides are everywhere in our water resources and are frequently found when comprehensive surveys are made.

The best data about pesticide contamination of water come from the U.S. Geological Survey (USGS), a federal agency that is in the process of sampling river basins nationwide for pesticides. The data from the first phase of the project, encompassing 20 basins, are now available.[1]

The USGS looked for 76 pesticides and 7 pesticide degradation products. More than 95 percent of the water samples collected from streams and rivers contained at least one pesticide, as did about half of the well water samples. Mixtures of pesticides were common; over half of the stream samples contained over 5 pesticides, and about a quarter of the well samples had 2 or more pesticides.

Four common herbicides were frequently detected in agricultural areas: atrazine, metolachlor, cyanazine, and alachlor. Different herbicides were found in urban areas: simazine, prometon, 2,4-D, diuron, and tebuthiuron. Insecticides were more frequently detected in urban streams, and were rarely detected in well water. The four most commonly detected insecticides were diazinon, carbaryl, malathion, and chlorpyrifos.

Although many of the pesticide concentrations measured by the USGS are relatively low, recent studies show that these pesticides are already causing health problems for people and animals. For example, the numbers of low birth-weight babies in southern Iowa and the numbers of breast cancer cases in Kentucky were high in areas with pesticide-contaminated water.[2,3] Also, the USGS found that fish sex hormone ratios decrease with increasing pesticide contamination of rivers.[4] "Within all regions studied," the USGS concluded, fish already "may be experiencing some degree of endocrine disruption."[4] Clean water is essential for human and environmental health.

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2. Munger, R. et al. 1997. Intrauterine growth retardation in Iowa communities with herbicide-contaminated water supplies. *Environ. Health Persp.* 105:308-314.
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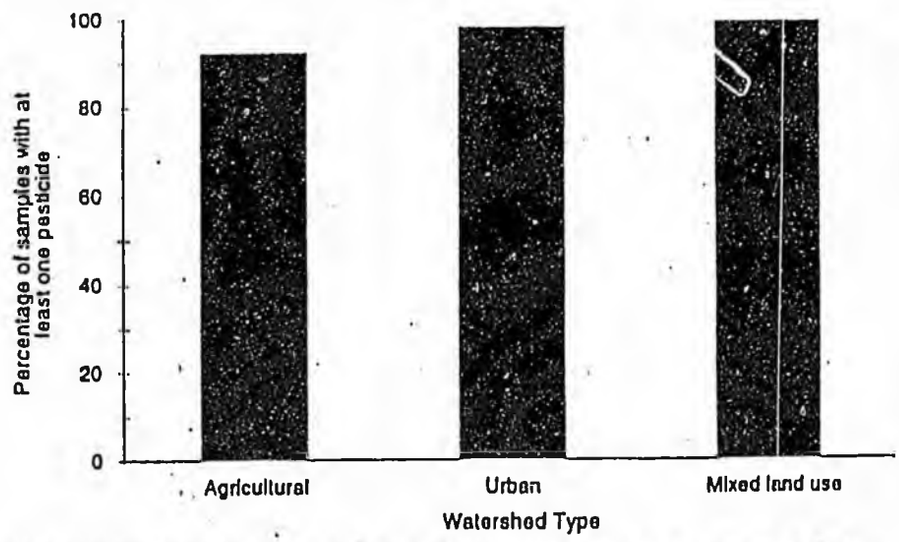
Detection of pesticides during nationwide monitoring of rivers and streams



U.S. Geological Survey. National Water Quality Assessment Pesticide National Synthesis Project. 1998. Pesticides in surface and ground water of the United States. Summary of results of the National Water Quality Assessment Program (NAWQA). www.water.wr.usgs.gov/pnsp/allsum/#t1.

NORTHWEST COALITION FOR ALTERNATIVES TO PESTICIDES/NCAP
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BASIC INFORMATION ABOUT PESTICIDES

ARE "INERT" INGREDIENTS IN PESTICIDES REALLY BENIGN?

Inert ingredients are present in virtually all pesticide products. They are substances added to pesticides to make them more potent or easier to use, but their identities are often claimed as confidential and they have only minimal testing requirements.

Despite this lack of testing, many inerts pose known hazards. About a quarter of inerts have already been classified as hazardous by state, federal, and international agencies.

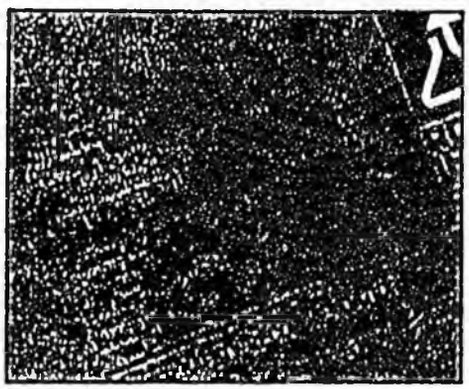
Our national pesticide law classifies pesticide ingredients into two categories, "active"[1] and "inert."[2] Active ingredients are those that are designed to kill or damage a pest.[1] Inerts are all other ingredients used in pesticide products[2] and are added to active ingredients to make the pesticide more potent or easier to use. Inert ingredients are not inert in the usual sense of the word; often they are neither chemically, biologically, nor toxicologically inert.[3]

Pesticide manufacturers claim that the identity of many inert ingredients is confidential business information and will not publicly disclose them. Under the Freedom of Information Act, the public can get information from the U.S. Environmental Protection Agency (EPA) about the inerts in a pesticide product unless the manufacturer proves that the information is confidential.[4]

Inert Hazards

Because there are only "minimal" testing requirements for inerts, EPA has little information about their hazards. Of the over 2300 substances EPA believes are used as "inerts" in pesticide products,[5] EPA classifies most (over 1700) as "of unknown toxicity"[5] because EPA's Office of Pesticide Programs does not have adequate information about their potential hazards.

However, there is clear evidence that many inerts pose significant toxicological and environmental hazards. State, federal,



and international agencies have classified 26 percent of them (about 600 chemicals) as hazardous.[6] Specific inert ingredients have well-known hazards. Examples include the following:

- Crystalline silica is a carcinogen.[7]
- Nonyl phenol ethoxylates cause destruction and marked deterioration of fish gills.[8]
- Ethylbenzene has caused fetal loss, birth defects, and testicular cancer.[9]
- Xylenes cause vomiting, impaired short-term memory, and reduced fertility.[10]
- Trimethylbenzenes cause bronchitis, fatigue, and dizziness.[11]
- Chlorofluorocarbons cause destruction of stratospheric ozone.[12]

Why Is Public Disclosure Important?

It is impossible for pesticide users, whether they are government agencies, businesses, or homeowners, to accurately understand the hazards of a pesticide product they are proposing to use if they don't know its ingredients.

"Inert" ingredients also pose a crucial ethical issue. We are all exposed to pesticides on a daily basis, whether or not we like that exposure. Given this situation, the very least we can do is to insure that we have complete, easily and publicly accessible information about all of the ingredients in pesticide products.

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3. U.S. EPA. Office of Pesticide Programs. 1997. Pesticide regulation notice 97-6. Washington, D.C. www.epa.gov/oppmsd1/pr97-6.html.
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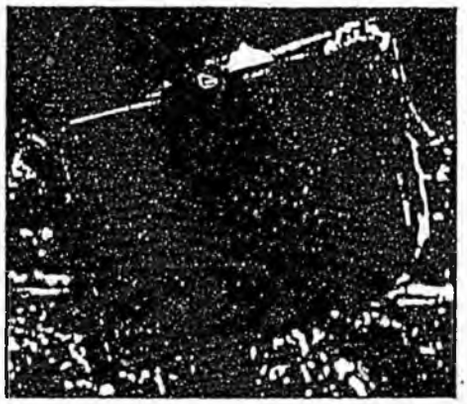
● NEWS FROM AROUND

PESTICIDES AND CHILDREN: SPECIAL PROBLEMS

"There are many reasons to believe that children may have unique sensitivities to their environment,"[1] concluded a recent review by scientists from the University of Washington. The review synthesizes significant new research about the risks pesticides pose for children.

One special focus has been a gene, called *Pon 1*, that is responsible for an enzyme that inactivates oxons, the active forms of organophosphate insecticides. People can inherit types of *Pon 1* whose enzymes differ in their ability to break down insecticides. One type, for example, inactivates the active forms of parathion and chlorpyrifos very slowly, but works quickly on the active form of diazinon. In juvenile laboratory animals, *Pon 1* activity levels are low and do not reach



adult levels until the end of childhood.[1] Consequently, some children could have a double sensitivity to chlorpyrifos: low activity levels of *Pon 1* because of their age and an inherited low-activity type of *Pon 1*.

Another research focus has been children's exposure to organophosphates in agricultural areas. Higher levels of organophosphates have been found in house dust of agricultural families. In addition, parents who are pesticide applicators bring home pesticide contamination, leading to higher concentrations of organophosphate breakdown products in their children's urine.[1] In a new study, over half of applicators' children had been exposed to levels of insecticides above the U.S. Environmental Protection Agency's (EPA's) reference dose,[1] the amount EPA believes (over a lifetime of exposure) will "have no serious deleterious effects."[2]

According to the University of Washington scientists, the cause of about 70 percent of birth defects is unknown and "this lack of information impedes our ability to develop effective public health prevention strategies."[1] Research continues at the University of Washington to fill some of these gaps, but quick answers to all of the questions raised by their review is imperative. —*Caroline Cox*

Caroline Cox is a JPR's editor.

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● NEWS FROM AROUND

"INERT" IN ASTHMA-CONTROL PESTICIDE CAUSES ASTHMA

Pesticide and household product manufacturer S.C. Johnson and Son, Inc. recalled its AllerCare dust mite control pesticides in January, 2000.[1] AllerCare products had caused asthma and respiratory problems in over 400 consumers during the fall of 1999.[2]

AllerCare products are sold to kill dust mites, a common cause of allergies and asthma.[2] However, they contain a so-called inert ingredient, a fragrance, that caused asthma and other allergy symptoms in some individuals.[3] Vacuuming or steam cleaning increased the problem.[4]

Oregon's Health Division described an example of problems following an AllerCare application. "She [the person making the application] complained of nasal and throat irritation during and shortly after the application. The following morning, the woman's husband developed an acute asthma exacerbation, followed by another attack two days later. Their three year old daughter developed an erythematous, diffuse body rash within 15 minutes of entering the home on the day of application. The rash persisted for several days."[4] Such illnesses seem particularly unnecessary given that effective nonchemical mite control measures are available.[2]

The AllerCare incidents show the importance of accurate information about *all* of a pesticide's ingredients. While the AllerCare fragrance is classified as an "inert," and so is not identified on product labels, its presence poses an unexpected threat to public health. —*Caroline Cox*

Caroline Cox is a JPR's editor.

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BASIC INFORMATION ABOUT PESTICIDES

DOES GOVERNMENT REGISTRATION MEAN PESTICIDES ARE SAFE?

Legally, pesticides are supposed to be regulated so that they do not cause "unreasonable adverse effects" and so that there is "a reasonable certainty that no harm will result" from their use. But does this mean that pesticides, by a common-sense definition, are safe? No.

For example, consider NCAP's survey of 19 recently registered pesticides. Seven cause cancer, six cause genetic damage, one causes miscarriages, one causes birth defects, one causes cataracts, and one causes liver and kidney damage. Eight are toxic to fish, one to shrimp, and one to oysters. Five are potential groundwater contaminants. These hazards do not meet a common-sense definition of safety.

By law, pesticides are regulated by the U.S. Environmental Protection Agency (EPA) so that they "will not generally cause unreasonable adverse effects on the environment."[1] A newer federal law sets a higher standard for pesticides used on food; their residues must be "safe,"[2] defined as "a reasonable certainty that no harm will result from aggregate exposure to the pesticide."[2] But does this mean that pesticides, by a common-sense definition, are safe? No.

Pesticide regulation is full of loopholes. Many pesticides in use today were registered using old test protocols and have not yet been reevaluated under current standards.[3] Pesticide testing is performed or paid for by pesticide manufacturers,[4] setting up a built-in conflict of interest. Many tests are only "conditionally required"[5] and are often waived. Tests ignore the multiple pesticides to which people are regularly exposed because they only look at one pesticide at a time.[5]

Probably the simplest way to evaluate for ourselves whether registration means pesticides are "safe" is to look at recently registered pesticides and see if they meet a common-sense definition of safety. As newly registered pesticides, they should meet all current standards.

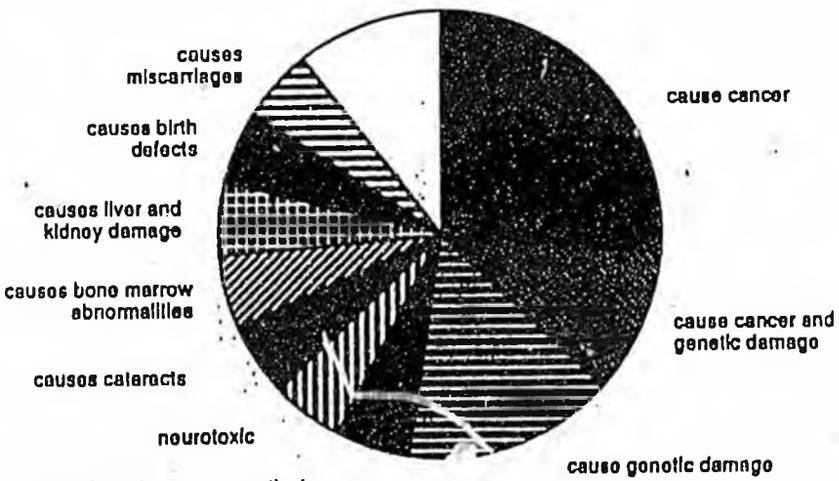
NCAP surveyed 19 conventional pesticides registered since 1997. EPA's evaluation of these pesticides shows most of them pose important hazards.[6] Seven cause cancer and six cause genetic damage. One causes miscarriages, one causes birth defects, one causes cataracts, one causes bone marrow abnormalities, two are neurotoxic, and one causes liver and kidney damage. Eight are toxic to fish; five to juvenile fish and three to adult fish. Five have the characteristics of groundwater contaminants. Two are highly toxic to oysters, and one to shrimp.

Clearly these pesticides are far from "safe" by any common-sense definition.

References

1. *Federal Insecticide, Fungicide and Rodenticide Act* (FIFRA) § 3(c)(5).
2. *Federal Food, Drug, and Cosmetic Act* § 408(b)(2)(B).
3. FIFRA § 4.
4. FIFRA § 3(c)(1)(D).
5. 40 *Code of Federal Regulations* § 158.340.
6. NCAP's survey of recently registered pesticides is based on EPA's "Factsheets on New Active Ingredients" available at www.epa.gov/opprd001/factsheets/. The pesticides are azoxystrobin, carfentrazone-ethyl, clofencet, cloransulan-methyl, cymoxanil, cyprodinil, diflufenzopyr, dimethomorph, flufenacet, fluroxypyr, imazamox, imiprothrin, isoxaflutole, kresoxim-methyl, propazine, sulfentrazone, thiazopyr, and trelkoxydim.

Health Hazards of Recently Registered Pesticides



Source: www.epa.gov/opprd001/factsheets/.

Alaska Community Action on Toxics
505 West Northern Lights Boulevard, Suite 210
Anchorage, Alaska 99503

Honorable Chairman Torgerson and Members of the Senate Resources Committee:

Alaska Community Action on Toxics strongly supports Senate Bill 14, the Pesticide Use Tracking Bill. ACAT is a non-profit statewide environmental health research and advocacy organization. ACAT provides technical assistance and training on environmental health issues for members of the general public, workers, and tribes.

We believe that enactment of this bill will be an important first step in assuring worker and public right-to-know about the quantities, types, and locations of pesticide applications in our workplaces, parks, public lands, and buildings. It will provide useful data for people on the job or in their communities to evaluate their own risks and take whatever protective actions they deem necessary. Children, elderly people, those with chronic illnesses or chemical injury are particularly susceptible to adverse health effects from pesticide exposure.

Our support for this bill stems from our research and experience in working with the Anchorage School District (ASD) concerning pesticide use in schools. Our research demonstrated that the Anchorage School District used pesticides linked with serious health problems, posing a special risk to children. Teachers, parents, and students were not provided with notification about pesticide applications. A group of parents, teachers, and students worked with ACAT for nearly a year in meetings with the ASD to address these problems. This work culminated in the February 2000 decision of the Anchorage School Board to implement a policy requiring notification procedures and least-toxic pest management. The state then promulgated regulations (signed by Commissioner Michele Brown in October 2001) to require notification in schools on a statewide basis. The notification only includes schools and not facilities such as day care or extended care for the elderly.

Alaska needs a pesticide use tracking law because there is no reliable information or system for public officials, researchers, or members of the public to track which pesticides are used, where, when, and in what amounts. Alaska currently has 4,594 pesticides registered for use, with 250 pending applications for registration. Pesticide use occurs in places frequented in our daily lives—parks, public buildings and grounds, schools, universities, airports, farms, nursing homes, hospitals, day care centers, stores, and greenhouses. Accurate information about pesticide use will be helpful for pesticide applicators and chemical corporations because it will dispel speculation and misrepresentation of facts.

The National Research Council has stated that pesticides are "perhaps the only toxic substances that are purposefully applied to the environment." Legally, pesticides are supposed to be regulated so that they do not cause "unreasonable adverse effects" or harm. But this does not mean that pesticides are safe. Registered pesticides are known to cause cancer, genetic damage, birth defects, miscarriages, liver and kidney damage. Less than 10% of pesticides in common use have been adequately tested for hazards.

Lindane is an example of a pesticide used in Alaska that has exceedingly harmful effects because it is persistent, toxic, and bioaccumulates. It is used to control head lice and for spruce bark beetle infestations. Exposure to lindane can adversely affect the liver, the nervous system, the kidneys,

immune system, the reproductive system, and is a cancer promoter. It is banned in many countries, is accumulating in fish, wildlife, and people living in the north. Although lindane is transported from lower latitudes outside Alaska, we can only speculate about how much is transported from outside versus amounts used within Alaska. Pesticide use tracking will provide a necessary basis for contaminants research in Alaska. This is becoming more important as we begin to understand the environmental and health effects of persistent pollutants transported to the north via oceanic and atmospheric currents.

In summary, Senate Bill 14 provides a useful tool for decision-makers, workers, and community members because it will help to:

- Enhance the general public and worker right-to-know
- Protect public health and workplaces, especially for children and those more vulnerable to the harmful effects of pesticides
- Protect water quality, salmon habitat, and other aquatic resources
- Promote good decisions about pest management.

Specific recommendations:
1) Please substitute "shall" for "may" in Section 1.
2) Require reporting from all applicators, including government, agriculture, and households.
3) Add a citizen suit provision such as exists in the federal Emergency Planning and Community Right to Know law.

Thank you for your careful consideration of the merits of this bill. We urge the Committee to strengthen the bill in the ways suggested here and help to ensure its passage.

Very respectfully yours,

Pamela Miller

Pamela Miller
Director

Alaska Conservation Voters

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SB 14 ~ Tracking of Pesticide Use

To: Senate Resources Committee Members Date: April 12, 2002

Alaska Conservation Voters (ACV) is a nonprofit organization dedicated to protecting Alaska's environment through public education and advocacy. Our 34 member organizations represent over 35,000 registered Alaskan voters. As most Alaskans, our members want to be assured that the food we eat and the water we drink are free from contaminants.

Senate Bill 14 enables all Alaskans to access information regarding the use of pesticides, a group of chemicals linked to a variety of health effects. Armed with this information, Alaskans can choose the steps we, as individuals, want to take to limit our exposure to these chemicals. Additionally, health researchers and public health officials will have more data to help them determine the risks associated with pesticide use.

- **Pesticide Use Tracking System**: Senate Bill 14 mandates the Alaska Department of Environmental Conservation (DEC) to establish and implement pesticide use tracking system. Alaskans have a right to know about pesticide frequency, quantity applied, and size of area treated in areas such as public lands, parks, schools and workplaces.
- **Registration Fees**: The pesticide use tracking system will be funded by collection of registration fees on pesticide labels registered for commercial sale in the state of Alaska. Currently, there are no fees associated with registering pesticides. Alaska is the ONLY state that does not collect registration fees.
- **Pesticide Tracking Advisory Board:** Senate Bill 14 creates a Pesticide Advisory Board consisting of 9 members. The board would have diverse representation with members from medical communities, children's advocates, wildlife researchers, pesticide applicators, drinking water providers, and community members. The advisory board would advise the DEC on the development and implementation of pesticide use reporting, recommend methods for public education, research and develop mechanisms for collection of household use, and work with the public to improve the reporting and tracking system.

Alaska Conservation Voters encourage legislators to support SB 16 because of the health benefits and protections it provides Alaskans. This legislation, which contains its own funding mechanism, represents an opportunity for the Department of Environmental Conservation to further its mission to protect public health.

Danielle Brown

Danielle Brown

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Co./Dept.	Co. ACE	
Phone #	Phone # 274 3621	
Fax #	Fax # 274 8733	

April 11, 2002

Honorable Chairman Torgerson and Members of the Senate Resources Committee:

On behalf of the staff, board, and members of Alaska Center for the Environment, I'm writing to express our support of Senate Bill 14, the Pesticide Use Tracking Bill.

Founded in Anchorage in 1971, Alaska Center for the Environment is Alaska's largest state-based conservation organization, with over 7,000 dues-paying members form around the state.

We believe that enactment of this bill will be an important first step in assuring worker and public right-to-know about the quantities, types, and locations of pesticide applications in our workplaces, parks, public lands; and buildings. It will provide useful data for people on the job or in their communities to evaluate their own risks and take whatever protective actions they deem necessary. Children, elderly people, those with chronic illnesses or chemical injury are particularly susceptible to adverse health effects from pesticide exposure.

To us, this bill is about empowering individuals by providing basic health information, so that a parent can make informed decisions about their family's exposure to toxics. Furthermore, this bill will not cost the state, or any Alaska-based business, any significant amount.

Alaska needs a pesticide use tracking law because there is no reliable information or system for public officials, researchers, or members of the public to track which pesticides are used, where, when, and in what amounts. Alaska currently has 4,594 pesticides registered for use, with 250 pending applications for registration. Pesticide use occurs in places frequented in our daily lives—parks, public buildings and grounds, schools, universities, airports, farms, nursing homes, hospitals, day care centers, stores, and greenhouses. Accurate information about pesticide use will be helpful for pesticide applicators and chemical corporations because it will dispel speculation and misrepresentation of facts.

The National Research Council has stated that pesticides are "perhaps the only toxic substances that are purposefully applied to the environment." Legally, pesticides are supposed to be regulated so that they do not cause "unreasonable adverse effects" or harm. But this does not mean that pesticides are safe. Registered pesticides are known to

cause cancer, genetic damage, birth defects, miscarriages, liver and kidney damage. Less than 10% of pesticides in common use have been adequately tested for hazards.

Lindane is an example of a pesticide used in Alaska that has exceedingly harmful effects because it is persistent, toxic, and bioaccumulates. It is used to control head lice and for spruce bark beetle infestations. Exposure to lindane can adversely affect the liver, the nervous system, the kidneys, immune system, the reproductive system, and is a cancer promoter. It is banned in many countries, is accumulating in fish, wildlife, and people living in the north. Although lindane is transported from lower latitudes outside Alaska, we can only speculate about how much is transported from outside versus amounts used within Alaska. Pesticide use tracking will provide a necessary basis for contaminants research in Alaska. This is becoming more important as we begin to understand the environmental and health effects of persistent pollutants transported to the north via oceanic and atmospheric currents.

Additionally, we would like to second the following recommendations as made to you by Alaska Community Action on Toxics:

1) Please substitute "shall" for "may" in Section 1.
2) Require reporting from all applicators, including government, agriculture, and households.
3) Add a citizen suit provision such as exists in the federal Emergency Planning and Community Right to Know law.

Thank you for considering our comments, and for taking an honest look at this bill. We urge the Committee to strengthen the bill in the ways suggested here and help to ensure its passage.

Sincerely,

Randy Virgin
Director