Draft
Report on Public Scoping for the PEIR

Integrated Mosquito and Vector Control Programs for Santa Clara County Vector Control District

Project No. 33441001.0130

Cardno ENTRIX
Shaping the Future

This Page Intentionally Left Blank

Table of Contents

Appendices

Tables

No table of figures entries found.

Figures

No table of figures entries found.

Acronyms

TBD	To Be Determined

1 Introduction

Santa Clara County Vector Control District (SCCVCD)

The Santa Clara County Vector Control District (District) distributed a Notice of Preparation (NOP) of a Draft Programmatic Environmental Impact Report (PEIR) for the Integrated Mosquito and Vector Management Program (Program) pursuant to the California Environmental Quality Act (CEQA) Guidelines (Section 15082) on June 7, 2012. The NOP was sent to **40** agencies, organizations, and individuals, including the following state responsible and trustee agencies: **CA Department of Parks and Recreation, CA Department of Forestry and Fire Protection, CA Department of Fish and Wildlife, CA Department of Public Health, CA Department of Pesticide Regulation, CA Department of Transportation and CA State Lands Commission**. The NOP provided a description of the Program, the location of Program activities, and the resources and environmental concerns planned for analysis in the PEIR. The notice announced a public scoping meeting and requested the comments on the content of the PEIR and the Program alternatives be submitted within 30 days of receipt. The public scoping meeting was held at the following location and time:

- Berger Auditorium, San Jose, on June 28, 2012 from 6:00 p.m. - 8:00 p.m.

This report summarizes the oral and written comments received during the scoping period, which was extended to July 9, 2012. Section 2 lists the commenting agencies, organizations, and individuals. Section 3 summarizes the comments and identifies those that affect the scope or content of the PEIR. Appendix A contains the written comments (full text) from public agencies and private organizations. Appendix B contains the transcripts of oral comments at the scoping meetings.

2 Commenting Agencies and Organizations

2.1 Oral Comments

Santa Clara County Vector Control District (SCCVCD)

No oral comments were submitted by a federal, state, regional or local agency.

Organizations and Individuals

The following organization and individuals submitted oral comments:

> *The Alternative Healing Arts Center*, Keith Howe
> Cole, Ruth
> Jensen, Cheriel
> Khanm, Rajnesh
> Madison, Brandi
> Mathewsan, Katherin
> Mori, Margret

2.2 Written Comments

Santa Clara County Vector Control District (SCCVCD)

Federal

Written comments were received from:

> United States Department of Interior: Fish and Wildlife Services, Eric Mruz

State

Written comments were received from:

> California State Lands Commission, Cy Oggins

Local and Regional

No written comments were submitted by a local or regional agency.

Organizations and Individuals

Written comments were received from:

> *The Alternative Healing Arts Center*, Keith Howe
> *Santa Clara Valley Audubon Society*, Hillary Richardson
> Cole, Ruth
> Jensen, Cheriel
> Khanm, Rajnesh
> Madison, Brandi

> Mathewsan, Katherin

> Mori, Margret

Santa Clara County Vector Control District (SCCVCD)

CEQA NOP Scoping Meeting Notes 7/28/12

Attendees:

1. Cheryl Jenson
2. Ruth Cole
3. Keith Howe
4. Kathryn Mathewson
5. Brandi Madison

6:16 p.m. Russ Parman gave Introduction and Orientation

6:18 p.m. Susan Hootkins provided further information

6:20 p.m. Russ Parman give overview of program.

Comments

Cheryl Jenson – brought suit against County to do an EIR. West nile virus (WNV) was excuse for pesticide use. Widespread broadcasting of pesticide meet criterion for EIR. Question: How many cases of WNV are there? What is verification of tests? PEIR must have all chemicals in formula (adulticide). Only independent research used. EIR preparers must be independent. Old malathion may be more toxic. How long is chemical in air on land, what about droplet size – risk assessment needed. Fogging exposure to open homes. Effects on baby with reduced liver function. Read Zenivex label. MSDS says avoid contact. Kidney dialysis patient exposure or exposure to chemically sensitive people.

2. Ruth Cole – Objection to spraying humans, killing good, beneficial animals, California is dry state. WNV epidemic never happened.

3. Kieth Howe – WNV is a benign, insignificant virus; no such thing as a safe pesticide; read from document he wrote. Deadbird program is not science, its propaganda. Pesticides increase WNV impacts; people get more sensitive to pesticides chemicals over time while insects develop resistance.

4. Katherryn Mathewson – I am an Ecologist and part of Count IPM Program. Want a copy of presentation since screen is difficult to read. There is a coordinating issue at county since vector never presented at County IPM

>

3 Summary of Comments

3.1 Santa Clara County Vector Control District (SCCVCD)

Comments were submitted on the Proposed Program, potential alternatives, and the scope of the environmental impact analysis. These are summarized below. The complete comment letters are provided in Appendix A, and comments from scoping meetings are in Appendix B.

3.1.1 Proposed Program

> A thorough and complete Project Description should be included in PEIR to facilitate meaningful environmental review of potential impacts, mitigation measures, and alternatives.

> Expectation that the Program will be presented as a series of distinct but related sequential activities (as the Project is described as “Programmatic”).

> Concerned with use of Zenivex; it mimes chrysanthemums but is a harmful neurotoxin.

> Request for details concerning the chemical component phase of vector management, how chemicals will be utilized, and distribution patterns. Provide map concerning spray zone/No Spray Zones.

> What substances are proposed to be fogged or otherwise broadcast? Provide label, MSDS, individual substances with specific formulas and as formulated for broadcasting.

3.1.2 Program Alternatives

> Provide a “No Project” alternative where no release of pesticides is made, and natural processes take the primary role in control.

> Provide rationale for size of fogging areas and proposed actions for reducing size of these areas.

> Provide alternative programs to control mosquito population (mosquito fish planting and swimming pool monitoring).

> Public education towards preventing mosquito bites (i.e., colors of clothing, fragrances, etc.).

> Planting vegetation attracting natural predators of mosquitoes through a variety of methods.

> Advanced technology of California should yield more effective, less hazardous alternatives.

3.1.3 Land Uses-Developed

> Discuss the population density (age, health, disabilities, etc) within the designated residential developments and list the effects of pesticides on their health and daily activity.

> Private resident has certification by the National Wildlife Federation for Backyard Habitats preventing use of chemical pesticides, and resident does not give permission for pesticides via drift to be used.

> Concern that title holders of foreclosed/neglected properties that provided habitat for mosquitoes have not paid a fine.

> What effects will the proposed chemicals have on furniture, fabrics, exterior finishes and roofs of home, car paint, windows of any kind?

3.1.4 Land Uses-Undeveloped

> Use of sovereign lands controlled by California State Lands Commission requires the District to obtain lease agreement.

3.1.5 Biological Resources-Aquatic

> Consider direct/indirect effects of using mosquito fish as control.

> Describe the impact of pesticides on the proposed mosquito fish control strategy.

> Ensure mosquito abatement staff minimize impact to tidal marsh and vernal pool habitats (especially during breeding season).

> Operation of vehicles should be restricted to levees and existing roads, and avoid vernal pool plants during blooming season (Mar-Jun).

3.1.6 Biological Resources-Terrestrial

> Describe the impact of chemicals on pollinator and vegetation productivity in the area.

> What does killing “good animals” benefit? Does it outweigh consequences?

> Avoid crushing California Tiger Salamander burrows through proper usage of ATVs; avoid tidal marsh habitat of salt marsh harvest mouse and California clapper rail with any vehicle (foot access only).

> Coordinate with DFG, CNDDV, USFWS, and IPaC to identify special-status plant or wildlife species. If impacts are found to be significant, PEIR should identify adequate mitigation measure to reduce impacts to lower levels.

3.1.7 Ecological Hazards

> Pesticides can also kill the natural predators of mosquitoes, which have great difficulty in recovery from pesticides.

> The continued spray program leads to survival of mosquitoes resistant to pesticides – “the pest mill”.

> Describe the role of mosquitoes within the food chain, and subsequent impacts if they were removed in terms of amphibians, birds, reptiles, fish and insects.

> Upon application and broadcast of pesticides, what is the fate and transport of these chemicals? Droplet size, dispersal patterns given wind, conversion products (both in storage and environment) and impacts of conversion products.

3.1.8 Human Health Hazards

> Adulticides present greater danger to humans than the threat of WNV, as many are known carcinogens and endocrine disruptors.

> Exposure to pesticides can result in compromised immune system, which would allow for development of allergies or autoimmune disorders.

> Pyrethrins disrupt the normal functioning of sex hormones while PBO affect the functioning of hormone-related organs.

> How long are pesticides retained in humans (young infant through elderly), pets, home garden vegetables and fruit, etc.?

> What are the long term effects of repeated exposure to these chemicals?

> Concerned with request of several community members to be “relocated” after they had exhibited adverse reactions to continued spraying/fogging.

> Provide a list of all rodent or wildlife species that could also be considered a threat to humans and management activities for said threat.

3.1.9 Public Services/Hazard Response

> Expressed concern on impacts at school sites.

3.1.10 Water Quality

> Describe, quantify, and evaluate impacts of dredge or fill activities.

> Upon application and broadcast of pesticides, what is the fate and transport of these chemicals? Droplet size, dispersal patterns given wind, conversion products (both in storage and environment) and impacts of conversion products.

3.1.11 Air Quality

> The concern is that months of spraying/fogging will adversely affect air quality for humans and pets alike.

3.1.12 Other PEIR Comments

> Request for a specific section within EIR for dealing with areas of controversy.

> Prohibit use of adulticides in vernal pool habitat (ensure only Bti or Bs will be applied in pools with California tiger salamander (CTS), vernal pool tadpole shrimp, or vernal pool fairy shrimp), within listed species habitat (CTS, vernal pool tadpole shrimp, vernal pool fairy shrimp, California red legged frog (CRLF), California clapper rails, salt marsh harvest mice), in open water, or at high tide.

> If adulticides must be used, ensure use is justified with documented, mosquito-borne disease activity within or within flight range of the tidal marsh.

3.1.13 Other Comments

> Ensure research papers and studies concerning pesticides have been performed by independent researchers unencumbered by profit motive. NOTE – if the pesticide is too new for independent research to have been completed, the pesticide is to be considered experimental and, therefore, cannot be used.

> West Nile Virus is not a significant threat to human beings and does not warrant aerial dispersion or pesticides.

> How many human cases of WNV have been documented in SCC? Proof? Provide lab documentation and source showing this testing confirming the presence of the virus.

> Concerned after experience with dog having heart failure after exposure to fogging.

> Concerned with lack of notification to the general public.

> Test the chemicals on bats for several years before implementation on public.

> Name specialist health care providers in Santa Clara County who treated chemically injured individuals with success.

This Page Intentionally Left Blank

Report on Public Scoping for Santa Clara County Vector Control District

APPENDIX A

WRITTEN COMMENTS FROM AGENCIES AND ORGANIZATIONS

Santa Clara County Vector Control District (SCCVCD)

> United States Department of Interior: Fish and Wildlife Services, Eric Mruz

> California State Lands Commission, Cy Oggins

> *The Alternative Healing Arts Center*, Keith Howe

> *Santa Clara Valley Audubon Society*, Hillary Richardson

> Cole, Ruth

> Jensen, Cheriel

> Khanm, Rajnesh

> Madison, Brandi

> Mathewsan, Katherin

> Mori, Margret

United States Department of the Interior

FISH AND WILDLIFE SERVICE
San Francisco Bay National Wildlife Refuge Complex
1 Marshlands Road, Fremont, California 94555

JUN 2 0 2012

Mr. David Rader
Santa Clara County Planning Office
Country Government Center, East Wing, 7'h Floor
70 West Hedding Street
San Jose, CA 95110

SUBJECT: Comments regarding the Notice of Preparation of a Draft Programmatic Environmental Impact Report for the Santa Clara County Mosquito Abatement District's Integrated Mosquito Management Program

Dear Mr. Rader:

The Don Edwards Sao Fraocisco Bay National Wildlife Refuge (Refuge) appreciates the opportunity to comment on the Notice of Preparation of a Draft Programmatic Environmental Impact Report (EIR) for the Santa Clara County Vector Control District's Integrated Mosquito and Vector Management Program. Given the longstanding working relationship between our agencies aod our joint effort to complete a Mosquito Management Plan for the Don Edwards Sao Fraocisco Bay National Wildlife Refuge, we are very interested in the EIR. Primarily, we hope that the development of the EIR is consistent with the Refuge's Mosquito Management Plan and its associated environmental assessment. While the District is likely familiar with maoy of the items below, we hope that they will be incorporated (as well as others contained in the Mosquito Maoagernent Plao) into the EIR.

General Operations

- Ensure that all mosquito abatement district staff is trained to minimize disturbaoce while entering tidal marsh aod vernal pool habitats to reduce impacts to endaogered species aod other native species. Avoid areas with known endaogered species during breeding season.
- In tidal marsh aod vernal pool areas, operate mechanized vehicles primarily on levees aod existing roads.
- Prohibit operation of vehicles arouod vernal pools containing listed vernal pool plants (e.g., Contra Costa goldfields) during the listed plant's blooming season (March-June).
- Minimize the use of motorized equipment off-road within uplaod habitat for the California tiger salamaoder. If Santa Clara VCD must enter upland habitat for California tiger salamander by vehicle, only use all-terrain vehicles that reduce the potential for crushing burrows that may used by California tiger salamaoders.
- Avoid the use of motorized vehicles within tidal marsh habitat for the salt marsh harvest mou and California clapper rail and enter these marshes on-foot only. rv

Pesticide Use

- Prohibit use of adulticides in vernal pool habitat. Ensure that only B.t.i. or B.s. will be applie o vernal pools that may have California tiger salamanders, vernal pool tadpole shrimp, or vema -. pool fairy shrimp.
- Avoid the use of adulticides within listed species habitat (e.g., California tiger salamanders,

vernal pool tadpole shrimp, vernal pool fairy shrimp, California red-legged frogs, California clapper rails, salt marsh harvest mice, etc.).

- Avoid use of adulticides in open water and at high tide.
- If adulticides must be used in tidal marsh habitats, ensure that their use is justified with documented, mosquito-borne disease activity within or within flight range of the tidal marsh.

Thank you for considering these comments. Please continue to keep us informed of the EIR process. If you have questions regarding our comments, please contact me or Winnie Chan at 510-792-0222.

Sincerely,

Digitally •lgned by Eric Mruz
O:cn=Erk Mruz,o=US Fish and Wildlife Service,ou Don Edward> San Frandsen B•Y NWR, emall=erlc_mruZ@fw.<.gov, c=US
Date:2012.06.21 13:511:59 -07'00'

Eric Mruz
Refuge Manager,
Don Edwards San Francisco Bay NWR

STATE OF CALIFORNII\-

EDMUND G. BROWN JR., *Governor*

CALIFpgNIA STATi.h/.los COMMISSION
100 Howe Aven e. ?,4jte 1Qt¥tt>outh
Sacrarv2n)i,.9A 295825-8202

CURTIS L. FOSSUM, *Executive Officer*
(916) 574-1800 FAX (916) 574-1810
California Relay Service From TDD Phone **1-800-735-2929**
from Voice Phone **1-800-735-2922**

Contact Phone: (916) 574-1900
Contact FAX: (916) 574-1885

RECEIVED
PLANNING OFFICE

12 JUL -·3 Fl\ I:05

June 29, 2012

File Ref: SCH # 2012062014

Mr. David Rader
Santa Clara County
70 W. Hedding Street
7th Floor, East Wing
San Jose, CA 95110

Subject: Notice of Preparation (NOP) for a Draft Program Environmental Impact Report (PEIR) Vector Control District Integrated Mosquito and Vector Management Program for Santa Clara County

Dear Mr. Rader:

The California State Lands Commission (CSLC) staff has reviewed the subject NOP for a PEIR for the Integrated Mosquito and Vector Management Program (Program), which is being prepared by the Santa Clara County Vector Control District (District). The District, as the public agency proposing to carry out the Program, is the lead agency under the California Environmental Quality Act (CEQA) (Pub. Resources Code,§ 21000 et seq.). The CSLC will act as a trustee agency because of its responsibility for projects that could directly or indirectly affect sovereign lands, their accompanying Public Trust resources or uses, and the public easement in navigable waters. Additionally, because the Project may involve work on sovereign lands, the CSLC may also act as a responsible agency.

CSLC Jurisdiction and Public Trust Lands

The CSLC has jurisdiction and management authority over all ungranted tidelands, submerged lands, and the beds of navigable lakes and waterways. The CSLC also has certain residual and review authority for tidelands and submerged lands legislatively granted in trust to local jurisdictions (Pub. Resources Code, §§ 6301, 6306). All tidelands and submerged lands, granted or ungranted, as well as navigable lakes and waterways, are subject to the protections of the Common Law Public Trust.

As general background, the State of California acquired sovereign ownership of all tidelands and submerged lands and beds of navigable lakes and waterways upon its admission to the United States in 1850. The State holds these lands for the benefit of

all people of the State for statewide Public Trust purposes, which include but are not limited to, waterborne commerce, navigation, fisheries, water-related recreation, habitat preservation, and open space. On tidal waterways, the State's sovereign fee ownership

extends landward to the mean high tide line, except for areas of fill or artificial accretion or where the boundary has been fixed by agreement or a court. On navigable non-tidal waterways, including lakes, the State holds fee ownership of the bed of the waterway landward to the ordinary low water mark and a Public Trust easement landward to the ordinary high water mark, except where the boundary has been fixed by agreement or a court. Such boundaries may not be readily apparent from present day site inspections.

The proposed Program may involve sovereign land under the jurisdiction of the CSLC. Physical Control features, such as tide gates, levees, and other water control features may lie within sovereign lands under the jurisdiction of the CSLC. However, based on the information submitted in the NOP, we are currently unable to determine the extent or location of any sovereign ownership interests of the State where components of the Program may be placed.

Please be advised that use of any sovereign lands for any part of the Program would require the District to obtain a lease from the CSLC. Examples of sovereign lands within the County, under CSLC jurisdiction, include Guadalupe River, Alviso Slough, Steamboat Slough, and Coyote Creek. CSLC staff is requesting that more detailed information and Program maps be provided to the CSLC for our review as they become available. As the Program proceeds, the CSLC requests that the District contact the Public Land Management Specialist listed at the end of this letter for further information on the extent of the CSLC's jurisdiction, and whether a lease or permit may be required.

Project Description

The District conducts activities through its Program to control the following vectors of disease and/or discomfort in its service area: mosquitoes, rats, yellow jackets and other biting or stinging arthropods as well as wildlife, including opossums, raccoons, skunks, rattlesnakes and coyotes. A vector is defined as "any animal capable of transmitting the causative agent of human disease or capable of producing human discomfort or injury..." (Health & Safety Code,§ 2200, subd. (f)). The District is preparing the PEIR to evaluate the effects of the continued implementation of the control strategies and methods prescribed in its Program.

CSLC staff understands that the activities considered in the PEIR include:

1. Surveillance. Regular monitoring of vector populations and habitats, disease pathogens, and public distress associated with vectors.
2. Public Education. Public education to encourage and assist reduction and prevention of vector habitats on private and public property.
3. Physical Control. Management of vector habitat, especially through water control and maintenance or improvement of channels, tide gates, levees, and other water control facilities.
4. Vegetation Management. Improving access to sample and treat vector habitats.
5. Biological Control. Rearing, stocking, and providing mosquito fish and applying bacterium, and the potential use of other predators or pathogens.

6. Chemical Control. Application of pesticides.
7. Other Vertebrate Vector Control. Occasional trapping of wildlife that pose a direct health threat to the public.

Environmental Review

General Comments

1. Project Description: A thorough and complete Project Description should be included in the PEIR in order to facilitate meaningful environmental review of potential impacts, mitigation measures, and alternatives. The Project Description should be as precise as possible in describing the details of all allowable activities (e.g., types of equipment or methods that may be used, maximum area of impact or volume of sediment removed or disturbed, seasonal work windows, locations for material disposal, etc.), as well as the details of the timing and length of activities. Thorough descriptions will facilitate CSLC staff's determination of the extent and locations of its leasing jurisdiction, make for a more solid analysis of the work that may be performed, and minimize the potential for subsequent environmental analysis to be required.

   The Program's proposed physical controls are of particular interest to the CSLC, as the improvement of channels, tide gates, levees, and other water control facilities may occur within sovereign lands under the jurisdiction of the CSLC, and may require a lease or permit.

Biological Resources

2. Sensitive Species: The District should conduct queries of the California Department of Fish and Game's (DFG) California Natural Diversity Database (CNDDB) and U.S. Fish and Wildlife Service's (USFWS) Information, Planning, and Conservation (IPaC) system to identify any special-status plant or wildlife species that may occur in the Program area and analyze the Program's activities, particularly biological and chemical controls, on habitat and wildlife. If impacts to special-status species are found to be significant, the PEIR should identify adequate mitigation measures to reduce impacts to less-than-significant levels.

Additional Review

3. Programmatic Document: Because the Project is being proposed as a "Programmatic" rather than a "Project-level" EIR, the CSLC expects the Program will be presented as a series of distinct but related sequential activities (e.g., a schedule of activities for improvement of channels, tide gates, levees, and other water control facilities). The State CEQA Guidelines, section 15168, subdivision (c)(5) states that a program EIR will be most helpful in dealing with subsequent

activities if it deals with the effects of the program as specifically and comprehensively as possible. In order to avoid the improper deferral of

mitigation, a common flaw in program-level environmental documents, mitigation measures should either be presented as specific, feasible, enforceable obligations, or should be presented as formulas containing "performance standards which would mitigate the significant effect of the project and which
may be accomplished in more than one specified way" (State CEQA Guidelines,
§ 15126.4, subd. (b)). As such, the PEIR should make an effort to distinguish what activities and their mitigation measures are being analyzed in sufficient detail to be covered under the PEIR without additional project specific environmental review, and what activities will trigger the need for additional environmental analysis (see State CEQA Guidelines,§ 15168, subd.(c)).

Thank you for the opportunity to comment on the NOP for the Program. As a responsible agency, the CSLC will need to rely on the Final PEIR for the issuance of any new lease as specified above and, therefore, we request that you consider our comments prior to adoption of the PEIR. Please send additional information on the Program to CSLC staff as plans become finalized.

Please send copies of future Project-related documents, including an electronic copy of the Final PEIR, Mitigation Monitoring and Reporting Program (MMRP), Notice of Determination (NOD), CEQA Findings and, if applicable, Statement of Overriding Considerations when they become available, and refer questions concerning environmental review to Cynthia Herzog, Environmental Scientist, at (916) 574-1310 or via e-mail at Cynthia.Herzog@slc.ca.gov. For information concerning leasing requirements, please contact Reid Boggiano, Public Land Management Specialist, at 916-574-0450 or by email at reid.boggiano@slc.ca.gov.

[;C1):--
CyR. ief
Division of Environmental
Planning and Management

cc: Office of Planning and Research Reid Boggiano, LMD, CSLC Cynthia Herzog, DEPM, CSLC Warren Crunk, Legal, CSLC

Santa Clara County Planning Office
County Government Center, East Wing
70 West Hedding Street
San Jose, CA 95110

06-29-12

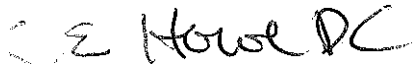
Attn: David Rader

Dear David,

I missed seeing you at the Vector Control PEIR meeting last night. Enclosed is a copy of the papers I submitted to Vector Control, to be placed into public records.

Please read the articles, and do not allow this fraudulent and dangerous pesticide, fogging campaign to continue.

Sincerely.



Keith E. Howe, D.C.

List of Articles on West Nile Virus and Pesticides submitted to Santa Clara County Vector Control et al, for entrance into public record, at EIR meeting on 06-28-12. By Keith E. Howe, D.C.

1) Cover letter by Keith E. Howe, D.C.
2) www.westnile.ca.gov/ (Latest West Nile Virus activity in California)
3) An Open Letter by Concerned Physicians and Scientists: Stop the Indiscriminate "Friendly Fire" . Pesticide Spraying
4) Overkill: Why Pesticide Spraying for WNV May Cause More Harm than Good
5) Myths about WNV and Pesticides
6) Stop the West Nile Virus Fogging
7) Pesticides, Not WNV, are the Leading Cause of Bird Deaths
8) Overkill: Why Pesticide Spraying for WNV May Cause More Harm than Good
9) Bats and Mosquitoes
10) Immunity Growing to WNV
11) Dr. Len Horowitz Calls WNV Pesticide Spraying Program "Madness"
12) Fact Sheet for Healthcare providers: Information Related to Insecticide Use for Preventing the Spread of WNV
13) Is Harris County openly Poisoning Citizens in the Name of mosquito Control
14) ABC's of toxicology; Basic Definitions
15) Pyrethrin
16) Fact Sheet for Piperonyl Butoxide, Pyrethrins, and Pyrethrum
17) Are Pesticides the Cure or the Cause for WNV
18) "Censored Gulf Dispersant News: Act of War (pt 2) The Art of Chemical Warfare" EPA, DoD, Petrochem Corporations: bedfellows to rid "pests"
19) Pesticide Risks
20) Pesticides Increase Breast Cancer Risk
21) GMO (BTI) Corn May Turn Tummy into a Poison Production Factory
22) BT Toxin from GM crops found in Human Blood: Study
23) Genetically Engineered Food Alters Our Digestive Systems!
24) Bacillus Thuringiensis (BT) Insecticide Fact Sheet
25) Enjoy Pesticides in Every Bite of GMO Food?
26) Parkinson's Disease Linked to Pesticides
27) Pesticides May Increase Parkinson's Risk
28) Agricultural Pesticides Linked to Miscarriage
9) Pesticides may Decrease Male Fertility
30) The Safety of inert Components in Pesticides Questioned
31) Toxic Sprays are a Political Issue
32) Judge Orders Halt to Spraying of Moth
33) Pesticides Linked to ADHD in UC Study
34) Overkill: Why Pesticide Spraying for WNV May Cause More Harm than Good

Santa Clara County Planning Office
County Government Center, East Wing
70 West Hedding Street
San Jose, CA 95110
FAX 408-288-9198
davidrader@pin.sc<:gov.org

06-25-12

Response to Proposed EIR report for West Nile Virus pesticide fogging.

West Nile Virus Fogging is Public Fraud and Endangerment

There is NO imminent threat to humans from West Nile Virus (WNV) I In 2011 there were 158 alleged WNV infections reported, and 9 deaths allegedly related to the WNV, in the entire State of California. Out of a population of 38 million people, this doesn't even approach a fraction of one per cent of the population. Furthermore, just because WNV is detectable in a person's blood does not mean they are sick or have died from it. 80% of all persons infected have NO SYMPTOMS. That means that a large percent of these persons (111) likely were sick or died from other, concomitant **causes (ie: flu, which causes an estimated 8,000 deaths per year in California, or pneumonia, as** many of these persons are immunocompromised to begin with) . Pesticide poisoning also causes many of the same symptoms as the WNV. According to the Journal of the American Medical Association (Vol. 284. No. 4-July 28, 2000) over 250,000 patients a year are killed by the medical profession.

- *7,000-* **medication errors** in hospitals
- 20,000- other errors in hospitals
- . 80,000- nosocomial infections in hospitals
- 106,000- adverse effects of medications

This further reduces the probable actual number of deaths, 6, allegedly attributed to WNV.

WEST NILE VIRUS

Scientific facts reveal that the West Nile Virus is absolutely NOT a significant threat to human beings, and, compared to the risk of pesticides, in NO way warrants the aerial dispersion (fogging) of toxic pesticides on residents of Santa Clara County.

Out of the entire population of 38 million people in the State of California in 2010, as of June 22, 2012, there is allegedly 1 case of human infection with West Nile Virus, in Kern County, with ZERO deaths associated with the WNV. These facts come from the official State of California website on West Nile Virus at http://www.westnile.ca.gov/.

Some facts about West Nile Virus:
1) Approximately 80% of persons infected with WNV have NO symptoms!
2) Approximately 20% of those infected get mild, flu-like symptoms!

3) Less than 1% of those persons infected suffer from any serious symptoms such as encephalopathy, and that is generally in elderly and immune-compromised individuals.

Furthermore, the spraying of pesticides to kill adult mosquitoes, known as adulticide, is one of the most ineffective methods of mosquito abatement. This method also presents the greatest danger to humans and non-target life-forms.

GENERAL PESTICIDE FACTS:

Pesticides are NOT safe. They are designed to be toxic and kill. Many are known carcinogens and endocrine disrupters that can cause cancer, infertility, and a host of other diseases.

- Pesticides suppress the human immune system, increasing the risk of contracting the WNV.
- Pesticides may compromise the blood-brain barrier, thus increasing the risk of encephalopathy (infection of the brain). Dr. Dennis Goode, of the Dept. of Biology at the University of Maryland states, "In general, WNV is a mild disease. It only becomes serious encephalitis if the virus can cross the blood-brain barrier. Among the agents that impair the blood-brain barrier in young rats are pyrethroid, organophosphate, and organochlorine pesticides. Thus, insecticide spraying has the **potential to worsen the process of WNV infection."**

Pyrenone 25-5

is one of the pesticides that have been sprayed. Pyrethroids are synthetic versions of pyrethrin.

- Pesticides also kill off the natural predators of mosquitoes, which take much longer to regain their **numbers.**
- Mosquitoes can also develop immunity to pesticides, making it more difficult to control them.

"An Open Letter by Concerned Physicians and Scientists" EXECUTIVE SUMMARY MASSIVE CHEMICAL PESTICIDE SPRAYING AGAINST MOSQUITOES CARRYING WEST NILE VIRUS WILL HAVE MANY SERIOUS DETRIMENTAL CONSEQUENCES, ESPECIALLY ON HUMAN HEALTH. THE RAMIFICATIONS OF SUCH ACTION WILL RESULT IN FARREACHING PUBLIC HEALTH, FINANCIAL, LEGAL AND OTHER PROBLEMS.

INDISCRIMINATE SPRAYING OF PESTICIDES, ESPECIALLY IN HEAVILY POPULATED URBAN AREAS, IS FAR MORE DANGEROUS TO HUMAN HEALTH AND THE NATURAL ENVIRONMENT THAN A RELATIVELY VERY SMALL RISK OF WEST NILE VIRUS.

THE OVERALL WELL-BEING OF OUR POPULATION IS DECLINING AND WILL CONTINUE TO DECLINE IF WE CONTINUE TO ALLOW OUR COMMUNITIES TO BE EXPOSED TO PESTICIDES. THOSE INDIVIDUALS WHO ARE MOST VULNERABLE IN THIS CHEMICAL ACTION AGAINST MOSQUITOES INCLUDE: CHILDREN, PREGNANT WOMEN, THE ELDERLY, CHEMICALLY SENSITIVE AND IMMUNOSUPPRESSED INDIVIDUALS, SUCH AS PATIENTS WITH AIDS AND CANCER, AND PEOPLE SUFFERING WITH ASTHMA AND OTHER ALLERGIES.

THERE SHOULD BE A WIDESPREAD AWARENESS OF THE FARREACHING PUBLIC HEALTH, ECOLOGICAL, ENVIRONMENTAL, ECONOMIC AND LEGAL RAMIFICATIONS OF SUCH MASSIVE

SPRAYING. THERE ARE OTHER, SAFER APPROACHES THAT CAN BE USED TO CONTROL AND PREVENT THE WEST NILE VIRUS ENCEPHALITIS.

USING PESTICIDE SPRAYING TO PREVENT WEST NILE VIRUS ENCEPHALITIS MAY BE COMPARED WITH "FRIENDLY FIRE" – KILLING ONE'S OWN FRIENDS WHILE INTENDING TO SHOOT AN ENEMY"

This paper also states that "Considering the cumulative, multigenerational, and destructive impact of pesticides, especially on children's development and behavior, it is frightening to imagine the delayed consequences of repeated pesticide spraying. These consequences will be especially serious for those **with allergies or weakened immune systems, cancer, those who are chemically sensitive, as well as for children and future generations."**

"West Nile Virus positivity could be a coincidental finding because the cause of death may have been some disease process unrelated to the West Nile Virus. Thousands of individuals who had no symptoms tested positive for West Nile Virus antibodies, proving that they were exposed to the virus. They never became ill and were not even aware that they were infected with West Nile Virus until they **were tested."**

"Additionally, not only will repeated spraying fail to eradicate the mosquitoes, the spray program leads to the survival of those mosquitoes resistant to pesticides. This resistance is passed on to new generations, leading to endless cycles of increased pesticide spraying each year – the "pest mill".

Pesticide residues are found everywhere –– in air, water, soil, rain, fog, snow, food, livestock, wildlife, and body tissues of human beings. Chemical pesticides and other pollutants are constantly being woven into our bodies. They have been detected in the body tissues of EVERYONE tested, **regardless of country, place of origin, residence, occupation, age, sex or social class."**

"It is known (6-31, 34-38), however, that exposure to chemical pesticide residues, especially if **chronic, even at low levels, can cause:**
genetic damage
birth defects
disruption of hormone regulation
defective sexual development
brain damage
Parkinson's Disease
allergies
exacerbation of asthma
cancer
and many other health problems.

Even a single exposure to pesticides can trigger:
latent environmental sensitivities, allergies, chronic fatigue syndrome, behavioral changes such as irritability, anxiety, depression, aggressiveness and personality changes, concentration difficulties, memory and learning problems, hormone disruption, erectile dysfunction, loss of libido, other health problems.

"Especially disturbing is the finding that predisposition to cancer and other health problems due to genetic damage related to pesticide exposure, may be transmitted by affected individuals not only to their offspring, but also to further generations."The World Resources Institute's report (15) entitled '"Pesticides and the Immune System: The Public Health Risks,"' documents the impact of widely used **chemical pesticides on the immunity of animals as well- as humans. Their conclusion, based on an** extensive body of experimental and epidemiological research from around the world is that:

Impairment of the immune system by chemical pesticides can lead to allergies, autoimmune disorders such as lupus and cancer. It may also lead to infections to which one may be normally resistant. In other words, exposure to spraying with chemical pesticides may actually increase the risk of developing West Nile Virus encephalitis

– **pyrethroids should be considered to be hormone disrupters"**

"It is urgent to educate the general public, media and decision makers that:

chemical pesticides, including those used to prevent West Nile Virus encephalitis in New York, cause much more health damage and are much more harmful to public health than the extremely small health risk presented by West Nile Virus.

the West Nile Virus is carried by birds and spread by mosquitoes, and is not an especially Dangerous, disease. The only vulnerable people are those who have reduced immunity – they are **much more susceptible to any infection, exotic or not.**

ultimately, no one can avoid exposure to those pesticides. We all breathe the same air and live on the same planet.

there are safe approaches that can be used to control and prevent West Nile Virus encephalitis.

A combination of the dramatic response in the media, lack of experiences of present generations of North American health professionals with epidemics other than AIDS, undoubtedly have contributed to the over-blown and fearful response to this relatively insignificant virus. As mentioned previously, thousands of people carrying antibodies against West Nile Virus never experienced any kind of symptoms although they were exposed to **it."**

"If we do not stop the indiscriminate use of pesticides, we will continue to endanger our environment and the quality of our own health and more crucially, the healthy physical and mental development of **our children and future generations.**

Pesticides are designed to kill. We share the same life blueprint with other life forms, including mosquitoes. All chemical pesticides are also harmful to humans.

For this reason, the indiscriminate mosquito spraying must be stopped and the unnecessary use of chemical pesticides needs to be abandoned and outlawed. Such an action will benefit EVERYONE including all stakeholders and their families – we all breathe the same air, and live on the same **planet"**

See full article at: www.beyondpesticides.org/mosquito/documents/ Open%20Letter.pdf

The Pesticides

The pesticide used for ground applications in 2005 was Pyrenone 25-5, which consists of:

5% pyrethrins
25% piperonyl butoxide (PBO)
70% unknown.

According to the EPA pyrethrins cause more instecticide poisenings than any other class of pesticides except one.
PBO is classified as a possible human carcinogen because it caused tumors in laboratory tests. Researchers at the Duke University School of Medicine have discovered that PBO' disrupted neurological development pathways- The study finds that the disruption of this critical pathway "may be the molecular basis for profound developmental defects in children exposed in utero to PBO."

Pyrethrins disrupt the normal functioning of sex hormones While PBO affect the functioning of hormone related organs.

However, Beyond Pesticides has long called for going beyond risk assessment with alternatives **assessment in environmental rulemaking, which creates a regulatory trigger to adopt alternatives and** drive the market to go green. The alternatives assessment approach differs most dramatically from risk **assessment in rejecting uses and exposures deemed acceptable under risk assessment calculations, but** unnecessary because of the availability of safer alternatives.

Increasing rates of chronic diseases linked to toxic chemical exposure, including cancer, asthma, and infertility, have created an urgency to enact policies to get harmful chemicals off the market. To learn **more about how pesticides are linked to serious health concerns, visit Beyond Pesticides' Pesticide Induced Diseases database.**
http://www.beyondpesticides.org/dailynewsblog/ogging

There is a principal at Law known as "criminal negligence." The most serious form of this crime is when a person who has knowledge, ignores that knowledge, with the result of individuals being exposed to otherwise avoidable dangers. This is called "willful negligence". The purpose of this paper is to establish a level of knowledge of facts which will make it reasonably known to any person reading them that there is no significant threat to the residents of Santa Clara County from the West Nile Virus, and that any risks from the WNV are far outweighed by the **dangers of pesticide exposure.**

Keith E. Howe, D.C.

71N. San Tomas Aquino Rd.

Campbell, CA 95008

tahac408@yahoo.com

{408) 871-8136

./28/12 The California Department of Public Health West Nile Virus Website

HOME | REPORT A DEAD BIRD OR SQUIRREL | WNV FAQS & BASICS | NEWS | RESOURCES | REPORTS | Last Updated: Jun 27, 2012 3:05pm PST

PARTICIPATING AGENCIES | CA DEPT. OF PUBLIC HEALTH | UC DAVIS CENTER FOR VECTORBORNE DISEASES | MOSQUITO AND VECTOR CONTROL ASSOC. OF CA | CA DEPT. OF FOOD AND AGRICULTURE

CASE COUNfS BY COUNI'Y

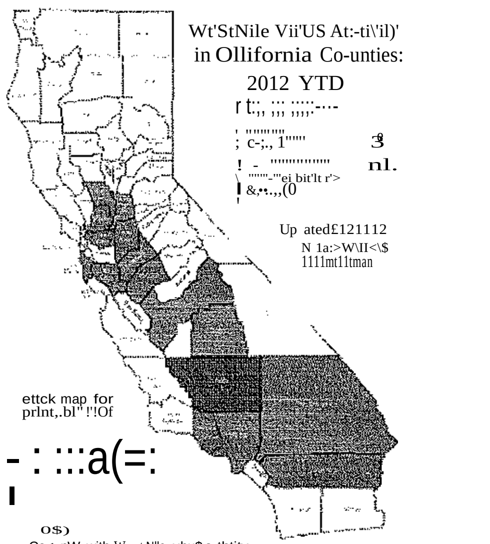
County	Dead birds
Alameda	-
Alpine	-
Amador	-
Butte	-
Calaveras	-
Colusa	-
Contra Costa	2
Del Norte	-
El Dorado	-
Fresno	-
Glenn	-
Humboldt	-
Imperial	-
Inyo	-
Kern	3

K.in.9?......
U.ke
LaSSen
- " nii J. !!.... :_-§
dera
. Ma·fin.·....
: MidiiQiii_ -
J _n_qg iD_Q_.
M9: .g: ::
Merced)'_
_f1Q_!!0
.!'19,t! !'t!:". Y
N_g P.3-
i N:.Y.3 l_q_l:!
. _Q,r gg_.
i EJ. ----
j .e.!!,.!!TlE.?
Riverside !
: t !:Ei.!!.t n!Q. ____..,_.!§Q
. -D.It o! --
son
Bernardino
J?.l _9.Q:=:
.?..'J.!:'Lf.t?J n J..g;p
- -\!f[.J_Q _g!,.!Lr•.... _!?
San Luis
Q.I?!. P..l?...
S_<m Mateo 1
Santa
Barbara
tl Ci¥i - :- _§
?.a.D.t\! C_Q.g
l! -tg _
Sierra
i§: iYQ ----
larp
sonoma
s·ta-n1si·au·s.. .._:-§
s·utte·r
i biffi -:--- -
T.rfn(t'Y._
Tulare ...'' .... J.P.
I 9 l .IT.i
Y. DW.r.?....
X9.l9...... ......
Yuba
r!ir.,.·.....-.:'....... 7. .

WNV Activity by County
Printable Version
2012 1201l1 2010
2ao9 1 200S 1 2001

Latest West Nile Virus Activity in California

Htmwn ;:fa.l:<is U;J<Jatd < very T!..!(· $day an(\ Fnd.;,v by 4pm. Ot!<!d t.lrd <.nd quirri data "' J tq:;d,Jted c:v.:r,· W<'d"" ;dav t;y - pm. H,'ir ,.,, mnsr;uita :ond :>enl.inei ci'HC t':" ii1JM i.!:!: upctz,tet\ on Fwloyb•,- 4prn.



ettck map for
prlnt,.bl" !'!Of

Ce< nW with Wns.t Nllo- vhu$ a thtity
(!1Yiftl>¢r>:>fl11,1flll!ll ;,)

TotalCounties with WMI in 2012:16 -View Prlntab!e: t-Jap -
Cohtroco ta, frt': rw, i-..€->n, loArt!Jeies:, r.:ad, Rr\•er;;;<k·, S;o;;:ri.!rn•?.nto, ::.an PHrn;\ni!iV.l, Si'ln]oaquln. S<1r1 1'\llt<'O, S<!nta Cbra, Sedano, St;:m lau•,,Tuiarto, V· ntur;o, and Yolo.

...CDPH Reports First Human West Nile Virus Case of 2012
SACRAMENTO- A 70-year-old female in Kern County ls the first confirmed human case of West Nile virus infection in California this year, announced Dr. Ron Chapman, state health officer and director of the California Department of Public Health (CDPH). The woman was hospitalized, but ls now recovering.

·;;;; Reporting a Dead Bird Video

HUMAN CASES
YiP: 1 Counties: 1
'There was 1 newWNV human case reported in CaiHornia last· week from Kern County. This is the first WNV human case from Kern County this year.1human case from 1 county has tested positive for WNV ih 2012.

HORSES
YTD: 0 Counties: 0
No horses have tested positive for WNV In 2012.

DEAD BIRDS
YTD: 223 Counties: 14
There were 54 new WNV positive dead birds reported in California this week from the following counties: Kern (2), Los Angeles (1), Merced (3), Riverside (1), Sacramento (38), San Joaquin (2), Stanislaus {1), Tulare (2}, and Yolo (4). This is the first WNV positive dead bird from Riverside County this year.[More

2.23 dead birs from 14 counties have tested positive forWNV in 2012.

MOSQUITO SAMPLES
YTD: 222 Counties: 10
There were 98 new WNV positive mosquito samples reported in California last week from the following counties: Fresno (2), Kern (34), los Angeles (2), Riverside (3), Sacramento (53), San Joaquin (2), and Tulare (2). 222 mosquito samples from 10 counties have tested positive forWNV in 2012.

SENTINEL CHICKENS
YTD: 2 Counties: 1
There was 1newWNV positive sentinel ::hlcken reported in California last week from Riverside County,

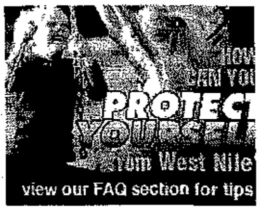
2 sentinel chickens from 1 county have tested positive for WNV In 2012.

SQUIRRELS
YTD: 0 Counties: 0
No squirrels have tested positive for WNV in 2012.

Lo(;ate Your Local Mosquito and Vector Contr .!.Age;..n_cy
Search by Zip Code [

.r:a Find us on
IU'l Facebook

S'fi\IQfu·
Duad81't'd
Hot!Ine to
Ye-w Mob
PhPn'l
D''ri dH<>tl«H'g
Hi
1-877·968'i!1!!



COMPARED TO 2011 YTD

As of Jun 27, 2012	.?J!1.!.	I.Q1
counties	12	
!Human cases	0	
!Horses	0	
Joead birds	29	
Mosquito samples	16	
Sentinel chickens		
Squirrels	0	

) :0 011 Y TD • Y<:<r< to d,;:;:n
tiler"" time

2011VTD activit ...:_

WNV REPORTS

'io·iJJ· 20.11 VlNV A'CnVrtY 's·u' ! IAR·y

Element	2003	2004	2005

"- - -- - -- := -..... - . - - =--': ves -.... --.!

BE A WEST NILE WATCHER

Help us track down the West Nile Virus by reporting all dead birds and squirrels. i.S'. 9-. 6:·.o.·.. l.in._eB .P.o"rt."]
Calll-877-968-2473 to report a dead bird or squirrel or you can submit an online report.

Weekly Report

06,27 r:J 2012 US Arboviral ,:: Activity Update

06.27 t':i 2012 YTD WNV Activit' ..." Map

06.22 Arbovirus Bulletin tt18

Humans

IWW.westnile.ca.gov

06.18 - 2012 Human WNV -... Incidence Report

06,18 3 2a01 WNV Case

06.13 l'ti 2003-2011 WNV Case ...- Summary by County

Dead Birds

06.27 ,f' Positive Species for

Human cases (fatal)	(0)	779 {29)	880 (19)	278 (7)	380 *(21)*	445 {15)	112 (4)	111 (6)	158 (9)	3,146 (110)
Horses	1'	540	456	58	28	32	18	19	15	1,167
Dead birds	96	3,232	3,046	1,446	1,396	2.569	515	416	688	13,404
MosqUito samples	32	1,136	1,242	832	1,007	2,003	1063	1305	2,087	10,707
Sentinel chickens	70	809	1,053	640	510	585	443	281	391	4,782
Squirrels		49	48	32	26	32	10	24	24	245

[1] There were 20 imported h.uman cases. [2] There were 3 imported horse cases.

2012

06.27 "" Reported, Tested, Positive 2012 YTD

06.27 :&· Positive Counts by Clty/County for 2012

Mosquitoes

06.22 V::l AMOR ·GRAVID Wee] 24

06.22 't'l AMOR- GRAVID Wee

06.22 j:.! AMOR- NJLT Week 2•

Horses.

12.16 ·: 2010 Equine V'!.!i'!..

AN OPEN LETTER
BY CONCERNED PHYSICIANS AND SCIENTISTS

STOP THE INDISCRIMINATE "FRIENDLY FIRE" PESTICIDE SPRAYING

EXECUTIVE SUMMARY

MASSIVE CHEMICAL PESTICIDE SPRAYING AGAINST MOSQUITOES CARRYING WEST NILE VIRUS WILL HAVE MANY SERIOUS DETRIMENTAL CONSEQUENCES, ESPECIALLY ON HUMAN HEALTH. THE RAMIFICATIONS OF SUCH ACTION WILL RESULT IN FAR· REACHING PUBLIC HEALTH, FINANCIAL, LEGAL AND OTHER PROBLEMS.

INDISCRIMINATE SPRAYING OF PESTICIDES, ESPECIALLY IN HEAVILY POPULATED URBAN AREAS, IS FAR MORE DANGEROUS TO HUMAN HEALTH AND THE NATURAL ENVIRONMENT THAN A RELATIVELY VERY SMALL RISK OF WEST NILE VIRUS.

THE OVERALL WELL-BEING OF OUR POPULATION IS DECLINING AND WILL CONTINUE TO DECLINE IF WE CONTINUE TO ALLOW OUR COMMUNITIES TO BE EXPOSED TO PESTICIDES. THOSE INDIVIDUALS WHO ARE MOST VULNERABLE IN THIS CHEMICAL ACTION AGAINST MOSQUITOES INCLUDE: CHILDREN, PREGNANT WOMEN, THE ELDERLY, CHEMICALLY SENSITIVE AND IMMUNOSUPPRESSED INDIVIDUALS, SUCH AS PATIENTS WITH AIDS AND CANCER, AND PEOPLE SUFFERING WITH ASTHMA AND OTHER ALLERGIES.

THERE SHOULD BE A WIDESPREAD AWARENESS OF THE FAR· REACHING PUBLIC HEALTH, ECOLOGICAL, ENVIRONMENTAL, ECONOMIC AND LEGAL RAMIFICATIONS OF SUCH MASSIVE SPRAYING. THERE ARE OTHER, SAFER APPROACHES THAT CAN BE USED TO CONTROL AND PREVENT THE WEST NILE VIRUS ENCEPHALITIS.

USING PESTICIDE SPRAYING TO PREVENT WEST NILE Vlft.US ENCEPHALITIS MAY BE COMPARED WITH "FRIENDLY FIRE"- KILLING ONE'S OWN FRIENDS WHILE INTENDiNG TO SHOOT AN ENEMY.

CAP-Open Letter 2001 FINAL vers;on (2d)tenpolnt.doc Updated 111312003\15:38

An Open Letter by Concerned Physicians and Scientists
Stop the Indiscriminate Spraying of "Friendly Fire" Pesticides

We, the undersigned physicians and scientists, have a particular interest in the impact of chemical pesticides on human health, and in· ensuring that there is a proper widespread understanding and awareness about this important public health issue. .

We want to alert everyone to the little known facts published in peer reviewed scientific journals, which have far-reaching public health and legal consequences.

There is a widely accepted erroneous belief that mass spraying of pesticides protects the population against mosquitoes. In fact, the opposite is true: the mass spraying will result in a deterioration of public health by exposing millions of people to "friendly fire" pesticides.

Ironically, such spraying is especially dangerous to those with impaired immunity for whose "protection" such spraying is mainly being done.

The health impact of suchspraying may affect not only those living in the area but, potentially, visitors and people living in other regions as well. It has been recognized that even a single exposure can trigger manifestation of clinical svroptoms in predisposed individuals.!1)

Once released into the environment, the spread of pesticides cannot be controlled. Radioactively traced pesticides spread over the UK were detected 5·7 days later in the southern USA; traces of insecticides used in tropical areas were detected in the Arctic.(20) Global air currents, hurricanes, etc.,. can transport pesticides and other chemicals even to other hemispheres.(9,20)

The inability to contain the impact of chemical weapons to a desired geographical area was recognized already during World War **I** and was the main reason why, after World War I, the use of chemical weapons was banned by international agreement. (This fact is, unfortunately, generally not remembered.)

The spraying program poses much more danger to human health than the extremely small health risk presented by the West Nile Virus itself. Even people bitten by an *INFECTED* female mosquito, the carrier of this virus, run very little risk of serious illness.(2,3)

- As reported by the Centers for Disease Control (CDC), Atlanta, the chances of a mosquito bite resulting in West Nile Virus infection and serious illness is extremely low.(2)

- The *Question and Answer Bulletin* ofthe New York City Department of Health advises that, *"very few* mosquitoes *– perhaps only one out of 1,000 – are infected. Even if you are bitten by an INFECTED female mosquito, your* chances *of developing* fitness *are* very *small*."(3)

- Or.Gochfeld, Prof. of Environmental and Community Medicine at the Robert Wood Johnson Medical School and School of Public Health reports(4) that, based upon his experience and other West Nile Virus epidemics, typically. less than one tenth of one percent of people bitten by *infected* mosquitoes develop any clinical signs of disease; in other words less than one in 1000 persons bitten by INFECTED mosquitoes (see Appendix "A") will develop some health problem.

  Even those who developed West Nile Virus related illness, usually only h ve mild forms with headaches, muscles aches, skin rashes and swollen lymphatic glands. More serious infections may cause headaches with high fever.(2-4)

- It Is extremely rare for a persoh to develop encephalitis.(2-4) Available information indicates that those who developed West Nile Virus encephalitis in the year 1999 (62 people, 7 died) and in the year 2000 (21 people, 2 died) were

CAP-Oven Letter 2001 FINAL version (ld)tcnvolntdoc Updated ll/312003\15:38

elderly and immunosuppressed. These people were residents of New York City and the surrounding areas. One person was a Canadian visiting New York.

- Even in cases where death was attributed to West Nile Virus infection, the cause of death may not have been West Nile Virus. West Nile Virus positivity could be a coincidental finding because the cause of death may have been some disease process unrelated to the West Nile Virus. Thousands of individuals who had no symptoms tested positive for West Nile Virus antibodies, praying that they were exposed to the virus. They never became ill and were not even aware that they were infected with West Nile Virus until they were tested.(2)

Compared to the thousands of people who die each year of the flu (approximately 2,500 in the New York City metropolitan area alone), or the number of children who die of asthma, 9 people in the last two years combined, who tested positive for West Nile Virus and who subsequently died of encephalitis (mainly elderly and with impaired immunity) in a population with 10 million people- is an extremely small number.

THE VIRUS IS NOT TRANSMIITED FROM PERSON TO PERSON.(2-4)

·The West Nile Virus is transmitted to humans by mosquitoes, not from person to person.(2-4) Female mosquitoes acquire the virus when biting an infected bird. The virus must be repeatedly transferred back and forth between infected mosquitoes and animal reservoirs (usually birds) before it poses. a risk to humans.(2-4)

INEFFICACY OF PESTICIDE SPRAYING

Indiscriminate pesticide spraying over an urban area is an ineffective and very dangerous attempt at controlling mosquitoes, and thereby controlling the West Nile Virus.(2-4) The spread of West Nile Virus to birds in 61 of New York's 62 counties proves that pesticides spraying is not a successful method of control.

Additionally, not only will repeated spraying fail to eradicate the mosquitoes, the spray program leads to the survival of those mosquitoes resistant to pesticides. This resistance is passed on to new generations, leading to endless cycles of increased pesticide spraying each year- the "pest mill".

Health officials in· New York have· already announced they budgeted over $200 million to continue the spraying in future years. This offer was refused by the pest!cide producers because New York City did not agree to cover the future legal expenses against the pesticide suppliers from those who develop health problems after mass spraying.

Even the recommended mosquito repellent D.E.E.T. can have serious repercussions. In 1998, D.E.e.T.was found to cause seizures and even death in children.(32,33)

SAFE EFFECTIVE WAYS TO CONTROL MOSQUITOES DO EXIST, AS DESCRIBED LATER IN THIS OPEN LETTER.

IMPACT OF PESTICIDES ON HUMAN HEALTH

To properly assess the impact of pesticides ori human health, it is not enough to view the aerial and truck spraying in isolation. It is necessary to take into account all other sources of pesticide exposure as well. The combined impacts of these various exposures and their interactions (known as "synergistic effects") can strongly increase the harmful consequences of spraying.(6-9)

Pesticide residues are found everywhere -- in air, water, soil, rain, fog,snow, food, livestock wildlife, and body tissues of human beings. Chemical pesticides and other pollutants ar

constantly being woven into our bodies. They have been detected In the body tissues of *EVERYONE* tested, regardless of country, place of origin, residence, occupation, age, sex or social class.(9,18)

CAP Oven Letter 2001 FINAL version (2d)tenpotnt.doc ·updated Jl/312003\15:38

A joint United States/Canadian study has detected pesticides in the amniotic fluid surrounding the fetus in one third of human pregnancies.(11) Pesticides and other pollutants have also been detected in the body tissues of children even before their birth and in the fluid surrounding the eggs of infertile Canadian women.(9-11) All of these women were residents of major Canadian cities, without any special history of exposure to pesticides.

The long term and future impact of such exposure is not fully known because throughout the millions of years of our existence, humenity has never been exposed to chemical pesticides until recently.

It is known (6-31, 34-38), however, that exposure to chemical pesticide residues, especially if chronic, even at low levels, can cause:

genetic damage
birth defects
disruption of hormone regulation
defective sexual development
brain damage
Parkinson's Disease
allergies
exacerbation of asthma
cancer
and many other health problems.

Especially disturbing is the finding that predisposition to cancer and other health problems due to genetic damage related to pesticide exposure. may be transmitted by affected individuals not only to their offspring, but also to further generations.(9)

single exposure to pesticides can trigger (5-31,34-38):

latent environmental sensitivities
allergies
chronic fatigue syndrome
behavioral. changes· such as *irritability, anxiety, depression,* aggressiveness *and personality changes*
concentration difficulties, memory and learning problems
hormone disruption .
erectile dysfunction
loss *of libido*
other health problems.

New York Mayor Rudolph Giuliani stated that "Sometimes you've got to make tough choices and people get angry at you. ...: The reality is that danger to human life is more important than birds, fish and insects." What has not been taken into.account is that the *danger to human health caused by the Indiscriminate spraying of p ticides is far greater than the danger of acquiring the West Nile Virus from mosquitoes.*

In their book, *Chemical Eposures -- Low Levels and High Stakes* (4), Nicholas Ashford, Ph.D., J.D., associate professor of technology and policy at the Massachussetts Institute of Technology, and Claudia Miller, M.D., state (1):

"In a survey of 6,800 persons claiming to be chemically sensitive, 80 percent asserted they knew 'when, where, with what, and how they were made ill." Of the 80 percent, 60 percent blamed pesticides."

C<IP-Op

THE IMPACT OF CHEMICAL PESTICIDES ON IMMUNITY AND BRAIN

Although some pesticides have been banned or restricted because they were recognized as posing serious threats to human health, so far little attention has been given to what may be the greatest danger of pesticides --impairment of the human immune system.(9-15)

The World Resources Institute's report (15) entitled *"Pesticides and the Immune* System: *The Public Health Risks,"* documents the impact of widely used chemical pesticides on the immunity of animals as well as humans. Their conclusion, based on an extensive body of experimental and epidemiological research from around the world is that:

> Impairment of the immune system by chemical pesticides can lead to allergies, autoimmune disorders such as lupus and cancer. It may also lead to infections. to which one may be normally resistant.(9-15) In other words, exposure to spraying with chemical pesticides may actually increase the risk of developing West Nile Virus encephalitis.

The report by World Resources Institute presents scientific evidence that pesticide-related health problems are much more serious than is generally acknowledged, and that the steps now underway to resolve this issue are far from adequate.(15)

In 1999, to quell mosquitoes thought to be carrying West Nile Virus, New York City aerially sprayed Fyfanon ULV (malathion), a potential cancer-triggering pesticide. The NY State Department of Environmental Conservation has attributed a 1999 die-off of thousands of fish in Staten Island to malathion poisoning. The spraying campaign subsequently affected the Hudson River, Long Island Sound and the Great South Bay, and has been blamed for causing the largest extermination of lobsters. Roughly eleven million lobsters, 90 percent of the full population, perished. Connecticut and New York lobstermen sued the companies that manufacture and apply the pesticides used in spraying.

In April 1990, the Office of Technology Assessment (OTA) of the US Congress :released an extensive report entitled *"Neurotoxic/tv: Identifving and Controlling Poisons of the Nervous* System."(16) The two top targets of the report are chemical pesticides and pharmaceutical drugs. The OTA report expresses concern that research projects have not adequately addressed neurotoxicity of these substances – a major Issue for the survival of humanity, as we know it:

> "... very few new and existing chemicals have been evaluated specifically for neurotoxicity. Of particular concern are the delayed effects of some of the organophosphate pesticides. Organophosphate and carbamate insecticides are the most common causes of agricultural poisonings. Malathion, an organophosphate pesticide, can permanently damage the nervous system after only one exposure."(16)

Last year, the pesticides Anvil10+10 (10 percent sumithrin, 10 percent piperonyl butoxide, and 80 percent "inert" ingredients) and Scourge (resmethrin) were used. Both of these pesticides are

Type I synthethic pyrethroids, manufactured in the laboratory to mimic the natural anti-insect pyrethrins extr<Jcted from chrysanthemum flowers.

Anvil 10+10 is a relatively new pesticide. There have been few tests of any kind on this product on either animal or human subjects. Although both Anvil10+10 and Scourge

CAP-Open Letter 2001 FINAL version (2d)tenpoint.doc Updated 1113/2003\15:38

have been approved for sale, this approval does not mean they are harmless. According to the U.S. Environmental Protection Agency, neither Anvil 10+10 nor Scourge has ever been tested for their impact on the immune system because "it has not been required to test for immunity".(17)

Recent research on pyrethroids has found that their mode of action is similar to chlorinated pesticides such as chlordane and aldrin. These pesticides were banned in the United States in the 1980's due to their dangerous impact on human health and the environment.

A 1998 study by Drs. Joan Garey and Mary S. Wolff of Mount Sinai School of Medicine, New York, found that the chemical sumithrin, the main pesticide in Anvil 10+10, disrupts human hormone balance and increases the growth of breast cancer cells in test tubes.(40)
The study concluded: "Overall, our studies imply that each pyrethroid compound is unique in its ability to influence several cellular pathways. These findings suggest that pyrethroids should be considered to be hormone disrupters, and their potential to affect endocrine function in humans and wildlife should be investigated." (40)

ALL LIFE FORMS INCLUDING HUMANS ARE VULNERABLE TO TOXIC EFFECTS OF PESTICIDES.

It is estimated that 6 to 15 percent of the population is chemically sensitive. If only 10 percent of a 10 million population would be chemically sensitive, the number of people potentially affected by chemical pesticides, such as Anvil 10+10 and Scourge, (which have a tendency to cause allergies and neurological problems), could reach 1 million people.

To this 1 million potentially affected people must be added an additional unknown number Of elderly, those with impaired Immunity (patients with AIDS, cancer, etc} and children as well as future offspring Of pregnant women; and those who may become sensitized. These affected people may develop immediate andior delayed adverse reactions ranging from mild to life threatening.

Considering the cumulative, multlgenerational, and destructive Impact of pesticides, especially on children's development and behavior, it is frightening to imagine the delayed consequences of repeated pesticide spraying. These consequences will especially serious for those sensi with allergies or weakened immune systems, cancer, those who are chemically sensitive, as well as for children and future generations.(G-16, 18-31, 34-38)

Cells

Cells are the basic structural unit of plants, insects, animals and humans. Despite the large differences in function and shape of our cells, we share the same basic cell processes, with other living organisms including the same basic including mosquitoes.

Each cell – whether from a *plant or an insect or an animal* – is a *microscopic bag with* a *nLJc/eus (apart from red cells), containing* chromosomes *in the fonn of DNA, and a fluid materi<Jl called cytoplasm. The cell* is *surrounded by a membrane – an "outer skin"- and contain$ additional specialized structures such* as *mitochondria for the generation of energy.*

Because we share the common basic life blueprint with other life forms, chemical pesticides produce "toxic broad spectrum" impacts, damaging or killing also various useful insects, animals, and plants as well as damaging human health.

Children's special susceptibillty 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 National Research Council concluded that children are not adequately protected from pesticides for the following reasons (39):

- children are exposed to pesticides even during their prenatal development, because the pesticides and other pollutants are shifted from the bodies of their mothers through placenta to their body tissues;

- after birth, children receive daily pesticide residues in breast milk and, later, through food, water and other sources - along with other harmful pollutants;

- on average, children receive more pesticides per body weight than adults· because, for their size they consume more calories, drink more water (frequently contaminated by pesticides) and eat more fruit and vegetables (commonly sprayed), and breathe more air (polluted);

- additionally, pesticide impacts are especially destructive in children because their enzymes are not yet fully functioning and, therefore, they have even more difficulties eliminating toxic substances than adults. *:*

The National Research Council recommended changes in the regulation of pesticides. Many of these changes were included in a 1996 law (the Food Quality Protection Act (FQPA), but have yet to be fully implemented.(39)

SAFE APPROACH

Dr. Gochfeld, U.S. Professor of Envlronmental and Community Medicine, states, (Appendix A) "We should consider the disease itself and the risk to the human population•. seven deaths in a population of over 10 million people over a one year period is certainly tragic, but pales beside the number of deaths from many other diseases that are addressed less aggressively."

It is urgent to educate the general public, media and decision makers that:

- chemical pesticides, including those used to prevent West Nile Virus encephalitis in New York, cause much more health damage and are much more harmful to public health than the extremely small health risk presented by West Nile Virus.

- the West Nile Virus is carried by birds and spread by mosquitoes, and is not an especially dangerous disease. The only vulnerable people are· those who have reduced immunity – they are much more susceptible to *any* infection, exotic or not.

- ultimately, no one can avoid exposure to those pesticides. We all breathe the same air and live on the same planet.

- there are safe approaches that can be used to control and prevent West Nile Virus encephalitis.

A combination of the dramatic response in the media, lack Of experiences of present generations of North American. health professionals with epidemics other than AIDS, undoubtedly have contributed to the over-blown and fearful response to this relatively insignificant virus. As mentioned previously, thousands of people carrying antibodies against West Nile Virus never experienced any kind of symtoms although they were exposed to it.

Nevertheless, we should develop and re-discover safe approaches for the control of pests - including mosquitoes. There are safer, more effective ways than chemical pesticides to control mosquitoes. These methods include disrupting mosquito breeding cycles by removing

stagnant water,. etc., as recommended by New York City Department of Health; products such as Mosquito Magnet, safe natural mosquito repellents, etc.

Among natural mosquito repelient products containing herbal extracts and oils is *Nature* 99 *Herbal Extract,* a natural repellent containing essential oils from the twigs and leaves of the Eucalyptus Citriodora plant which has an extraordinarily high content of citronella. Other natural products include *Royal Neem* (a blend of herbs, essential oils and aloe), *Nature's Body Guard, Zetastop and Mosquitoex.* Combining approaches that prevent and disrupt mosquito breeding cycles not only avoid damage to human health and the ecosystem, but it will also avert highly expensive litigation brought about by the current spraying program and the high expenses for such spraying.

The use of chemical pesticides started about fifty years ago. The Chemical pesticides that were once touted as being a "wonderful, safe approach" to pest control are now known to contaminate everything, soil, food, water, air, rain, all living forms including our bodies and the bodies of our children, even before their birth. They are destroying our ecosystem – and us.

If we do not stop the indiscriminate use of pesticides, we will continue to endanger our environment and the quality of our own health and more cmclally. the healthy physical ancl mental development of our children and future. generations.

Pesticides are designed to kill. We share the same life blueprint with other life forms, including mosquitoes. All chemical pesticides are also harmful to humans.

For this reason, the Indiscriminate mosquito spraying must be stopped and the unnecessary use of chemical pesticides needs to be abandoned and outlawed. Such an action will benefit EVERYONE Including all stakeholders and their families- we all breathe the same air, and live on the same planet •••

Signed,

(please see next page)

An Open Letter by Concerned Physicians and Scientists
Stop the Indiscriminate Spraying of "Friendly Fire" Pesticides

Prof. Emer. William Rea, M.D.
First World Professioral Chair of Environmental Medicine,
University of Surrey, UK
Director of Environmental Health Unit
Dallas, Texas, U.S.A.

Ed Napke, B.Sc., M.D., DPH.
Former Medical Officer in Charge of the Canadian Drug Adverse Reaction Reporting Program and Canadian Poison Control Program (1965-1989)
Ottawa, Ontario

Prof. Emer. Joseph Cummins, Ph.D.
Department of Genetics
Universtty of Western Ontario
London, Ontario

Prof. Samuel Epstein
Professor of Environmental and Occupational Medicine. School of Public Health,
University of Illinois at Chicago
Chairman, Cancer Prevention Coalition
U.S.A.

Libuse Gilka, M.D.
Physicians. and Scientists for a Healthy World
Ottawa, Ontario

Sheldon Krimsky, Ph.D.
Department of Urban & Environmental Policy, Tufts University
Melford, Massachusetts-, U.S.A.

Rosalie Bertell, Ph.D., G.N.S.U.
International Institute of Concern for Public Health
Toronto, Ontario

E. Angelopoulos, Ph.D.
Professor of Biology, Parasitology'and Entomology
Dalhousie University
Halifax, Nova Scotia

Prof. Emer. Ross H. Hall, Ph.D. Former Chairperson, Department of Biology
McMaster University Health Science Faculty and Ministry Environmental Priority Substance Panel Former Chairperson Health Committee
International Joint Committee
Hamilton, Ontario

References

1. Ashford, N.A. and Miller, Claudia, *"Chemical Exposures Low Levels and High Stakes",* . Published by Van Nostrant Reinhold, New York 1991

2. The Centers for Disease Control (CDC).

3. New York City Department of Health, Question and Answer Bulletin, 2000.

4. Gochfeld, M., *Public Panic over West Nile Virus,* American Butterflies Journal, Summer 2000.

5. Canadian Public Health Association, "A Public Health Approach to Pesticides use in Canada", Submission to the House of Commons Standing Committee on Environment and Sustainable Development, October 1999.

6. Ordin, DL: "Surveillance For Pesticide Related Illness – Lessons From California", (editorial] Am J Public Health 85:762-763, 1995

7. Health Canada, New Study to look at the Exposure of Ontario's Farm Familes to Pesticicjes. Farm Family Health 4(1):1-4 1996.

8. Daniels J.L. et al. Pesticides and Childhood Cancers. Environmental Health Perspectives 105:1068-77, 1997.

9. The Cumulative Multigenerational Degenerative Impacts of Pesticides on Health Especially the Physical, Emotional and Mental Development of Children and Future Generations: Canadian Government Responsibilities and Opportunities, A Submission to the House of Commons Standing Committee on Environment and Sustainable Development by Physicians and Scientists for a Healthy World, February, 2000.

10. English, B.K., and S.B. Wilson, "Neonate as an Immunocompromised Host," In: C.C. Patrick, ed., *Infections in Immunocompromised Infants and Children,* Churchill Livingstone, New York: 95-118, 1992.

11. Swift, D., Pesticide Contaminants in Amniotic Fluid Pose Development Risk, Medical Post 35:25, 1999.

12. ·Lewis, D.B., and C.B. Wilson, "Developmental Immunology and Role of Host Defenses in Neonatal Susceptibility to Infections," In: J.S. Remington, and J.O. Klien, eds., *Diseases of the Fetus and Newborn Infant,* Fourth Edition, W.B. Saunders Company, London, 20-98, 1995.

13. Rea, W.J., Chemical Sensitivity: Sources of Total Body Load, In: *Pesticides* Volume 2, Lewis Publishers, Boca Raton, Florida, 837-939, 1994.

14. Rea, W.J., Pollutants Effects on the Blood and Reticuloendothelial System (Lymphatic and Immune System), In: *Chemical Sensitivity,* Volume 1, Lewis Publishers, Boca Raton, Florida, 155-219, 1992.

15. World Resources Institute, *Pesticide and the Immune System: The Public Health Risk,* 1998.

16. Office of Technology Assessment (OTA) of the US Congress, *Neurotoxicity: identifying and Controlling Poisons of the Nervous System,* 1990.

17. Environment Protection Agency, Telephone communication, August 2000.

18. Colborn, T., Dumanoski, D., Myers, D., *Our Stolen Future: Are We Threatening our Fertility, Intelligence, and Survival?* Publishers, Dutton, 1996.

19. Environmental Health Perspectives, val. 107, no. 3, March 1999, pages 173-177.

20. Steingraber, S., Living Downstream: *An Ecologist* Looks *at Cancer and the Environment,* Publishers, Addision Wesley, 1$97.

21. Nuriminen, T., Maternal Pesticide Exposure and Pregnancy Outcome, J Occup Environ Med 37:8, g35-940 1995.

22. Anwar, W.A, Biomarkers of Human Exposure to Pesticides, Environ Health Perspect 105 · Suppl4: 801-806 1g97.

23. Daniels, J,L., Olshan, A.F. and Savitz, D.A., Pesticides and Childhood Cancer, Environ Health Perspect 105:10, 1068-10771997.

24. Dich, J., Zahm, S.H., Hanberg, A., and Adami, H.O., Pesticides and Cancer, Cancer Causes Control8:3, 420-443 1997.

25. Zahm, S.H., Ward, M.H., Pesticides and Childhood Cancer, Environ Health Perspect. 106 Suppl 3: 893-908 1998.

26. Ward, M.H., Zahm, S.H., and Blair, A., Pesticides and Cancer Risk: Clues from Epidemiology Studies of Farmers and the General Population, Pesticides, People and Nature 1:1,25-321-1-1999.

27. Jaga, K, and Brosius, D., Pesticides Exposure: Human Cancers on the Horizon, Rev Environ Health: 14{1): 39-50 1999.

28. Epstein, S.S., *The Politics of Cancer Revisited,* East Ridge Press, 1998.

29. Pagoda, J.M. and Preston Martin, S., Household Pesticides and Risk 'of Pediatric Brain Tumors, Environ Health Perspect 105:11, 1214-1220, 1997.

30. Freed, V.H., Pesticides: Global Use and Concerns, Pp. 145-158 In: G.J. Marco, RM. Hollingworth, and W. Durham, Eds In: *Silent Spring Revisited.* Washington D.C., American Chemistry Society, 1987.

31. Sever, LE., Arbuckle, T.E., and Sweeney, A., Reproductive and Developmental Effects of Occupational Pesticide Exposure: the Epidemiologic Evidence, Occup Med 12:2, 305-325, 1997.

32. Seizures Temporally Associated with Use of D.E.E.T. Insect Repellent- New York and Connecticut, MMWR, Vol. 38/No.39, October 6, 1989.

33. Clem, J.R et al, Insect Repellent Hazard, Ann Pharmacother, 289 293, (Reprinted from Medical Sciences Bulletin, published by Pharmaceutical Information Associates Ltd., 1993.

34. Kilburn, K, Is the Human Nervous System Most Sensitive to Environmental Toxins? Archives of Environmental Health 44(6):343-344, 1989.

35. Pearce, N., and Reif, J.S., Epidemiologic Studies of Cancer in Agricultural Worker, Am J Ind Med 18:2, 133-148 1990.

36. Fleming, LE., and W. Timmeny, "Aplastic Anemia and Pesticides,Journal of Occupational Medicine, 35{11): 1106-1116, 1993.

37. Blair, A., and Zahm, S.H., Agriculture Exposure and Cancer, Environ Health Perspecl103 Supple: 205-2081995.

38. Blair, A., Zahm, S.H., Pearch, N.E., Heineman, E.F. and Fraumeni, J.F.J., Clues to Cancer Etiology from Studies of Farmers, Scand J Work Environ Health 18:4, 209-215 1992.

39. National Research Council, Pesticides in the Diets of Infants and Children, Washington. DC: National Academy Press, 1993

40. Garey, Joan and Wolff, Mary S., Estrogenic and Antiprogestagenic Activities of Pyrethroid Insecticides, Biochemical and Biophysical Research Communciations 251, 855-859, 1998.

This Open Letter is *distributed by Staten Island Citizens for Healthy Alternatives (SJCHA), the No Spray Coalition, and SAFE NYC.*

Refer all questions and comments to:
K. Barbera, (SICHA)(718) 273-5489 or L. Blois, (SICHA) Blois@Prodigy:net

See entire article at:
www.beyondpesticides.org/mosquito/documents/Open Letter.pdf

Overkill: Why Pesticide Spraying for West Nile Virus May Cause More Harm Than Good

A Report by Toxics Action Center and Maine Environmental Policy Institute

Principal Authors

William C. Sugg, III, Director, Maine Environmental Policy Institute

Matthew L. Wilson, Director, Toxics Action Center

This report is available free of charge online at www.toxicsaction.org.

To receive additional copies of this report, send $10 per report, or $7 each if ordering more than ten copiesto:

http://www.meepi.org/wnv/overkillma.htm July 23, 2010 10:52:45 PM

To receive additional copies of this report, send $10 per report, or $7 each if ordering more than ten copiesto:

Toxics Action Center
29 Temple Place
Boston, MA 02111
(617) 747-4389
http:Uwww.toxicsaction.org

Published July, 2001

Acknowledgments

The most important person to acknowledge in this paper is Rachel Carson.. Her book *Silent Spring* is the wellspring from which this continuing work on pesticides flows. Forty years ago she wrote,

> "We should no longer accept the counselof those who tell us that we must fill our world with poisonous chemicals; we should look about and see what other course is open to us."
>
> - Rachel Carson, *Silent Spring,* 1962.

For the first edition of this report, which was written specifically for Maine (see Maine version of the report), we would like to thank the MEEPI board of rlir••r.lrm, Kevin Mattson, Tom Federle, Matt Scease, and Susie O'Keefe for their support and suggestionsfor report. The reviewers of this report gave much helpful guidance and advice: Heather Spalding, Rob Baldwin, Mitchel Cohen, Sharon Tisher, Russell Libby, Kathleen McGee, George Appell, Paul Donahue, Mitch Lansky, Will Everitt, and especially Kim DeFeo. I would like to give special thanks to George and Laura Appell and Elizabeth Spalding. Without their advice and generosity this report would not have been possible.

For the second edition of the report, we would like to thank Rachel Zegerius for her Massachusetts specific research and writing. We would also like to thank Dr. David Ozonoff, Sue Phelan, Stephen Seymour, Ellie Goldberg, Sarah Little, Monica Garlick, and Aimee Qui for their input and review of the report

This report is based on work previously published in many different places. Some groups and resources stand out as being particularly valuable to anyone researching this issue, and to· us inparticular as sources of information, quotations, references, inspiration, and guidance: The No Spray Coalition of New York; Northwest Coalition for Alternatives to Pesticides; Pesticide Action Network of North America; Extension Toxicology Network; Environmental Risk Analysis Program (ERAP) of Comell University Center for the Environment; and Rachel Massey and Peter Montague of the Environmental Research Foundation. •

http://www.meepi.org/wnv/overkillma.htm July23, 2010 10:52:45 PM

Executive Summary

The current policies by state and municipal officials in the Commonwealth that allow and encourage the spraying of toxic pesticides to combat the West Nilevirus (WNv) are both dangerous and ineffective.

Spraying toxic pesticides to combat WNv, may cause more harm than good, exposingthe population to a new public health threat through exposure to toxic chemicals. In facspraying may even have the paradoxical effect of increasing the mosquito population by affecting its predators.

Pesticides are Dangerous and Threaten Public Health

The toxic pesticides proposed for spraying are harmful to human health, wildlifE! and ecosystems. Children and the elderly are most susceptible to the effects of toxic pesticides. In both laboratory studies and occupational settings, the toxic pesticidesbeing used for WNv mosquito control in Massachusetts have been known to cause short- and long-term respiratory problems, immune and nervous system disruption, cancer, and reproductive and learning disorders.

The Spraying for Pesticides Has Not Been Proven Effective

Adulticiding, or the sprayingto kill adult mosquitoes, has not been proven effective. The Centers forDisease Control and Prevention state that ground and aerial spraying is usually the least effective mosquito control technique.[12]

Ground spraying in cities is problematic as urban landscapes make it difficult for thorough application of the pesticide.

Spraying May Cause More Harm than Good

In addition to exposing the public to toxic pesticides, spraying leaves communities with a false sense of security making them less likely to use effective, non-toxic control measures. Long-termspraying may actually increase the number of mosquitoes by destroying predatorsthat feed on mosquito larvae andadults. Additionally, mosquitoes that are sprayed, but not killeq by the pesticides may become resistant, livelonger, become more aggressive biters, and have increased prevalence of WNv within their bodies.

While the effects of West Nile virus on people can be serious, it is far from what some have called a "deadly epidemic". Seven people in New York City contracted West Nile virus in the year 2000 and eventually died. By comparison, 2,000 New York residents died from influenza in 2000.

Promoting Safer Alternatives

The good news is that Massachusetts has the opportunity to implement a WNv prevention programthat will ensure that people, ecosystems, and wildlife are not harmed by toxic chemicals Monitoring and surveillance for the virus, combined with on the ground educational efforts aimed at minimizing breeding and biting

opportunities for mosquitoes are needed. This approach may reduce the rate of WNv infections in Massachusetts to levels arguably better than a spray program could achieve.

West Nile Virus in the Northeastern United States:

An Introduction

West Nile virus (WNv) is a disease new to the Western Hemisphere It appeared in New York City in 1999 and has since spread to animal populations in eleven states, including the District of Colombia, from New Hampshire to North Carolina. Many municipal officials have responded to the disease by spraying entire neighborhoods, fields, and water bodies with pesticides intended to kill mosquitoes that transmit the virus. See a map of human cases of West Nile Virus. See a map of avian cases of West Nile Virus

Transmitted primarily by bird biting mosquitoes, WNv can also infect humans and other animals Seethe transmission cycle of West Nile Virus, and life cycle of the mosquito. Most human infections of WNv go unnoticed or illicit ordinary flu-like symptoms. Some cases lead to encephalitis (inflammation of the brain) or meningitis (inflammation of the membranes surrounding the brain and spinalcord) and can be fatal. The elderly and individuals with compromised immune systems may be particularly vulnerable to serious illness resulting from the virus.[64]

A New York City Health Department survey of blood samples taken from people who lived in northern Queens, the epicenter of the 1999 outbreak, showedthat 19 out of 677 tested positive for the virus. None of the 19 became seriously ill, and all either reported no symptoms or mild illness, such as a low-grade fever. [77]

In 2000, WNv reappeared in New York City, and infected birds were found in upstate NewYorkas well as New Jersey, Massachusetts, Rhode Island, New Hampshire, Connecticuand Maryland. So far this year in Massachusetts, 150 birds have been tested for the virus, none of whichhave tested positive. For weekly updates on surveillance reports and State Laboratory testing results visit the MassachusettsDepartment of Public Health website at: www.state.ma us/dph/wnyjwny1,htm.

Massachusetts Prepares for West Nile Virus Mosquito Control

Response to WNv involves input and regulation from a variety of governmental agencies. The Centers for Disease Control and Prevention (CDC),·Division of Vector-Borne Infectious Diseases, are responsible for the development and modification of federal surveillance and response tactics, to be used as guidelinesby individual states. To view the federal plan visit: www.cdc.gov.

The CDC will receive weekly updates from towns, detailing significant information about WNv.

http://www.meepi.org/wnv/overkillma.htm July 23, 2010 10:52:45 PM

The CDC guidelines for surveillance, prevention, and control of WNv for2000 stated: "Adult mosquitoes should be chemically controlled within approximately a 2-mile radius around the area where a WNv positive dead bird or infected mosquitoes are found."[138]

The CDC's revised guidelines for 2001 are less aggressive than last year when it comes to broadcast spraying of adulticides. The guidelines now state, "Control activity should be initiated in response to evidence of virus transmission (to humans], as deemed necessary by localhealth departments."[12]

As to the recommended spray radius, the revised guidelinesleave it up to localofficials. "There is no simple formula for determining how large an area to treat around a positive surveillance inqicator or a suspected or confirmed human case of WN virus. Nor is there adequate information to determine the degree of vector population suppression that must be attained, or for how long this suppression must be maintained to reduce risk of disease"[12]

The Massachusetts Department of Public Health (MDPH) has devised a surveillance and response plan, which recommends methods to be used by municipalities [638]

In 2000, the Commonwealthrecommended spraying in areas found to contain evidence of avian WNv infection. Despite objections from concerned residents across the Commonwealth, officials will still consider spraying when infected birds or mosquitoes carrying the virus are found. State officialswill recommend spraying if a human case of infection is found.

The CommonwealtHs surveillance plan includes the modification of the Arbovirus Surveillance Program (ASP) , originally initiated in 1957. This past winter, MDPH convened four workgroups to revise the ASP and promote collaborative efforts between municipal health departments in order to address the threatsof WNv. The purpose of the ASP is to test birds, mosquitoes, horses, and humans inorder to detect disease or infection with the virus. The revised ASP sets comprehensive and flexible guidelines in five areas:

- Mosquito surveillance is at the core of the ASP. Because mosquitoes are the vectors of viruses like West Nile Encephalitis, monitoring mosquitoes provides a somewhat accurate estimate of the immediacyof risks to humans. Mosquitoes are testedusing fixed trap sites established in Boston, Brookline, Cambridge, Newton, Middleboro, and areas of southeastern and western Massachusetts. These sites provide information regarding mosquito numbers, virus prevalence and estimation of WNVrisk. More intensive mosquito trapping will be employed in response to increased virus activity in specific areas.
- Avian surveillance will focus on testing dead birds, and possibly live birds, throughout the summer to detect virus transmission between birds and mosquitoes. WNv is fatal to birds, witha particularly high mortality rate in American crows. Therefore, dead birds are potentialindicators of virus activity in an area. Reports of dead birds can be made to the State Laboratory InstitutE(866-627-7968 or 866-MASS-WNv) and willinitiate the pick up of bird specimens. Bird reporting and testing willbe an important component of the Commonwealtlis efforts.
- Equine surveillance will also take place at the State Laboratory InstitutE! testing horses that are suspect of infection. Randomanimal biood samples may also be tested.
- Specimens from clinical human cases of encephalitis will be screened in order to determine the possible cause of infection. In addition, hospitals will be contacted inthe geographic areas of increased virus activity.
- Also included in the surveillance plan is the need for timely communication. Laboratory reports defining virus activity will be released to the media and public daily, via a web site. Laboratory confirmation of a human case of the virus willbe communicated first to the health physician, and

subsequently to the patient. Routine media advisories will be given by MDPH in the case of risk of human infection.

http://www.meepi.org/wnv/overkillma.htm July 23, 2010 10:52:45 PM

To view the entire MDPH Surveillance and Response Plan visit http://www.state.ma.us/dph/wnv/SandR.PDF. Many

Massachusetts municipalities contract with one of the County Mosquito Control Districts to conduct local surveillance and implement pesticide applications in the individual municipalities. The Control Districts have their own policies, which are primarily derived from the CommonwealtHs plan .

The decision to spray a particular community is inthe hands of the local Board of Health. Most often Boards of Health defer to the Commonwealtl's plan , which is implemented by the Control Districts. Yemunicipalities do have the authority to halt or restrictspraying operations. For example, the cities of Boston and Cambridge will only consider pesticide spraying upon laboratory confirmation of a human infection. [16 9] • b

Decisions are made on a town-by-town and case-by-case basi!\ in order to accommodate the needs and wants of the residents. However, in the case of a public health emergency, state and federal agencies can assume jurisdiction and override town decisions.

Pesticides Used for WNv Mosquito Control in Massachusetts

Three main chemicals were used against mosquitoes in public health situations last year in the state of Massachusetts.

- Scourge, a synthetic pyrethroid containing resmethrin was used, and is proposed to be used again this year, to kill adult mosquitoes. Scourge consists of resmethrin, piperonyl butoxide, and petroleum distillates.
- To kill larvae the state has used *Bacillus thurengiensis israe/ensis* (Bti), naturally occurring bacteria that is toxic to mosquito larvae.
- Another larvicide used is methoprene (Aitosid), an arthropod growth inhibitor.

Other chemicals under review for use in killing adult mosquitoes in New England include two organophosphates; malathion and naled, and two other synthetic pyrethroids; permethrin (Ambush, Poun and sumithrin (Anvil).

To kill larvae, some New England states are considering the use of temephos (Abate), another organophosphate, and *Bacillus sphaericusm* another natural-occurring bacteria. A soapy oil called AgniqLie MMF (100% Poly (Oxy-1, 2cEthanedily, Alpha-lsooctyl Decyi-Omega-Hydroxy) may be applied as a film to water surfaces in order to suffocate larvae in other New England states.[61]

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), the nation's primary pesticidecontrollaw, classifies pesticide ingredients into two categories – active and inert. The active ingredientsare those which are designed to kill pests while the inerts are addedto make the active ingredientmore potent and easier to use. Inert ingredients can make up a significant percentage of the material thatis actually sprayed. Yet these inerts, which are often highly toxic, are often classified as "trade secrets" under law and are not listed on the label. The true nature and health threat ofthe petsicide are difficult to analyze.

Pyrethroids

Last year the synthetic pyrethroid resmethrin_(Scourge) was used by many municipalities to control adult mosquito populations. It consists of the active ingredientresmetherin, and the inerts, piperonylbutoxide and petroleum distillates. The inerts do not kill the insects, but increasethe potency of the resmetherin.

http://www.meepi.org/wnv/overkillma.htm July 23, 2010 10:52:45 PM

Other New England states are considering the use of two other synthetic pyrethroids, permethrin (Ambush, Pounce) and sumithrin (AnviQ. Pyrethrins are natural insecticidesproduced by certain species of the chrysanthemum plant. The natural pyrethrins are contact poisons that quickly penetrate the nerve system of the insect. A few minutes after application, the insect cannot move or fly away But, a "knockdown dose" does not equal an exterminating dose. The natural pyrethrins are swiftly detoxifiedby enzymes in the insect. Thus, some pests will recover. To delay the enzyme action so a lethaldose is assured, organo-phosphates, carbamates, or synergists may be addedto the pyrethrins (see inerts section). The inert inScourge, piperonyl butoxide, has been shown to cause liver tumors in rats and mice.[16]

Semisynthetic derivatives *o(* the chrysanthemumic acidshave been developed as insecticides. In general, the term "pyrethrins" refers to the natural insecticides derived from chrysanthemum flowers; "pyrethroids" are the synthetic chemicals, and "pyrethrum" is a generalname covering both compounds.[29]

Synthetic pyrethroid compounds vary intheir toxicity, as do the natural pyrethrins. Inhalinghigh levels of pyrethrum may bring about asthmatic breathing, sneezing nasalstuffiness, headache, nausea, incoordination, tremors, convulsions, facial flushing and swelling, and burning and itching sensations. The most severe poisonings have been reported in infants.[85] Pyrethrin is extremely toxic to aquatic lif such as bluegill and lake trout, while it is slightly toxic to bird species, such as mallards. Toxicity increases with higher water temperatures and acidity.[24] The EPA is scheduled to re-evaluatethe health effects of the pyrethroids in 2002.[64]

A report in the *New York Daily* News (9/9/00) tells of a woman who was sprayed directly on the street in Manhattan with Anvil (sumithrin) and ended up in the emergency room after experiencing blurry vision, nausea, itching, coughing, choking and a swollen tongue. "I threw up three days ina row, I really thought I was going to die," said the unidentified woman. In the story, a New York City Health Department spokesperson says this 'incident was one of 200 complaints from people who called the city's pesticide hotline stating the spraying had made them sick.

Pyrethroid insecticide poisoning can be of unexpectedly long duration. Pyrethroids can produce reflex hyperexcitability and fine tremor, salivation, hyperexcitability, choreoathetosis (involuntary movements), and seizures. Local effects are also seen: skin contamination producing numbness and tingling, and ingestion producing gastrointestinal irritation.[95]

The Cornell University Program on Breast Cancer and EnvironmentalRisk Factors in New York State lists over 125 journal studies on the health effects of pyrethroids. on their website.[19]

Links between pyrethroids and hormonal disruption[838]

Several studies indicate that pyrethroids disrupt the endocrinesystem by mimicking the effects of the hormone estrogen, which can cause breast cancer inwomen and lowered sperm counts inmen. A Mount Sinai School of Medicine study examined four pyrethroid pesticides, including sumithrin. It concludes, "Overall, our studies imply that each pyrethroid compound is unique in its ability to influence several cellular pathways. These findings suggest that pyrethroids should be considered to be hormone disrupters, and their potentialto affect endocrine function in humans and wildlife should be investigated."[38]

A study at the Roger Williams General Hospital of Brown University on pyrethroids concludes, "Chronic exposure of humans or animals to pesticides containing these compounds may result in disturbances in endocrine effects."[23]

http://www.meepi.org/wnv/overkillma.htm July 23, 2010 10:52:45 PM

A Cambridge University report issued in June 2000 by the Royal Society in England called for international cooperation to deal with the dangers posed by endocrine-disrupting chemicals,.including pyrethroids, and recommends reducing human exposure to these chemicals.[48]

links between pyrethroids and childhood brain cancers

A report of pesticides and childhood brain cancers published in *Environmental Health Perspectives* revealed a strong relationship between brain cancers and pyrethroids used to kill fleas and ticks. The study concludes, "The specific chemicals associated with children's brain cancers were pyrethrins and pyrethroids (whichare synthetic pyrethrins, such as permethrin, tetramethrir] allethrin, resmethrin and fenvalerate) and chlorpyrifos (trade name: Dursbary."[91]

Links between pyrethroids and neurological damage

A study conducted by the Physiological institute at Ludwig Maximilians University in Munich, Germany, found that although "a majority of complaints following an acute pyrethroid intoxication disappeared after the end of exposure," several effects were still seen in patients after more than two years. Among these long-term symptoms were" 1) cerebro-organicdisorders (reduced intellectual performance with 20%-30% reduction of endurance during mental work, personality disorder), visualdisturbances, dysacousia, tinnitus; 2) sensomotor- polyneuropathy, most frequently in the lower legs; 3) vegetative nervous disorders," includingincreased heat- sensitivitY and reduced exercise tolerance due to circulatory disorder. The study concludes, "Many of these patients exhibit pathological autoimmune diagnostical findings and developed autoimmune diseases."[59]

A study conducted by the Department of EnvironmentalToxicology at Uppsala University in Sweden studying mice found that "low-dose exposure" to pyrethroids "resulted in irreversible changes in adult brain function in the mouse" when exposed during the growth period This occurred at levels of exposure less than what was found to affect adult mice. The study also found "neonatal exposure to a low dose of a neurotoxic agent can lead to an increased susceptibility in adults to an agent having a similar neurotoxic action, resulting in additional behavioral disturbances and learning disabilities." 27

Northwestern University Medical School conducted a series of investigations at Northwestern's Department of Molecular Pharmacology and Biological Chemistry in Chicago, and has found neurologicaldamage from pyrethroids. One study, conducted by internationalexpert Toshio Narahashi, finds nenlous-system damage from pyrethroids to be comparable to DDT. This study found that "Detailed voltage clamp and patch clamp analyses have revealed that pyrethroids and DDT modify the sodium channel to remain open for an extended period of time." The results of this damage are "potent effectson the nervous system."[74]

A separate study found that pyrethroids cause "membrane depolarization, repetitive discharges and synaptic disturbances leading to hyperexcitatory symptoms of poisoning in animals." This study found that only 1% "of sodium channel population is required to be modifiedby pyrethroids to produce severe hyperexcitatory symptoms."[75]

Links between pyrethroids and thyroid damage

A pesticide study conducted ori rats concludes, "Exposure to organochlorine, organophosphorus, and pyrethroid insecticides for a relatively short time can suppress thyroid secretory activity in young adult rats." The study also said a decrease in body weight seen "s1,1ggests that pyrethroid insecticides can inhibit growth rate."[2] "We tested four frequently encountered pyrethroids, fenvalerate, sumithrin, d-transallethrin, and permethrin, for estrogen and progesterone agonist/antagonist activities. Through these hormonal pathways;

exposure to certain pyrethroids may contribute to reproductive dysfunction, developmentalimpairment, and cancer."[36]

Methoprene

The larvicide methoprene (Aitosid) is considered to be a slightly to practically nontoxic compound in EPA human toxicity ratings, which do not include adequate testing for hormone disrupting potential. However, its effects on wildlife and ecosystems- especially lobsters-- could prove devastating. The compound is dumped into water bodies like sewers, wetlands, ditches, and ponds for the purpose of killing mosquito larvae. Massachusetts authorities are dumping Altosid briquettes into 27,000 catch basins across Boston this summer7[6] Use of methoprene is particularly alarming, because it is being characterized as a harmless measure of controling mosquitoes, especially in communities that have shown resistance to being sprayed.

Methoprene is a compound that mimics the action of an insect growth regulation hormone. It is used as an inseCticide because it interferes with the normal maturation process. In a normallifecycle, an insect goes from egg to larva, to pupa, and eventuallyto adult lsee mosquito life cycle). Methoprene artificially stunts the insects' development, making it impossible for insects to mature to the adult stages, and thus preventing them from reproducing. To be effective, it is essentialthat this growth inhibitor be administered at the proper stage of the targetpest's life cycle. Methoprene is not toxic to the pupalor adult stages. Treated larvae will pupate but adults do not hatch fromthe pupal stage.[28]

Methoprene is slightly toxic to birds5[1,124] Non-lethal effects that may affect survival of the birds did appear at acute oral doses of 500 mg/kg. Theseeffects appeared as soon as 2 hours aftertreatment and persisted for up to 2 days and includedslowness, reluctance to move, sitting, withdrawal and incoordination. [47] These effects may decrease bird survivalby making them temporarily more susceptible to predation or by affecting reproductive and parenting behaviors.

Methoprene is slightly to moderately toxic to fish.[117] Methoprene residues may have a slight potentialfor bioconcentration in bluegill sunfish and crayfish.[118] Methoprene is very highly toxic to some speciesof freshwater, estuarine, and marine invertebrates ·2ll.!!

Studies at the laboratory of researcher CharlesMcKenney have shown that methoprene, an insect JHA (juvenile hormone analogue) used in mosquito control, inhibits the metamorphic success of larvalestuarine shrimp *(Palaemonetes pugio)* and crabs *fRhithropanopeus harrisit)* with exposure to concentrations which proved lethalto insect pests, including salt marsh mosquitoes. Differentialsurvival and developmental rates of larval shrimp and crabs indicate that certain larval stages are more sensitiveto exposure than oihers.[67]

Methoprene is believed to have a significant impact on lobsters. Research into the toxic effects of methoprene and other mosquito control chemicals on lobsters is ongoing. The Lobster Institute at the University of Maine is working on such research projects, but have not yet completed or publishedtheir study results.[104] A $125 million putative class action lawsuit has been filed in New York by lobstermen against insecticide manufacturers for allegedly wiping out the lobster fishery.[107]

Hans Laufer, a University of Connecticut professor emeritus, who has studied reproductive hormones in crustaceans for 20 years, has questioned the use of a larvicidethat interferes with a mosquito's ability to molt.

http://www.meepi.org/wnv/overkillma.htm July 23,2010 10:52:45 PM

"In mosquitoes, it (methoprene) acts as an anti- hormone, and tha'S what's killing them," Laufer said "It's doing exactly the same thing to lobsters, exactly the same.i2[1]

Birth defects, frogs and methoprene

Use of methoprene is also a significant concern due to the effects of t]le retinoids that are formed when the compound breaks to sunlight Retinoids, a class of chemicals closely related to vitamin A, can cause birth defects in humans and may be contributing to the global epidemic of skeletal deformities in frogs.[64] Pr. David Gardiner, a research biologist at the University of California at Irvine, has been studying retinoids for at least a decade, and in recent years he has probed frog deformities. To him, retinoids are the obvious culprit in the mystery of the misshapen frogs because of the peculiar kind of limb deformities being observed. "There is no other known mechanism for this [besides retinoids]," Gardiner says. "Much of early development is controlled by retinoids," he says. "Our body [and the body of a frog] is completely dependent on them".[60,72]

Exposure to retinoids could also make frogs more susceptible to infectious diseases, Gardiner says: "The kinds of chemicals that would target development of limbs would target all organ systems," .including the immune system. Frogs with abnormal legs would also very likely have abnormal immune systems. This could explain why some frogs are now suddenly falling victim to infectious agents that they resisted for millions of years.

Peter Montague, of the Environmental Research Foundation points out: "The pesticide regulators at U.S. Environmental Protection Agency have missed a key feature of a chemical (methoprene) whose safety they regulate. It shows once again that relying on risk assessment leads to bad public health decisions. EPA's risk assessments have routinely failed to evaluate the breakdown by-products of the chemical pesticides that the agency has deemed safe enough to allow as residues on our dinner plates. It also means that thousands of pesticides now in common use need to be re-tested to see if their breakdown by- products are dangerous to humans or other species."[72]

Bacillus thurengiensis israelensis (Bti) and *Bacillus sphaericus*

BTi is a biological pesticide that contains naturally occurring soil bacteria in different strains that target specific insects. BTs are not known to be toxic to animals, birds, humans, fish or beneficial insects. BTi is required to have EPA warning and caution labels, as is the requirement by law for any registered pesticide. BTi and variants are widely used in organic farming. Some trade names are Aquabaq Teknar, and LarvX. *Bacillus sphaericus* (VectoLex) is another naturally occurring "biopesticide." It was registered in 1991 for use against mosquito larvae, which ingest the bacteria and die after the toxin in the bacteria disrupts their gut function.

Based on extensive testing, no harmful effects to the public are expected to occur when biopesticide products are applied according to label directions. Because there is the potential for skin and eye irritation, applicators are warned to avoid direct contact with the granules or a concentrated spray mix. Various tests revealed no expected harm to non-target organisms.[111]

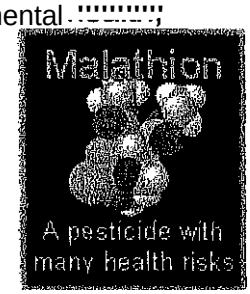
Although these compounds are not used in agriculture, related ones are approved for use in organic farming. It is unwise to broadcast these biopesticides widely. If their use is not limited, there is a chance that insects may develop immunity to these important pesticides, thereby limiting their effectiveness for mosquito control and for use by organic farmers.

http://www.meepi.org/wnv/overkillma.htm July 23, 2010 10:52:45 PM

More research needs to be done on the ecologicaleffects of biopesticides. What non-target invertebrates that are important in the food chain are also affected by their use? How will a potential decrease in this part of the food chain affect fish and amphibians, and the birds and animals that feed on them?

Malathion

Malathion is one of the most widely used organophosphate insecticides in the United States and throughout the world. Contributing to its popularity is malathion's relatively low acute mammalian toxicity. But like DDT and other pesticides that have been found to cause irreparable damage to human and environmental health, malathion may pose a greater risk than the product labelwould lead one to believe.



Shown to be mutagenic, a possible carcinogen, implicated in vision loss, reproductive and learning problems, immune system disruption and other negative health effects in human and animal studies, damaging to non-target organisms, and containing highly toxic impurities, malathion has a legacy of serious problems.[84]

Organophosphates, in the same chemical class as the nerve gas Sarin, act as neurotoxins, disrupting the nervous system by inhibiting the enzyme cholinesterase. High exposures can produce fatal poisoning.[97] in April 2000, a U.S. Environmental Protection Agency (EPA) committee reviewed a series of studies on mice and rats exposed to malathion. Based on this review, the committee concluded that there was "suggestive evidence of carcinogenicity."[112] For the momenmalathion remains listed by EPA as "not classifiable" with regard to carcinogenicity5[4] Recent evidence suggests that organophosphates such as malathion can cause Non-Hodgkin's Lymphoma (NHL).[123,70]

In June of 2001, the *Glens Falls Post-Star* reported that 37 fourteen and fifteen year-old girls became ill at a softball game after being exposed to malathion, which was being applied to an area adjacentto the field. I§ee news story)

During a malaria mosquito eradication spray program in Pakistan in 1976, 2,800 people became poisoned from malathion and 5 died.[3] Physicians at Travis Air Force Base Medical Center in California have observed seven children with bone marrow disorders over the past 8 years. The physiciansbelieve organophosphate pesticides caused the blood disorders, in all cases. All blood disorders occurred shortly after exposure to the pesticides DDVP/propoxur and malathion.[96]

In laboratory animals, malathion exposure has caused stomach ulcers, testicular atrophy, chronic kidney disease,[98] increased liver and kidney weights, adverse gastrointestinal tract effects,[9] and changes in the adrenal glands, liver, and blood sugar levels.[43].4 Use of malathion by farmers in Iowa and Minnesota has recently been linked to an increased risk of one type of NHL[10] Juvenile male rats exposed to daily doses of malathion had decreased numbers of sperm forming cells5[3,54] In sheep, malathion exposure of pregnant ewes resulted in an increase in aborted fetuses, stillbirths, and low birth weight bapies. Longer duration and earlier initiation of malathion exposure resulted in more severe problems.[106]

Between 1957 and 1971 Japanese school children experienced a tremendous increase in cases of myopia (nearsightedness), which correlated with the increased use of organophosphate insecticides, including malathion.[48] 98 percent of the childrenexamined from Saku, an agricultural area where malathion was regularly applied, had reduced visual keenness. Other examples of what is now called 'Saku disease' in both

children and adults were reported throughout Japan where organophosphate pesticides were applied. In California, a lawsuit is pending on behalf of a 15 year old boy who was declared legally blind after being

outside while helicopters were spraying malathion. An ophthalmologist and a pesticide expert both agree that the boy may have Sakudisease.[56]

Eradication programs for pests such as mosquitoes and fruit flies expose thousands of people to malathion applied in aerial applications. This type of pesticide application often provokes complaints of allergic reactions and flu-like symptoms_1Q1,§2,S[3] 1mpurities and by-products present inmalathion can further disrupt immune system function.[20.100] Immunosuppression may enhance susceptibility of mammalian systems to bacterial, viral, or parasitic infection or possible increased tumor formation.s[9,84a]

Ironically, use of these pesticidesfor WNv mosquito control could actually end up suppressing human and avian immune systems in the areas sprayed, putting each speciesat greater risk than before of spreading contracting, and becoming seriously ill from WNv.

Malathion is lethal to beneficial insects, snails, microcrustaceans, fish, birds, amphibianfl and soil microorganisms. Sublethal exposure of these species can cause a variety of behavioraland physiological abnormalities.[84]

Naled

Naled (trade name Dibrom) is an organophosphate withmany of the same characteristics and concerns as malathion. Naled can cause cholinesterase inhibition in humans: that is, it can over stimulate the nervous system causing nausea, dizziness, confusion, and at high exposures, can cause respiratory paralysis and death. One of the byproducts of degradation of Naledis dichlorvos, another registered organophosphate. This compound is of toxicological concern. [115]

Researchers at the Cornell University Program on Breast Cancer and EnvironmentalRisk Factors in New York State review several studies on dichlorvos. In one study, female mice that were fed high doses of dichlorvos over a long period of time had a higherfrequency of stomach cancers than untreatedmice. High doses of dichlorvos fed over two years caused an increasein the number of male rats that had pancreatic tumors and leukemia. A higher number of leukemia cases were reported in one study among male farmers who used dichlorvos for more than ten days per year, compared to those whohad not used dichlorvos. A higher number of childhood brain cancer cases were reported among families that used dichlorvos than among families that did not.[18]

The pesticide trichlorfon is a common ingredient in the mosquito pesticide dibrom (naled). In one study, trichlorfon was found to cause a "severe reduction" in brain weight (and shape) in test animals exposed. The timing of exposure to the developingoffspring appeared to be the key factor in determining neurological damage (known as the "critical brain growth period"). It occurred when the chemical was administered between 40-50 days gestation for the guineapig, which scientists say, correlates with the brain growth spurt period for the animal.[68]

Russian scientists studied the growth rates of fish called Bream *(Abramis brama)* after exposure to the dibrom/ naled contaminant dichlorvos. The first major effect detected was a significant reduction in the growth rates of the fish. Researchers believe it may be due to the subtle neurotoxin actions of the pesticideand its effects upon the areaof the brain involvedin feeding or food search mechanisms. [40]

Naled is characterized as very highly toxic to bees and aquatic invertebrates. Itis moderately to highly toxic to fish and slightly toxic to upland game birds and waterfowl.[298] There is potential for chronic risk from Naled to estuarine invertebrates_11[5]

http://www.meepi.org/wnv/overkillma.htm July 23, 2010 10:52:45 PM

Temephos

Temephos (Abate) is a non-systemic organophosphate insecticide used to control mosquito, midge, and black fly larvae. It is used in lakes, ponds, and wetlands. It also may be used to control fleas on dogs and cats and to control lice on humans. The compound may also be found in mixed formulations with other insecticides including trichlorfon. As an organophosphate, it has many of the same concerns and characteristics as malathion and naled.

Symptoms of acute exposure are similarto other organophosphates and may include nausea, salivation, headache, loss of muscle coordination, and difficulty breathing.[119] Temephos produces signs and symptoms typical of cholinesterase inhibition at moderate levels of exposure, but mortality does not occur unlessvery large doses of the compound are administered.[33,119] Temephos may greatly increase the observed toxicity of malathion when used in combination with it at very high doses.[33] The compound has the potential to cause significant toxic effects (depression of the activity of the enzyme cholinesterasein the blood and the brain) in mammals exposed over long periods of time.

Tests with various wildlife species indicate that the compound is highly toxic to some bird species. The compound is also highly toxic to bees.[51]·;ills Temephos shows a wide range of toxicity to aquatic organisms,

including salmon.[47] Freshw ter aquatic invertebrates such as amphipodsare very highly susceptible to temephos, as are some marine invertebrates[0] Temephos is very highly toxic to saltwater species such as the pinkshrimp,[50] and presumably to lobsters as well.

Temephos has the potentialto accumulate in aquatic organisms. In one study, the bluegill sunfish accumulated 2300 times the concentration present inthe water. [119]

Agnique MMF (monomolecular film) **and Surface Oils**

These compounds are applied as a film to water surfaces. Agnique reduces the surface tension of the water and makes it difficult forthe larvae and pupae to attach. The film also blocks the breathing tubes of larvae and pupae causing them to drown. Resting males and egg-laying females that come in contact with the film will also drown. Mosquito control begins minutes after application. Laboratory and field testing has shown the film to remain potent for 10 to 14 days on standing water.[1] Although there is no evidence that this compound is harmful to human health, it is certainly a significantalteration to an aquatic ecosystem if broadly applied to ponds and wetlands, as it will come into prolonged, intimate coritactwith invertebrates, fish, birds, frogs, otters, and other ecosystem inhabitants

Image

•

Oils, like films, are used to suffocate larvae, pupae, and emerging mosquitoes. They are derivedfrom petroleum distillates and have the trade names Bonideand BVA2. The EPA admits that misapplied surface oils may be toxic to fish and other aquatic organisms![13] More research is neededto determine the effectsthat Agnique MMF and other surface oilfilms may have at an ecosystem level

Other ingredients in pesticide mixtures

There can be numerous "inert" ingredients in pesticides that are added to improve its storage, handling, application, and effectiveness. Many of these compounds are potentiallyharmful, even more so than the active ingredient in the pesticide. Since the technical (chemically pure) grade of a pyrethroid is usuallyformulated (mixed with carriers, solvents, synergists, etc.) foruse in commercial pest control, the toxicity of these other

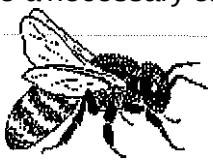
ingredients must be taken into consideration when assessing the toxicity of a formulated product. Researchers found a ten-fold difference in toxicity b.etween formulations with the same active ingredienbut with different carriers, solvents, etc7[3] Some mixtures of Anvilare made up not only of 10% artificially manufactured Sumithrin but 10% piperonyl butoxide (PBO), a suspected carcinoge[\ and 80% "inert" ingredients such as polyethylbenzene, which is listed by the EPA as being "potentially toxic."[82]

PBO is added to make the pyrethroids more effective. ltacts by inhibiting naturally occurring enzymes that would otherwise degrade the insecticide. PBO breaks through the insect's defense, making the insecticide more powerful. The EPJl\s Office of Pesticide Programs suspects PBO of being a carcinogen. The National Institute for Occupational Safety and Healtt\s Registry of Toxic Effects of Chemical Substances also lists it as a suspected gastrointestinal or liver toxicant, and a suspected neurotoxicant. It has also been reported as a suspected reproductive toxicant.[49],[83] There is also some evidence that PBO-pyrethroid mixes can affect the human immune system.[22]

Polyethylbenzene (PEB), also known as heavy aromatic solvent naphtha (petroleum), is widelyused in pesticides. PEB is listed on the EPA Office of Pesticide Programs' Inert Pesticide Ingredients List No2, which is a list of 64 substances the EPA "believes are potentially toxic and should be assessed for effects of concern. Many of these inert ingredients are structurally similar to chemicals known to be toxic; some have data suggesting a basis for concern about the toxicity of chemical" PEB is related to ethylbenzene, which is listed as a suspected reproductive toxicant and a suspected respiratory toxicant by the EPA The white mineral oil, also known as hydro treated light paraffinic petroleum distillate, is also listed on the EPA's 1nert Pesticide Ingredients List No.2 of potentially toxic chemicals.[83]

The threat to agriculture

All of the aforementioned chemicals are designed to kill insects, many of which are responsible for pollinating wild and cultivated plants in Massachusetts. The future of agriculture depends on pollinators. Insect pollination is a necessary step in the production of most fruits and vegetables we eat and in the regeneration of many forage crops utilized by livestock Massachusetts' growers of apples, cherries, blueberries, cucumbers, pumpkins, and many other crops dependon insect pollinators-- both managed and wild – to produce fertile seeds and ful bodied fruit. Recent surveys document that more than thirty genera of animals-- consisting of hundreds of species of floral visitors -- are required to pollinate the 100 or so crops thatfeed the world. Domestic honey bees service only 15% of these crops, whileat least 80% are pollinated by wild bees and other wildlife.[47]a Organic crops are also at risk, should the state chose the method of aerial or ground spraying of pesticides. It is unlikely that sprayed farms will lose their certified status, but sprayed crops and plant material may not be ableto be marketed as 'organically produced'. [51]a



Pesticides Risk Assessments: An Inexact Science

There are some consistent themes and results thatarise from any governmental agency review, approval and subsequent environmental application of pesticides. When chemicalcompany scientists come up withthe latest pesticide, the evaluation process used to determine its 'safetY often does not take into account howthe compound actually behaves in nature. Factors like synergistic effects with other chemicals, even those thatthe active ingredient is mixed with-- so called 'inerts' -- are not thoroughly evaluated

The toxic effect on humans, particularly at risk populations like the elderly, children, and pregnant and nursing mothers, is not thoroughly examined Studies of the long-term subtle effects on endocrine systems, behavior,

intelligence, cancer, etc., are either not done or are inadequate The chemical manufacturer usually does the testing and supplies the data. Rarely taken into consideration are effects on animals and ecosystems. For

example, how will frogs, fish, birds, otters, etc., be affectedif all arthropods-- so important in the food chain-- are wiped out from the pond they live in or near?

The chemical company then uses public relations and lobbying efforts to gain agency and public approval for the new pesticide. The compound is released into the environment and the unintended consequences begin. Sprayed broadly over fields, in neighborhoods, in wetlands, from planes and trucks, or dumped into sewers and bodies of water, its effects are seen in unpredicted arid insidious ways. People become sick, others develop multiple chemical sensitivity disorder, some die. Lobsters, birds, bees and butterflies are found sick, dead, or exhibiting bizarre behaviors.

Mosquito Control - Dangers

It can be years before a angerous comp und, once_ appro_ved and e en mandated for use by the governmen1s bannedor certa1n uses of 1t restncted Cons1derthe Pesticide examples of lead in paint and gasoline, DDT in pesticides, DES and thalidomide for pregnant women. On June 8, 2000 the EPAannounced a ban on virtually all uses of Dursban (chlorpyrifos) in residential and commercial buildings. Diazinon, one of the most widely used pesticides in the United States, will be phased out of home and garden use by 2004 because of health concerns. Nearly 100 pesticides have been banned or severely restricted by the EPA since their introduction.[110]

The 'risk assessment' models used by the stateto evaluate the chemicals, although they enjoy widespread use in the regulatory community, are inadequate in determining whether the introduction of these compounds into the environment will adversely affect humans, wildlife, and entire ecosystems.

As Peter Montague of the EnvironmentalResearch Foundation points out in hiscriticism of risk assessment, "Current policies such as risk assessment and cost-benefit analysisgive the benefit of the doubt to new products and technologies, which may later prove harmful. Andwhen damage occurs, victims and their advocates have the nearly-impossible task of proving that a particular product or activity wasresponsible."[71] In order to protect public health and the environment, our standard shouldbe equivalent to that of the FDA's, where a product is considered harmful until it is proven safe.

"Comparative risk assessment (CRA) is chiefly a means for increasing the political power of 'experts' and reducing the political power of the generalpublic. The experts will decide what is important and what is safe, and will be allowed to impose their views on the public. But CRA is not an objective, scientific enterprise; it is distinctly a political process. CRA 'experts' have no more legitimateclaim to authority or power than anyone else in society. Using CRA will inevitably lead to new environmental injustices, as the voices of the public are excluded frorh the debate, and the 'experts'.,.. many of themthe same people who created major environmental problems we now face-- make more bad decisionsin a politicalvacuum."[69]

Montague puts forth a model based on the Precautionary Principle,[71] which says in summary:

1. People have a duty to take anticipatory action to prevent harm.

2. The burden of proof of harmlessness of a newtechnology, process, activity, or chemicallies with the proponents, not withthe general public.

3. Before using a new technology, process, or chemicaor starting a newactivity, people have an obligation to examine "a full range of alternatives" including the alternative of doing nothing.

4. Decisions applying the precautionary principle must be "open, informed, and democratic" and "must include affected parties."

The Wingspread Statement on the Precautionary Principle states: "When an activity raises threats of harm to the environment or human health, precautionary measures shouldbe taken even if some cause and effect relationships are not fully established scientifically."[1038]

The most common argument that activists will come across when pointing out the real dangers of pesticides and their use for mosquito 9ontrol will be the dose. The officials and applicators will assure the public that the levels of chemicals they will be exposed to will be so low, and so infrequently applied, that there will be no effect on the environment and human health, and/or thatthe compound's toxicities quickly degrade. This is not true for two reasons. First, many of these chemicalshave significant to subtle negative health and environmental effects at extremely low levels. Secondly, they are *never* applied as planned. There will a/ways be mistakes, spills, and over sprays. The compounds, althoughanalyzed for safety and degradation characteristics under ideal laboratory conditions, will be applied by real people in the real world.

Pesticides and Methods Used for Mosquito Control in Massachusetts are Ineffective

What percentage of the mosquito populationin a sprayed area is killed by the pesticide? This question seems the most important, but we face a lack of knowledge regarding the answer. If the efficacy of spraying approaches zero, what's. the point of exposingour bodies, ecosystems, and wildlifeto toxic chemicals in the first place? "We need to address this, becauseif we're just sprayingall over and not doing a damn bit of good, then this is a waste of time and money, and it's alsea hazard," says Dr. David Pimentel, a professor of entomology at Cornell University and a longtime pesticide researcher.[31]

Most spraying efficacy studies are done under outdoor "lai:J' type conditions, often with caged mosquitoes placed at measured distances from spraying, at differing pesticide potencies. The tests do not take into account the many variables that are involved in ground spraying. As mosquitoes are mobile, and hide under leaves and in vegetation, extrapolating the efficacy numbers fromthese studies to actual spraying programs is questionable.

"In order to work, the insecticidemust hit the mosquito directly," says Dr. Pimentel. "But since spray trucks are only fogging the street side of buildings, I doubt that more than one-tenth of 1 percent of the poisonis actually hitting its target. And you have to put out a lot of material to get thalone-tenth of a percent onto the mosquito."[31] Other scientists have estimated that less than 0.0001% of ULV (Ultra Low Volume) pesticide sprays actually reach the target insects.[89] So for every droplet that reaches a mosquito, hundreds of thousands more droplets circulate pointlessly in the environment.[65]

Months after local governments throughout metropolitan New York began deploying spray trucks and helicopters to fight West Nile, health officials at all levels of government still have released only rough estimates, not specificdata, about how effective spraying has been in killing disease-carrying mosquitoes. "We agree that effectiveness is an important question, and we intend to answer it," said Dr. James Miller, West Nile coordinator for the New York City Health

Department. Though they haven't released any data, Miller and other New York City officials estimate that in the city, mosquito counts after a spraying are "up to 85 percent" lower

than they were beforehand. And Deputy Commissioner Carl Johnson of the state Department of Environmental Conservation, which regulates pesticide use around the state, said local governments have anecdotally reported "60 to 80 percent reductions" afterspraying.[31] .

Some mosquito-control experts from outside the region, however, are skeptical. "I find it hard to think thatthey could consistently get 85 percent control sprayingin an environment with so many trees and houses and other obstructions," said Judy Hansen, a past president of the American Mosquito Control Associationwho has run the mosquito-control program in Cape May County, N.J., for 40 years. [31] "The people in New York ought to be very cautious about saying they're getting 85 percent control," agreed RayParsons, who runs Houston's program and was a consultant to Rockland County this year. Trap experiments in residential areas in Florida, the state with the most extensive mosquito-control experience, generally show a reduction of about 30 percent after a spraying, "and that's also about what we get in Houston," Parsons said.[31]

The Cambridge, MA WNv Advisory Committee points out that the truck-based pesticide application methods that were used in Massachusetts may prove ineffective for a variety of reasons.[9]a They point out the following factors that impact the effectiveness of pesticidespraying in urban areas:

- The most prevalent local bridge-vector mosquitoes prefer birds, particularly qirds at rest, of which there are few in the street and building-front areas at the time ttie spray is applied
- Roosting areas may be higher than the reach of the spray
- Buildings close to the street restrict the lateral spread of the spray
- Backyard roosting areas are not effectively reached becauseclose spacing of buildings limits penetration beyond the buildings
- The period that the spray is effective and airborne is of relatively short duration

The CDC agrees that, "ground applications are prone to skips and patchy coverage in areas where road coverage is not adequate or inwhich the habitat contains significant barriers to spray dispersaland penetration."[12] 1n a 1998 study, it took 2-3 times more insecticideto kill90% of the mosquitoes inresidential

. settings versus open areas. Sucha high saturation is not permitted under current labeling safety guidelines. [37]

The Public Health Threat of West Nile Virus: Not a "Deadly Epidemic"

It would be unfair to downplay the seriousness of a severe infection of West NileEncephalitis. A severe infection can prove painfully debilitating, or even fatal. Fortunately, it is extremely unlikelythat someone will get sick and die from WNv, even in areas where it is endemic. While determining any one person's risk levelis difficult, it is importantto point out the range withinwhich uncertainty exists.

West Nile virus was first identified in the United States during the summer of 1999 when a large number of birds were found dead in the New York City area. Out of a population of more than 7 milliof\ 62 people- or less than .0009% -- became illwith the virus, and 7 died(1 in 1 million). The median age of the people who became ill was 68 years. The seven who died ranged in age from 68 to 87 years of age. Ofthese seven, one had HIV and 3 were on immunosuppressive drugs forcancer.[77] By comparison, more than 2,000 NewYorkers died from the flu in 1999.[14]

A New York City Health Department survey of blood samples taken from people who lived in northern Queens, the epicenter of the 1999 outbreak, showedthat 19 out of 677 tested positive for the virus, but none had become seriously ill, and all either reported no symptoms or mild illness, such as a low-grade fever. The survey concluded that between 1.2 percent to 4.1 percent (between533 and 1,903 people) of the 46,000 residents in that three-square-mile area had been infected. Of the infected group, four people in the sample had non-specific aches, pains or fever.1[7]

WNv was first identified in the Boston area in July 2000 when a dead crow was found near Willow Pond. As of mid-November, a total of 448 birds had diedin Massachusetts due to infection from the virus, and one horse had developed severe neurological disease. There were, however, no reported cases in Massachusetts of human infection.[13]

Michael Gochfeld, Professor of Environmentaland Community Medicine at the Robert Wood JohnsonMedical School and School of Public Health writes: "In weighingthe risks and benefits of mosquito control, weshould consider the disease itself and the risk to the human population The media always paired the words "lethal" or "deadly" with "West Nile" or "encephalitis," reinforcing in the publics mind the danger from the disease. But it would be equally appropriate to characterize West Nile virus infection as "unapparent," "usually asymptomatic," or "occasionally serious." Seven deaths in a population of over 10 millionpeople over a one month period is certainly tragic, but pales beside the number of deaths frommany other diseases that are addressed less aggressively.[39]

The only human epidemic of West Nile virus infection that has been well studied occurred in Romania in the late summer of 1996. The U.S. Centers for Disease Control and Prevention assisted in the evaluation and control of that epidemic and recently published a report in *The Lancet,* the leading British medical journal. [108]

In that epidemic an estimated 94,000 people were infected by the virus, of whichabout 400 developed clinically apparent encephalitis confirmed by virological studies. Fifteen of those people, most over the age of 65, died. In Africa, where West Nile virus has been recognized for more than sixty years and where it is widespread, there have been very few human epidemics It is important to note though thatthe lack of identifying these epidemics in Africa may be due to the incapacity of the medicalinfrastructure that exists there. However, West Nilevirus infection is characterized by its sporadicoutbreak in humans, even in areas where it is endemic in birds. This is likewise true of related infections, such as St. Louisencephalitis and Eastern equine encephalitis, where 30 or more years may pass betweenhuman outbreaks. In addition, our actual knowledge of the dynamics of arboviraldiseases is deficient, to say the least. We have insufficient evidence to know how to control these diseasesor how our control measures may affect them. Knowledge of these numbers is crucialin assessing the risk-risk tradeoffs essentialto public health decisions in this area [39]

Pesticide Spraying: A Quick, Easy and Lucrative Fix

What's behind the big push by the vast majority of government officialsto spray toxic pesticideswhen the West Nile virus appears? When the public heard of a potentially fatal virus being spread by mosquitoes, they looked to federal, state and local officials for solutions. Last year, when the West Nile virus came to Massachusetts, most government officials were caught off guard and were unprepared. They had not developeda plan on how to effectively address the issue Pesticide spraying provided a quick and easy solutionto a very complicated and multifaceted problem. Thinking they had to "do something", most government officials put their finger firmly on the pesticide trigger, picking the easiest and quickesbut not the safestor most effective response to address the WNv. These officials could say that they had done "something", even though their solutionmay have caused more harm than good.

There is also money to be made by sprayingpesticides. Pesticide manufacturers and applicators stand to profit from manufacturing and applying sprays for WNv mosquito control. A pesticide applicator in Maine has been reported as saying WNv mosquito control spraying "would be good for business."[104] Clarke Environmental Mosquito Management, Inc. waspaid $650/hour per truck in a $4.6 million New York City contract.[81] The company's bid to spray was in excess of $50 million over three years[42] This bid was rejected by the state, and Clarke was recently fined $1 million for violating New York State's pesticide application laws.[7]a

In New York, a Long Island landscaping company agreed to pay a fine and cease an advertisingcampaign falsely claiming that its spraying of homeowners' trees and shrubs would kill mosqujtoes carrying the West Nile virus. The action against Green Island Tree Spray Inc. of Huntingtonincludes a fine of $35,000 and restitution to customers who hired the company based on its deceptiveadvertising. "This pesticides applicator cynically preyed upon peoples' fear of the West Nile virus for the sake of increased profit," said New York Attorney General Spitzer. "This action should serve as a warning to others who might contemplate similar schemes."

Pesticide Spraying May Cause More Harm Than Good

Spraying pesticides for mosquito control may be worse than ineffective, it may even make the West Nile. irus situation worse. First, sprayingcan increase mosquito populations by killing off natural predators (fish, other arthropods, birds, etc.) of the mosquitoes and their larvae, thereby removing natural checks on population levels. A 1997 study looked at trends inpopulations of *Culiseta me/anura,* the mosquito primarily responsible for transmitting eastern equine encephalitis (EEE) among birds. Over a period of eleven years, Cicero Swamp in central New York state was sprayed fifteen times with the insecticide Dibrom (naled). Instead of declining the population of *Culiseta me/anura* grew fifteen-fold during this period. The study suggests that the pesticides may have altered the ecologicalbalance of the swamp, killing organisms whose presence would ordinarily help limit the mosquito population.[48,65]

Second, as ecologist Garret Hardin puts it "every biocide selects for its own failure." This means that mosquitoes can and will become resistant to chemicalefforts to destroy them. Overuse of pesticidesmay create resistant super-mosquitoes that require ever increasingly toxic chemicals to kill them.[25]

Thirdly, toxic chemicals may be leaving mosquitoes that are sprayed but not killed in an immune-compromised state, thereby allowing them to accumulate and spread more WNv than healthy mosquitoes. "Every time a mosquito spray plane or truck sprays these proven genetically damaging pesticides over the area, they are very likely increasing the amount of subtle genetic damage inthe mosquito population, and hence, increasing the number of mosquitoes withgenetic flaws which could in theory, allow the encephalitis virus to take holdand grow more rapidly," speculates pesticide researcher Richard Pressinger.[92] Walter Tabachnick, director of the Florida Medical Entomology Laboratory, disputes this theory: "Tomy knowledge there is no information that indicates sub-lethal doses influence movement (of WNv within a mosquito's body). This, too, seems unlikelyto me to have any major role inmosquito biology and disease epidemiology."[104] Clearly, more research is needed on this question.

Dr. Ray Parsons, who heads the Harris County Mosquito Control Division in Houston, has observed that malathion may actually aggravate *Culex,* causing an increase in aggressive biting behavior for an hour or two after spraying?[9]

Finally, the public living in sprayed areas may feel a false sense of security. If they feel that fewer WNv mosquitoes are around, they may be less likely to use other proven measures to prevent mosquito breeding on their property and bites to themselves.

Global Climate Change May Increase Mosquito-Borne Diseases

Increasing international trade and travel create new opportunities for exchange of diseases quickly and effectively across regions. Paul Epstein of Harvard Medical School's Center for Health and the Global Environment argues that the spread of mosquito-borne diseases like WNv is also aided by several phenomena associated with climate change, including mild winters, hot summers, and drought.

According to Epstein, back-to-back weather extremes in 1998 and 1999 probably encouraged the proliferation. of WNv and the mosquitoes that carry it. In a recent article in *Scientific American* he writes, "The mild winter of 1998-99 enabled many of the mosquitoes to survive into the spring, which arrived early. Drought in spring and summer concentrated nourishing organic matter in their breeding areas and simultaneously killed off mosquito predators, such as lacewings and ladybugs, which would otherwise have helped limit mosquito populations. Drought would also have led birds to congregate more, as they shared fewer and smaller waterholes, many of which were frequented, naturally, by mosquitoes." Later in the summer, heavy rain created new mosquito breeding opportunities. Higher temperatures also tend to increase mosquito activity. "Computer models indicate that many diseases will surge as the earth's atmosphere heats up, [and tha} signs of predicted troubles have begun to appear," he writes in the article. [25a.64]

Pesticides Used in Massachusetts to Control WNv Could Affect the Lobster Industry

Joseph Finke, a. Long Island lobsterman for the past 20 years, recalls the day that death, not lobsters, came crawling out of his mesh wire traps. It was Sept. 20, 1999, four days after Hurricane Floyd dumped more than a foot of rain on Long Island. "Not in my worst nightmare could I ever have imagined that sight," said Finke, · remembering the dead, dying or deformed lobsters that clogged his traps. Many area lobstermen, and a growing number of scientists, believe that New York City's use of pesticides in 1999 to combat the West Nile virus, along with huge runoffs from Hurricane Floyd, may have combined to trigger the lobster kill More than 10 million lobsters, or 90% of the stock, are thought to have died n the western part of the Long Island Sound [102] Nick Crismale, president of the Connecticut Lobstermen's Association, said 150 lobstermen who fished in the western Long Island Sound lost their livelihoods. The remaining 1,150 who fish in the Sound have seen a dramatic reduction in their catch, some as much as 65 percent.[45]

The pesticides used for mosquito control are designed to kill bugs, and lobsters are bugs, or more specifically arthropods. They share many lifecharacteristics and a common evolutionary history with insects. They both have chitinous external skeletons and develop and grow from larvae through a series of molts. Although there

is clear evidence that lobsters and other aquatic arthropods are susceptibleto pyrethroidstemephos,[90] and methoprene,li.ll.1§,l!Q,IM many public officials and some scientists have been unwilling to pin the devastation of the Long Island Soundlobster fishery on the 1999 sprayingfor West Nile virus.

The lobstermen, however, are not holding back. They lay the blame for the lossof their $45 million fishery firmly on WNv spraying, and have filed a $125 million putative class action lawsuit ?lgainst insecticide manufacturers.[107]

According to figures released by the National Marine Fisheries Service, Massachusetts generated over $204 million in revenue from commercial fisheries and mariculture operations in 1998, over $48 million of this was from lobsters. In 1999, over $67 millionwas made by Massachusetts lobstermen7[58]

"If it [pyrethroid insecticide) gets into the water, it willkill aquatic life," says pesticide expert Richard Bromilow of Britain's Institute of Arable Crops Research in Rothamsted. Robert Bayer of the Lobster Instituteat the University of Maine agrees. "There's no smoking gun, but it's very likelyinsecticides [are the cause].'[63]

Bayer is currently conducting experiments on the effects of methoprene and other pesticideson lobsters, but he has not yet completed or publishedstudy results.[104]

Hans Laufer, a University of Connecticut professor emeritus, said he became alarmed after listening to lobstermen describe finding egg-bearing lobsters that had malted before their eggs hatched, ineffect shedding their eggs along with their shells. Laufer, who has studied reproductive hormones in crustaceans for 20 years, · questioned the use of one larvicide that interferes with a mosquito's ability to molt. Insects, Laufer said, are biologically related to lobsters. The larvicide, methoprene, is knownto harm smallcrustaceans, Laufer said It acts in a similar fashion as nonylphenols, disrupting endocrine hormones and interfering with reproduction. "In mosquitoes, it acts as an anti- hormone, and !hats what's killing them," Laufer said "It's doing exactly the same thing to lobsters, exactly the same.'[21]

Even if the insecticides are not directly killing the lobsters, they triggered the populationcrash, say other investigators. Richard French of the University of Connecticut and his colleagues found no evidence of bacterial, viralor fungal disease. But they discovereda Paramoeba parasite in the nervous system of all the lobsters studied. "The insecticide probably lowered their immune system, allowing the infection to overwhelm the population," says French. However, he has yet to prove the parasite actuallykills the lobsters. The EPA has now launched an investigation into the cause of the.lobster crash. Scientistsestimate it will take at least 10 years for the population to recover.[63]

Clearly, more research is neededon the effects that mosquito control pesticides might have on lobsters, particularly sub lethal effects at low levels. If exceedingly low doses, even in the part per billion range, can cause behavioral, reproductive, and immune systemimpairments, the results for Massachusetts' lobster industry, and indeed the ecology of the marine environment, couldbe disastrous:It would be irresponsible and shortsighted to introduce these chemicalsonto land or water bodies without knowing the effects they might have on lobsters.

legal Ramifications of WNv Mosquito Control

One very important aspect of WNv mosquito control operations that receives little attention in traditional risk assessment/cost benefit analysis by public agencies is the potential threat of litigation related to the broadcast

1ttp://www.meepi.org/wnv/overkillma.htm July 23, 2010 10:52:45 PM

of taxies. To date there are suits relating to personal injury of pesticide applicators, personal injury to residents, and a class action suit for destruction of the Long Island lobster fishery. Other potential areas of litigation related to toxic mosquito control are: losses to agriculture from the demise of bees and other pollinator loss of recreational and other commercial fisheries; and loss of organic certification from farms that are over sprayed. Municipalities in Massachusetts, state agencies, pesticide applicators and manufacturers need to factor into their decision-making process that they may be sued for millions of dollars if they make the decision to use toxic pesticides to control WNv mosquitoes. A number of lawsuits have been brought since pesticide spraying for WNv began in the Northeast in 1999.

A coalition of environmental groups sought an emergency order to halt the spraying of Anvil, a pesticide that had already been used in Central Park, across Staten Island and in parts of Queens and Brooklyn, in areas where WNv was found in birds and mosquitoes. The environmentalists, represented by the Pace Environmental Litigation Clinic at the Pace University School of Law in White Plains, filed a lawsuit contending that the spraying campaign violated environmental laws (No Spray Coalition Inc. v. New York City, S.D.N.Y., No. 00-5395, 9/25/00).[88]

Five workers who sprayed pesticides for a city contractor last summer to kill mosquitoes carrying WNv have filed a complaint with the Occupational Safety and Health Administration, contending that improper training and prolonged exposure to the chemicals made them sick. In an affidavit, the men detailed how they were repeatedly saturated with the pesticide Anvil during their nightly spraying shifts, while driving or riding without protective clothing on the backs of trucks. The former sprayers and truck drivers also said they handled and loaded pesticides without training or supervision, contrary to state and federal regulations. In sworn affidavits and interviews with the *New York Daily News,* the men said they've been plagued by ailments including fatigue, severe headaches, difficulty breathing, loss of hair, nausea and even sexual dysfunction. The New York Environmental Law and Justice Project, is representing them in making the claim.[87]

Kent Smith was assigned to one of the company's three aiHerrain vehicles and sen(to spray Yankee and Shea stadiums and various golf courses and cemeteries. He sometimes worked 16 hours a day, and his skin was constantly drenched with the pesticide, he said. "They only had two respirators in the whole place and wanted us to share them," he said. "I r fused and forced them to get me my own respirator. There wasn't even a place to wash up after you finished spraying. Just a fountain where you washed your hands," he said. While the men were paid $11 an hour, the city paid Clarke $650 an hour per truck After investigating their claims, the federal Occupational Safety and Health Administration cited the firm for five serious safety violations and fined it $6,750.[41]

In the biggest suit so far, commercial fishermen who claim the dramatic decrease in their lobster harvest was caused by pesticides used against mosquitoes to combat the West Nile virus filed a $125 million putative class action against the insecticide manufacturers in a federal district court Aug. 25, 2000 (Fox v. Cheminova Inc., E.D.N.Y., filed 8/25/00). The proposed class consists of lobstermen from New York and Connecticut operating in Long Island Sound "who sustained legally recognizable damages as a result of the contamination and death of lobsters ... caused by Defendants' negligencE! strict products liability, and other fault," according to the complaint.[107]

Safe and Effective Ways to Protect Your Family and Community from West Nile virus

tttp://www.meepi.org/wnv/overkillma.htm July 23, 2010 10:52:45 PM

When cases of WNv show up in Massachusetts, citizens will understandably want government officials to "DO SOMETHING!" to prevent them from being bitten by WNv carrying mosquitoes. A massive spraying campaign runs the risk of giving residents a false sense of security, encouraging them to think they are less likely to be bitten after the spraying, and less likely to implement non-toxic preventative measures.

Government officials, from the town to state and federal level, can make a proactive, effective,. and also non-toxic response to WNv. Imagine a van driving through neighborhoods with knowledgeable technicians getting out at every house, doing an inspection for potential mosquito breeding pools, pointing out ineffective screens, showing residents grills, toys, tires, sagging gutters, etc., in their yard that might harbor larvae. Each property could receive a 'report card' and specific instructions on what to do to correct problems. The technicians could also hand out information about WNv, list hotlines and information resources, discuss repellents, biopesticides, and talk about the relative risk that diligent residents have from WNv illness. This sort of approach would be safer, would ensure residents that officials were engaged, and would arguably be cheaper and more effective than spraying.

Community level guidelines for safe and effective mosquito control [65]

- Stop pesticide spraying conducted to control mosquito populations not because of public health threats, but for nuisance reasons. Many of the same pesticides are.used in "nuisance spraying" that are used to control WNv and have harmful effects on pubic health, ecosystems and wildlife.
- Do not use "adulticides," or pesticides meant to kill adult mosquitoes.
- Make sure that people in Massachusetts understand that the common **salt marsh mosquitoes do not carry West Nile virus.** (Species: *Aedes cantator* and *A. sol/icitans)*
- Focus on controlling mosquitoes in their immature forms: eggs, larvae, or pupae (see mosquito life cycle) . Stock ponds and other bodies of water with mosquito-eating fish, and keep waterways clean so that fish and other mosquito predators can survive. In some cases, it is appropriate to use bacteriallarvi.cides or mechanical controls such as vegetable-based oils that smother mosquito eggs floating on the surface of the water (see larvicide section).[25] Mechanical control of adults may be an option as well Traps exist that may attract and kill mosquitoes over areas of up to an acre. The Mosquito Magnet mimics a large mammal by emitting a plume of carbon dioxide heat and moisture. [25]
- On a municipal or county level, set up a system for citizens to report standing water near their homes.[26]
- Establish monitoring programs to pinpoint where mosquito-borne diseases are occurring. Monitoring can rely both on trapping mosquitoes and on "sentinel birds," such as chickens, tested regularly for signs of infection.[25]
- Continuously evaluate the effectiveness of all mosquito control measures.
- Make sure the public knows what people can do at home to minimize mosquito exposure and eliminate breeding sites. Public health education is a good investment of resources and will pay off better than quick-fix expenditures on chemical sprays.

Some characteristics of *Culex* mosquitoes: a WNv t:arrier [17]

- *Culex* mosquitoes bite primarily in the hours between sunset (dusk), evening, and until the early morning (dawn). They are not highly active during full daylight.
- *Culex* breed in stagnant, standing fresh water. One of the most concentrated sites found with *Culex* · were sewage treatment plants.
- *Culex* hide in tall grass and brush near inhabited locations, such as homes and other buildings They are not the mosquitoes most often found in areas like the beach or salt marshes.

- *Culex* bite birds and other warm-blooded animals as well as humans as do many other types of mosquitoes. The primary host forWNv is birds. Mosquitoes spread the virus frcimbirds to humans.
- *Culex* are a mosquito of modest sizethat produce a bite less severe than other, better-known mosquitoes such as the salt marsh mosquito.

ttp://www.meepi.org/wnv/overkillma.htm July 23, 2010 10:52:45 PM

• *Culex* do not tend to fly long distances (less than 1/2 mile) from their home base so keeping breeding down near your house will provide direct benefits.

Steps you can take around the house [114,65]

- Get rid of any unnecessary items on your property that can hold stagnant water, such as old tires. If you use old tires for farming or gardening, drill holes in them and empty them regularly.
- Empty water from buckets, toys, and containers, and store them in places where they will not collect rain.
- Make sure your dry-docked boats' drain is open so as not to collect rainwater and/or make sure that the cover is tight and has no standing water pockets. Keep your canoes and kayaks stored upside-down.
- Drill holes in the bottoms of recycling bins and any other containers that must be kept outdoors.
- Drain the water from birdbaths, fountains, wading pools, plant pots and drip trays twice a week.
- Check for other ways water may be collecting around your house, such as puddles beneath air conditioners.
- Clean out your gutters and fix gutters that sag or do not drain completely. Check for areas of standing water on flat roofs.
- If you have a swimming pool, outdoor sauna, or hot tub, make sure rainwater does not collecbn the cover.
- Clear vegetation and trash from any drains, culverts, ponds or streams on your property so that water drains properly.
- Keep grass cut short and trim shrubs to minimize hiding places for adult mosquitoes.
- Eliminate standing water in your basement.
- To minimize the likelihood of being bitten inside your house, make sure window and door screens fit properly and replace outdoor lights with yellow "bug lights."
- To avoid being bitten outdoors, wear hats, long sleeves and long pants in the evenings, when mosquitoes are most active.

Insect repellents

Do not use DEET, especially on children! The U.S. Environmental Protection Agency (EPA) acknowledges fourteen cases in which individuals reported seizures associated with exposure to DEET. Twelve were children, three of whom died.[116]

DEET can also interact with other chemicals to produce severe toxic effects on the nervous system, and may have played a role in Gulf War Syndrome. Based on existing information about DEET's health effects, EPA determined in September 1998 that the labels on some DEET-containing products were misleading. Under EPA's new requirements, it is illegal to label DEEr-containing products as designed for children or "safe for kids." However, EPA chose to allow a grace period of more than four years during which products with old labels can be sold,[116] so stores can still sell products with misleading safety claims. Treat clothing, rather than skin, whenever possible, and wash off repellents with soap and water after returning indoors.[Ob]

Bite BlockerTM

Bite BlockerTM is a plant-based repellent that was released in the United States in 1997. Bite Blocker combines soybean oil, geranium oil, and coconut oil in a formulation that has been available in Europe for several years. Studies conducted at the University of Guelph, Ontario, Canada, showed that this product gave more than 97% protection against Aedes mosquitoes under field conditions, even 3.5 hours after application . . .

1ttp://www.meepi.org/wnv/overkillma.htm July 23, 2010 10:52:45 PM

During the same period, a 6.65% DEET-based spray afforded 86% protection, and AvonSkin-So-SoftTM citronella-based repellent gave only 40% protection. It is available from Gardens Alive, 5100 Schenley Place, Lawrenceburg, IN 47025.[32,35]

Citronella repellents and candles are non-toxic and fairly effective

Studies show that citronella can be an effective repellenbut it providesshorter complete protection time than most DEET-based products. Frequent reapplicationof the repellent can partially compensate for this.[32]

Canadian researchers studied, under field conditions, the efficacy of three citronella-based products (lotion, milk and sun block formulations (active ingredients: 10% oil of citronella and 5% terpene of citronella) to protect against biting mosquitoes. All of the repellents "reduced the number of mosquitoes bitingby 95% over the 1st and 2nd 30 minutes after application."[57]

The same group of researchers assessed the efficacy of 3% citronellacandles and 5% citronella incense in protecting against mosquito bites under field conditions. "Although significantly fewer bites were received by subjects at positions with citronella candles and incense than at nontreated locations, the overall reduction in bites provided by the citronella candles and incense was only 42.3% and 24.2%, respectively."[58]

The manufacturer of Natrapelcitronella-based insect repellent (Tender Corp., Littleton, New Hampshire) has laboratory data showing that their 10% lotion reduced mosquito bites by 84% duringa 4-minute test period.[105]

Avon Skin-So-Soft TM

This bath oil is more often mentioned for use as an 'unofficial' black fly repellent, imd received considerable national media attention several years ago when it was reported to be effective as a mosquito repellent When tested under laboratory conditions against Aedes *aegypti* mosquitoes, this product wasshown to be only mildly effective witha half-life of 30 minutes.[103]

Electronic repellents don't work

The CDC and several other sources report that Vitamin Band "ultrasonic" devices are NOT effective in preventing mosquito bites.

Appendix

Questions and Answers

Overview of West Nile virus

Q. Where did West Nile virus come from?

A. West Nile virus has been commonly found inhumans and birds and other vertebrates in Africa, Eastern Europe, West Asia, and the Middle East, but until1999 had not previously been documented in the Western Hemisphere. It is not known frorn where the U.S. virus originated, but it is most closely related genetically to strains found in the Middle East.

Q. How long has West Nile virus beenin the U.S.?

:tp://www.meepi.org/wnv/overkillma.htm July 23, 2010 10:52:45 PM

A. Itis not known how long it has been in the U.S., but scientists believe the virus has probably been in the eastern U.S. since the early surnrnerof 1999, possibly longer.

Q. How many cases of West Nile encephalitis in humanshave occurred in the U.S.?

A. In 1999,62 cases of severe diseasEj including 7 deaths, occurred inthe New York area. In 2000, 17 cases had been reported through September, including 1 death. No reliable estimates are available for the number of cases of West Nile encephalitis that occur worldwide.

Q. I understandWest Nile virus was foundin "overwintering" mosquitoes in the New York City area in early 2000. What doesthis mean?

A. One of the speciesof mosquitoes found to carry West Nile virus is the *Culex* species, which survive thro4gh the winter, or "overwinter," in the adult stage. That the virus survived alongwith the mosquitoes was documented by the widespread transmission during the summer of 2000.

Q. Do the findings indicate that West Nile virus is established in the Western Hemisphere?

A. It is too early to speculate about the permanent establishment of West Nilevirus. Continued surveillance will assist in answering this question.

Q. Is the disease seasonalin its occurrence?

A. In the temperatezone of the world (i.e., betweenlatitudes 23.5i and 66.5i north and south), West Nile encephalitis cases occur primarily in the late summer or early fall. In the southern climates where temperatures are milder, West Nile virus can be transmitted year round.

Q. What is West Nile encephalitis?

A. "Encephalitis" means an inflammation of the brain and can be caused by viruses and bacteria, including viruses transmitted by mosquitoes. West Nile encephalitis is an infection of the brain caused by West Nile virus, a flavivirus (a type of virus usually transmitted by arthropods) commonly .found inAfrica, West Asia, and the Middle East. It is closely related to St. Louisencephalitis virus found in the United States.

Transmission of West Nile virus

Q. How do people. get West Nile encephalitis?

A. By the bite of mosquitoes infected withWest Nile virus. See diagram of *Culex* life cycle.

Q. What is thebasic transmission cycle?

A. Mosquitoes become infected when they feed on infected birds, whichmay circulate the virus intheir blood for a few days. Infected mosquitoes can then transmit West Nile virus to humans and animals while biting to take blood. The virus is located inthe mosquito's salivary glands. During blood feeding, the virus may be injected into the animalor human, where it may multiply, possibly causing illness.

Q. If I live in an area where birds or mosquitoes withWest Nile virus have been reported and a mosquito bites me, am I likelyto get sick?

tttp://www.meepi.org/wnv/overkillma.htm July 23,2010 10:52:45 PM

A. No. Even in areas where mosquitoes do carry the virus, very few mosquitoes--much lessthan 1%--are infected. If the mosquito is infected, lessthan 1% of people who get bitten and become infected willget severely ill. The chances you will become severely ill from one mosquito bite are extremely small

Q. Can you get West Nile encephalitis from another person?

A. No. West Nile encephalitis is NOT transmitted from person-to-person. For examplE\ you cannot get West Nile virus from touching or kissing a person who has the disease, or from a health care worker whohas treated someone with the disease.

Q. Is a woman's pregnancyat risk if she gets West Nile encephalitis?

A. There is no documented evidence that a pregnancy is at risk due to infection withWest Nile virus.

Q. Besides mosquitoes, can *you* get West Nile virus directlyfrom other insects or ticks?

A. Infected mosquitoes are the primary source forWest Nile virus. Although ticks infected with West Nile virus have been found in Asia and Africa, their role in the transmission and maintenance of the virus is uncertain, However, there is no information to suggest thatticks played any role in the cases identified in the United States.

Q. How many types of animalshave been found to be infected with West !llile virus?

A. Although the vast majority of infections have been identifiedin birds, through September 2000 CDC has received reports of WN virus infection in horses, cats, bats, chipmunk& skunks, squirrels, domestic rabbits, and raccoons.

Q. Can you get West Nile virus directly from birds?

A. There is no evidence that a person can get the virus fromhandling live or dead infected birds. However, persons should avoid barehanded contact when handling any dead animals and use gloves or doubleplastic bags to place the carcass in a garbage can.

Q. Can I get infected withWest Nile virus by caring for an infected horse?

A. West Nile virus is transmitted by infectious mosquitoes. There is no documented.evidence of person-to- person or animal-to-person transmission of West Nilevirus. Normal veterinary .infection control precautions should be followed when caring for a horse suspected to have this or any viralinfection.

Q. How does West Nile virus actually cause severe illness and death in humans?

A. Following transmission by an infected mosquito, West Nile virus multiplies in the person's blood systemand crosses the blood-brain barrier to reach the brain. The virus interfereswith normal central nervous system functioning and causes inflammation of brain tissue.

Q. What proportion of people withsevere illness due to West Nile virus die?

A. Among those with severe illness due to West Nile virus, case-fatality rates range from 3% to 15% and are highest among the elderly. Less than 1% of those infected withWest Nile virus will develop severe illness. See risk section.

Q. If a person contracts West Nile virus, doesthat person develop a natural immunity to future infection by the virus?

A. It is assumed that immunity will be lifelong; however, it may wane in later years. Q.Is

there a vaccine availablefor WNv?

A. No. Currently there is no vaccine for West Nile Virus. Peptide Therapeutics Group announced in August of 2000 that it had been awarded a Fast-Track Small Business Innovative Research grant by the US National Institutes of Health to develop a new vaccine to prevent West Nile virus disease. Dr. Thomas Monath, Vice President Research & Medical Affairs of Peptide, said: "The advantages of ChimeriVax vaccines include their high safety profile, ability to induce protection within a few days after a single dose, and long-lasting immunity without the need for booster doses. A ChimeriVax West Nile vaccine is therefore ideally suited for use in an impending epidemic, where rapid immunization is required."[86] tt is not known how long it will take to develop a vaccine.

Q.Is there a treatmentfor WNv?

A. Currently, there's no treatment that will cure the disease. Doctors may recommend remedies to cope with the symptoms of mild cases. Severe cases of West Nile virus may require hospitalization, and treatment may include: Intravenous (IV) fluids; Respiratory support (help with breathing); Precautions to prevent other infections, such as urinary tract infections and pneumonia.[120] There may soon be a newtreatment for WNv. Doctors at New York Hospital Queens will be testing the drug lntron-A this summer on patients diagnosed with the disease. "Intron-A is a cloned version of interferon, which is a protein in our body that fights viruses and stimulates the immune system," explains Dr. James Rahal, director of the Infectious DiseaseSection of New York Hospital Queens. lntron-A is already used to treat Hepatitis C, a virus in the same classas West Nile. Lab tests have shown that the drug is effective inwiping out the virus. But not everyone withWest Nile will get

lntron-A. "We're only going to use it on people who have developed encephalitis," says Rahal. [5] 5

Symptoms of West Nile virus

Q.Who is at risk for getting West Nile encephalitis?

A. All residents of areas where virus activity has been identifiedare at some risk of getting West Nile encephalitis; persons older than 50 years or withcompromised immune systems have the highest risk of severe disease. See in depth discussion of risk factors.

Q.What are the symptoms of West Nile encephalitis?

A. Most infections are mild, and symptoms include fever, headache, and body aches, occasionally with skin rash and swollen lymph glands. More severe infection may be marked by headachEhigh fever, neck stiffness, stupor, disorientation, coma, tremors, convulsions, muscle weakness, paralysis, and, rarely, death.

Q. What is the incubation period in humans(i.e.,time from infection to onset of disease symptoms) for West Nile encephalitis? A.

Usually 3 to 15 days.

Testing and Treating West Nile Encephalitis in Humans

Jttp://www.meepi.org/wnv/overkillma.htm July 23,2010 10:52:45 PM

Q. I think I have symptoms of West Nile virus. What should I do?

A. Contact your health care provider if you have concerns about your health. If you or your family members develop symptoms such as high fever, confusion, muscle weakness, and severe headaches, you should see your doctor immediately.

Q. I am a health care provider in Massachusetts and suspect a case of WNv. What should I do?

A. Suspect WNv cases are reportable to the Massachusetts Department of Public Health's Division of Epidemiology and Immunization at 617-983-6800.

Q. How do health care providers test for West Nile virus?

A. Your physician will first take a medical history to assess your risk for West NUe virus. People who live in or travel to areas where West Nile virus activity has been identified are at risk of getting West Nile encephalitis; persons older than 50 years of age have the highest risk of severe disease If you are determined to be at high risk and have symptoms of West NUe encephalitis, your provider will draw a blood sample and send it to a commercial or public health laboratory for confirmation.

West Nile virus and Birds

Q. Do birds infected with West Nile virus die or become ill?

A. In the 1999 New York area epidemic, there was a large die-off of American crows. Through September 2000, West Nile virus has been identified in at least 70 species of birds found dead in the United States. Most of these birds were identified through reporting of dead birds by the public

Q. How can I report a sighting of a dead bird(s) in my area?

A. Contact the Massachusetts Bureau of Health at 617-624-6000 or contact the WNv hotline at 866-627-7968.

West Nile virus and Dogs and Cats

Q. Can West Nile virus cause illness in dogs or cats?

A. There is a published report of West Nile virus isolated from a dog in southern Africa (Botswana) in 1982. West Nile virus has been isolated from several dead cats in 1999 and 2000. A serosurvey of dogs and cats in the epidemic area showed a low infection rate.

Q. Can infected dogs or cats be carriers (i.e., reservoirs) for West Nile virus anc transmit the virus to humans?

A. West Nile virus is transmitted by infectious mosquitoes. There is no documented evidence of person-to- person, animal-to-animal, or anima to-person transmission of West NUevitus. Veterinarians should take normal infection control precautions when caring for an animal suspected to have this or any viral infection,

Q. Can a dog or cat infected with West Nile virus infect other dogs or cats?

A. No. There is no documented evidence that West Nile virus is transmitted frorn animal to animal.

http://www.meepi.org/wnv/overkillma.htm July 23, 2010 10:52:45 PM

Q. Should a dog or cat infected with West Nile virus be destroyed? What is the treatment for an animal infected with West Nile virus?

A. No. There is no reason to destroy an animal just because it has been infected with West Nile virus. Full recovery from the infection is likely. Treatment would be supportive and consistent with standard veterinary practices for animals infected with a viral agent.

Prevention of West Nile virus and pesticide injury

Q. What can I do if aerial or truck spraying of pesticides occurs near my house? [17]

1. Keep windows closed during and immediately after spraying. If possible, also turn off window air conditioners.

2. Stay inside and keep children and pets inside during spraying and until the next morning after spraying.

3. Bring in or cover portable outdoor furniture, toys, laundry; pet dishes and tools.

4. Cover larger outdoor items such as barbecue grills or sand boxes. Swing sets and items that cannot be covered should be rinsed thoroughly after the spraying.

5. Cover ornamental fish ponds because pesticides are highly toxic to fish.

6. Cover vegetable gardens if you can with plastic sheeting; wash any exposed vegetables before storing, cooking or eating.

7. Remove shoes when entering the home after spraying because pesticides can be tracked indoors and remain toxic for months in synthetic carpet fibers. Pesticides used for mosquitoes are most easily degraded in direct sunlight and are sheltered when inside where they do not degrade quickly.

8. Hose off window screens, door handles and hand railings after spraying occurs to avoid direct contact.

9. If you suffer symptoms such as dizziness, headache, nausea, vomiting, weakness, blurred vision, breathing difficulties, or irritation of the eyes, nose, lipl! mouth or throat see your doctor immediately.

References, Bibliography, Notes

http://www.meepi.org/wnv/overkillma.htm • July 23, 2010 10:52;45 PM

Myths About West Nile Virus and Pesticides

Information compiled by Pesticide Alternatives- www.FIGHTTHEFLIGHT.com

Myth #1: The pesticide Pyrenone 25-5 is "safe".

Fact: It is against federal law for pesticide applicators to claim that a pesticide is "safe". Pyrenone 25-5 consists of 5% pyrethrins, 25% piperonyl butoxide (PBO), 70% unknown. PBO is listed by the EPA as a Group C Carcinogen. The remaining 70% are only listed as "other ingredients";

Myth #2: West Nile Virus (WNV) is an "epidemic".

Fact: There is no human epidemic of West Nile Virus. The numbers are clear:
Total human deaths in all of California in 2005 from WNV - 6 (Statistics provided by state of CA. as of 8/23/05)
Total human deaths in all of California in 2004 from WNV - 28
Human deaths from Influenza in California in a given year - Over 8,000

Myth #3: Spraying pesticides will prevent WNV infections and save lives.

Fact: There is no evidence that shows that the spraying of pesticides in any way impacts the number of WNV infections. In fact, it may increase your risk of contracting West Nile Virus:

- Pesticides suppress the immune system, making it harder to fight off WNV infection
- Pesticides also kill the natural mosquito predators, who have a much longer recovery period
- Mosquitoes quickly evolve becoming immune to the pesticide (as what happened with Malathion)
- Mosquitoes sprayed with pesticide become more aggressive and bite more before they die
- Pesticide spraying gives the public a false sense of security and decrease participation in methods that do work

"ID. general WNV is a mild disease. It only becomes serious encephalitis if the virus can cross the blood-brain barrier. Among the agents that impair the blood-brain barrier in young rats are pyrethroid, organophosphate, and organochlorine pesticides. Thus, insecticide spraying has the potential to worsen the process of WNV infection." *-Dr. Dennis Goode, Department of Biology, University of Maryland*

Myth #4: Those who oppose pesticide spraying care more about their organic gardens than human lives.

Fact: Every death is a tragedy. Those who are working to stop the spraying of pesticides come from all walks of life and include: doctors, scientists, lawyers, professionals, teachers, business owners, farmers, concerned parents and many more educated citizens who are concerned about the immediate (for part of the population) and cumulative (for the entire population) health risks of repeated pesticide exposure.

Myth #5: One round of spraying will solve the problem (of WNV).

Fact: Each round of spraying only kills adult mosquitoes at an average efficacy rate Of about 40%. In 10 days or less, a new round of mosquitoes are born forcing more and more rounds Of pesticide spraying. As noted earlier, there is no evidence that spraying pesticides works to combat WNV infection rates.

FACT: There are BETTER WAYS TO CONTROL MOSQUITOES that do not expose you to pesticides. Even SYMVCD admits that these are the preferred methods:

- Property Management (Draining mosquito breeding grounds.)
- Larva Eating Fish
- Beneficial Insects (dragonflies, damselflies, etc.)

- Natural Larvicides

- Bats, Toads, Birds, Lizards
  (and other natural mosquito predators)

For more information/sources for our statements, please visit us at:
www.FightTheFlight.com

STOP the West Nile Virus Fogging

The SCCVCD has announced intentions to spray potentially deadly pesticides on San Jose and Campbell residents, their pets, and their property, to protect them from a virtually non-existent threat, the West Nile Virus (WNV).

The ground fogging is scheduled for the evening of Tuesday, July 22, at 11 PM, and planned to last several hours.

Review of the FACTS:

1) There is NO significant threat to the general population from WNV! Of those infected:
   - No Symptoms in 80 percent
   - Milder Symptoms in 20 percent
   - Serious Symptoms in less than one-percent
2) There are NO human cases of WNV in California Bay area this year.
3) Pesticides are poisons.
4) Pesticides cause cancer.
5) Pesticides cause infertility (sterilization), birth defects, miscarriages, and other hormone related illnesses.
6) Pesticides kill valuable insects and natural predators to mosquitoes.

The Official State of California website on the West Nile Virus, at:
http://www.westnile.ca.gov/wnv_faqs_basics.php
admits the WNV is a significant threat to less than 1"/o of the people infected, which is ZERO in the Bay area! This is public endangerment and must be stopped!

The pesticide to be used for Tuesday, 07-22-10, is Pyrenone 25-5. The following URL is a fact sheet on this dangerous chemical.
http://www.stopwestnilesprayingnow.org/PesticideFacts.htm

This pesticide is made by Bayer Corporation, which was affiliated with I.G. Farben and produced the deadly gas Zyklon-B, used in WW2 to exterminate people in the gas chambers. http:!/en.wikipedia.org/wikillG_Farben

For FACTS on West Nile Virus go to:

http://www.meepi.org/wnv/overkill.htm
http://stopwestnilesprayingnow.org/
http://www.fattigfish.com/altmoscontrol.htm
http://www.beyondpesticides.org/mosquito/documents/Open%20Letter.pdf
http://www.stopwestnilesprayingnow.org/PesticideFacts.htm

When you study the scientific facts behind the West Nile Virus it becomes obvious that there is absolutely no legitimate rationale or justification for using these deadly biological and biochemical Weapons of Mass Destruction for the control of the noncthreatening West Nile Virus.

Any persons objecting to this unwarranted chemical assault on their person, loved ones, or property should immediately contact YOUR County Supervisor and demand not to be sprayed, BEFORE Thursday, July 22, 2010. Insist on immediate, emergency action to stop this "campaign". Remember that this spray can drift into nearby communities as well.

· County Supervisor at
70 West.Hedding St.
San Jose CA 95110
(408) 299-2323

Pesticides,NOT West Nile Virus,are the leading Cause of Bird Deaths

A New York State wildlife official has discovered that of birds collected for a study on West Nile Virus, more died from pesticide poisoning than from the virus itself.

In response to this early data, the National Audubon Socjetv is calling upon Connecticut, Delaware, Maryland, New Jersey, Pennsylvania and Virginia to begin testing dead birds for pesticide poisoning, if they have not already, and to publicly release their ffncffngs.

Last year,prompted by concern about the spread of West .Nile Virus, New York State asked counties to. report dead birds to its wildlife pathology laboratory. After receivingmore. than 80,00Q birds, Dr. Ward Stone discovered that while the virus was a factor in some·0f·!he-deaths,·the·leading cause was pesticide poisoning.

Common rawn care chemicals were among the most common toxins.

"MiHions of us use pesticides like Diaznon and Durs.ban at home," Said Frank G.ill, Audubon's Senior Vice P.resideRt of Science. "We deserve to know as much as possible about their effect on us. Like canaries in a coatmine, birds warn of danger in our environment. ·If these--chemicals kill.bir$,what are they doing to our kids?"

In adcfftion to threatening wildlife, pesticides are believed to harm humans. According to Pesticide Watch, .pesticides have been linked to a wide range of human health hazards, from short-term impacts .sudJ. as. headaches and nausea to chronic conditions like cancer,reproductive .harm, and endocrine disruption.

"State governments are responsible for protecting·the pubHc's health," said Audubon President John Flicker. "We think it's important forlhem to find out what these bird deaths mean."

Founded in 1905 and supported by 600,000 members in 510 chapters throughout the Americas, the National Audubon Society conserves and restores natural ecosystems, focusing on birds and other wildlife, and their habitats, for the benefit of humanity and the earth's biological diversity

NationalAudubon Society

Dr.Marcola's·Comment:

So many of us don't have the slightest idea of the impact of using these toxic chemicals has on the environment. Those Of you familiar with the West Nile virus in the New York area especially appreciate this information.

This is one of the first bits of information t& place the responsibility for the-deaths of.so many birds on lawn chemicats and other pesticide applications.

Related Articles:
Alternative to Using Pesticides Pesticides
Linked to Miscarriage Pesticides May
Increase Parkinson's Risk Pesticides May
Decrease Male Fertility

http:l/articles.mercola.com/sites/articles/archive/2001/07/04/pesticides-part-three.aspx

Overkill: Why Pesticide Spraying for West Nile Virus May Cause More Harm Than Good

A Report by Taxies Action Center and
Maine EnvironmentalPolicy Institute

Widespread Spraying lmpac:ts Mosquito's Natural Predators

http://www.meepi.org/wnv/overkillma.htm

Widespread spraying for mosquito control can increase mosquito populations by killing off natural predators dragonflies, fish, birds, bats am hibians was s etc. of the mosquitoes and their larvae, ere y removing natural control of mosquito population levels. The fewer mosquito predators there are, the more mosquitoes there will be. The results at Cicero swamp in NY State (discussed earlier) indicated that mosquitoes increased 15-fold when the natural predators were impacted by routine adulticiding.

Dragonflies are important predators as the adults eat adult mosquitoes and the nymphs feed on mosquito larvae and pupae. Other natural predators such as bats and birds (Purple Martins and Tree Swallows) eat adult mosquitoes and can help reduce their numbers in an area. Communities and residents have maintained bird and bat houses as another natural method of control. Goldfish serve as natural predators in ornamental water gardens and ponds, but the feeding of fish food should be limited if residents expect the fish to eat mosquito larvae. Gambusia fish are used by some jurisdictions, adding these fish to drainage holding ponds and other freshwater ponds. Guppies, sunfish and killies have also been successfully used as natural predators of mosquito larvae. By avoiding adulticide spraying, the natural predators will benefit

Dr. Sheldon Krimsky, a pesticide-risk specialist at Tufts University explains how spraying increases mosquito populations. "The pesticides kill the predators of mosquitoes, so when the mosquitoes return, as they always do, they return (and thrive) in a much more supportive environment."
http://magazine.audubon.org/incite/incite0109.htmI

VI – Conclusion

Again, the purpose in preparing this update-report is to help fill the information gap regarding non-toxic mosquito control practices, and the hazards of spraying mosquito adulticides. Both of these topics have been under-publicized by the media in reporting West Nile matters. Below, is a summary of several of the most pertinent issues from the above report.

A A number of non-toxic alternatives are available, and are being used in many jurisdictions, (including Md.) However, the public is often unaware of these alternatives.

B. When West Nile virus is found, adulticide spraying is not automatically the answer. Larviciding and other non-toxic methods are being re-emphasized in many jurisdictions when West Nile is found in birds, horses, and mosquito pools, and even when people have become infected. (For example, Washington DC)

C. When jurisdictions have avoided adulticide spraying, they are mentioning concern for the health of their sensitive groups of citizens, those with asthma, children, elderly, etc.

D. Adulticide spraying is the "least-efficient" method; prevention steps are "most-effective."

E. Adulticide spraying is toxic to the public and to the environment. It makes people sick and can result in lingering effects, long-term asthma, etc. It kills fish and crabs.

F. A study by New York State's Health Dept. found more people were made sick by the mosquito adulticide spraying than from the West Nile viru13.

G. Scientists and doctors have published their concerns about the effects mosquito adulticide spraying, including:

1. Small quantities of exposure to pesticides can cause health impacts. The argument that mosquito sprays are "ultra low" volume is a false assurance. These sprays are still making people sick, some severely sick with lingering effects.
2. The adulticide sprays can increase lfle chances of people developing encephalitis, (the more severe form of West Nile virus). The adulticides weaken people's immune systems (white blood cells, !-cells & lymphocytes), and they can weaken people's defense by damaging the brain-blood barrier.
3. The adulticide sprays can actually increase numbers of disease-carrying mosquitoes. Three effects are observed:
   - **O** Natural enemies of the mosquitoes are destroyed by the spraying, allowing more mosquitoes to reproduce.
   - **O** Surviving mosquitoes become resistant and thrive regardless of being routinely sprayed.
   - **O** More mosquitoes may carry the encephalitis when they have been weakened by the sprays.
4. All the adulticides are more toxic than the larvicides, which are basically non-toxic.

5. The aerial method of spraying adulticides produces saturation of communities, and should not be used.

http://www.meepi.org/wnv/overkillma.htm

Bats and Mosquitoes

A recent newsletter from, "The Texas Gardener Seeds" says:
Put up a bat house to encourage the presence of these shy animals.
Bats consume 3,000 or more mosquitoes and other insects nightly, and bats are less likely to be rabid than dogs are.
Need another reason?
Bats are responsible for up to 95 percent of the seed dispersal essential to the regeneration of forests.
Our planet is populated with plenty of bizarre and astonishing creatures.
Here are two from the Bat Family ..... without the need for resorting to fiction.

http://www.fourwinds10.com/siterun_data/environment/plants_and_animals/news.php?q=1285001857

Immunity growing to West Nile virus

U.S. study finds people produce antibodies from bites

By Frank D. RoylanceBaltimore Sun reporter *September 10, 2009*

As many as 3 million Americans may now be immune to the West Nile virus thanks to antibodies they produced after being infected by the bite of an infected mosquito.

And a tenth of 1 percent of the population - about 300,000 people - acquire new West Nile infections each year, most without ever experiencing any symptoms of the disease, according to a study in the current issue of the journal Emerging Infectious Diseases.

"We do not see any indication that that trend will not continue," said Thomas R. Kreil, senior director of viral vaccines at Baxter International Inc., in Vienna, Austria. Kriel is the senior author of the study in the journal, which is published by the U.S. Centers for Disease Control and Prevention.

The researchers were able to draw their conclusions without asking millions of people for costly blood samples.

Instead, they tested about 600 samples of immune globulin, a blood product derived from blood and blood plasma donated to the American Red Cross. Each sample contains antibodies acquired from an average of 10,000 donors. The product is used to treat people with immune deficiencies.

"By testing a single sample of [immune globulin] an average of the West Nile virus infection history can be obtained for thousands of blood and plasma donors," Kreil said.

And by looking at 600 samples, the researchers were able to estimate the immunity levels of millions of donors - enough to be a statistically representative sample of the entire U.S. population of 300 million.

Previous "sero-surveys" looking at West Nile antibody levels in just a few thousand individuals have found that between 2 percent and 14 percent of the populations studied had enough antibodies to confer immunity, a variation Kreil attributes to geography, and to the intensity of viral activity in those locations.

But with their broader reach through immune globulin samples, Kreil and his team concluded that about 1 percent of the U.S. population - or at least that portion of the population that donates blood - now has some level of West Nile immunity, or more than 3 million people.

The West Nile virus first arrived in the New York City area in 1999. It quickly began sickening and killing birds and people, and birds subsequently spread it south and west. It eventually became endemic across all 48 contiguous states. U.S. fatalities peaked in 2003, with 264 killed by the virus.

http://www.baltimoresun.com/health/bal-md.virus10sep10%2C0%2C7937843.story

Dr. Len Horowotz Calls West Nile Virus· Pesticide Spraying Progra_m "Madness"

NEWS RELEASE
From Elaine Zacky <pr@tetrahedron.org>
http://echtcare-yoursel£org/cn/horowitzaudiowestnilevirusllaug02.shtrol
August 6, 2002

Sandpoint, Idaho. News reports about threatened West Nile Virus (WNV) infections spreading across America have missed the much greater risks posed by chemical :wrayings. This mosquito control program is""madnes 1' •according to a leading public health authority whose proof is in a new book being donared to libraries and legislators nationwide.

Dr. Leonard G. HoroWitz, a Harvard graduate independent investigator, and author of more than thirteen books ncl11ding the national bestseller, *Emerging Viruses: AIDS & Ebola,* says spraying pesticides to combat mosquitoes "$Uspecred of carrying the West Nile Virus (WNV) has not been scientifically proven to be either safe for humans or effective against the disease. Spraying **malathion,** a s11spected human chemical carcinogen and known immune system blocker, or its alternate, AnvillO:lO, violates a basic tenant of public health practice that requires foreknowledge of the risks and proven benefits of the policy before it is implemenred, he says.

There is substantial evidence linking exposure to these airborne chemicals to cancer and genetic damage, the doctor maintains. For this reason he has urged political andp11blic health officials to stop what he calls "imprudent practices that are clearly lethal to people."

In support of his activism, the p11blisher of Dr. Horowitz's *Death in the Air* (Tetrahedron; 1-888-508-4787) has donated more than 1,000 copies to libraries and legislators. His docwnentation comes "highly recommended" in the July, 2002 issue of LIBRARY JOURNAL, the nation's leading academic library periodical.

Henry A. Wallace of the Institute for Alternative Agriculture has also voiced concern saying, "I think people, by now, would know that heavy applications of pesticide have not been the right way to go".... Spraying people with pesticide that do not want to be sprayed must be morally wrong."

Dr. Horowitz says, "This spraying policy violates ethical, moral, and scientific standards. To give people the proof and power to resist this madness, rve even lifted the copyright on the book. People should photocopy and circulate the stunning evidence at townhall meetings for the benefit of their communities and conscientious policy makers considering or debating this pesticide spraying issue."

Listen to Dr. Horowitz speak on this subject on the inrernet at this address:
www tetrahedron. orgira/westnile.ram

More information and free book applications, link to:
http·//wwwtetrahedron.org

http://educate-yourself.org/cn/horowitzaudiowestnilevirus11aug02.shtm1

Fact Sheet for Healthcare Providers: Information Related to Insecticide Use for Preventing the Spread of West Nile Virus

This fact sheet was prepared for health care providers to assist in answering questions that patients may have about mosquito control measures related to preventing the spread of West Nile Virus. Included in this fact sheet is information on the insecticide products that may be used, the likelihood of exposure to the insecticides, signs and symptoms of overt insecticide poisoning and what to do if a patient presents to your office with possible insecticide poisoning.

Background

It is possible that malathion (product name Fyfanon), naled (product name Dibrom) and permethrin (product names Aqua-reslin and Biorriist) could also be used. Malathion and naled are organophosphate insecticides. Permethrin, resmethrin and sumithrin, are pyrethroid insecticides. The pyrethroid products also contain piperonyl butoxide as a co-active ingredient. Piperonyl butoxide is added to these formulations to enhance their insecticidal activity.

Some of the larvicides that may be used are: Bacillus sphaericus (product name Vectolex) and Bacillus thuringiensis (product name Vectobac), methoprene (product name Altosid), an oily substance (product name Arosurf) and temephos (product name Abate).

Exposure potential to insecticides

The risk associated with the use of these products depends on the toxicity of the ingredients and the extent of exposure an individual has to them. The application rates for the active ingredients in the adulticide products are quite low, ranging from 0.0035 to 0.23 pounds per acre. As a result, exposure of the general public to adulticides is likely to be very low. Workers involved in the mixing and application of these products may have a somewhat greater potential for exposure.

Larvicides are applied to sites where the potential for human contact is very low (e.g., storm drains, sewage treatment plants, abandoned swimming pools etc.).

Pesticides are inherently toxic. However, if used properly, the potential for significant exposure to the mosquito adulticides or larvicides is low. Hence, the risk of health effects to the general public is also low.
Acute symptoms and health effects

Pyrethroids/Piperonyl Butoxide Insecticides

Pyrethroids, such as permethrin, resmethrin, or sumithrin, may be absorbed by inhalation, ingestion or skin penetration. They DO NOT cause cholinesterase inhibition. In cases of high exposure, signs and symptoms typical of pyrethroid poisoning may include abnormal facial sensation, dizziness, salivation, headache, fatigue, vomiting, diarrhea, and irritability to sound and touch. In more severe cases, pulmonary edema and muscle fasciculations may occur. In addition, seizures and paresthesias have been reported.

Piperonyl butoxide has limited dermal absorption on contact. Inherent acute toxicity is low. Large absorbed doses could, in theory, enhance the toxicity of some insecticides.

Organophosphate Insecticides

Malathion and naled are organophosphate insecticides that can be absorbed by inhalation, ingestion, and skin penetration. In cases of high exposure, organophosphates may cause cholinesterase inhibition. Significant cholinesterase inhibition may result in a spectrum of cholinergic symptoms. Early symptoms of overt poisoning often include headache, nausea, dizziness, miosis, sweating, salivation, lacrimation and rhinorrhea. As the condition worsens, muscle twitching, weakness, tremor, incoordination, abdominal cramps, vomiting, diarrhea, anxiety, restlessness, depression and memory loss may occur. In addition, bradycardia, bronchospasm, and bronchorrhea are possible. Loss of consciousness, incontinence, convulsions and respiratory depression indicate a life-threatening severity of poisoning.

In children with high exposure resulting in organophosphate poisoning, seizures and mental status changes including lethargy and coma are common. Presenting signs in such cases often include flaccid muscle weakness, miosis and excessive salivation.
Additional considerations

Although most people are not expected to experience any symptoms given the low anticipated levels of exposure, some individuals may be particularly sensitive to the pesticide products or their carriers, which may include petroleum solvents. Such individuals could experience shortterm effects, such as skin, eye . and mucous membrane irritation, as well as exacerbation of such conditions as asthma.

As with chemical exposures in general, pregnant women should take care to minimize exposures when possible, as the fetus may be vulnerable.

Recommendations for management

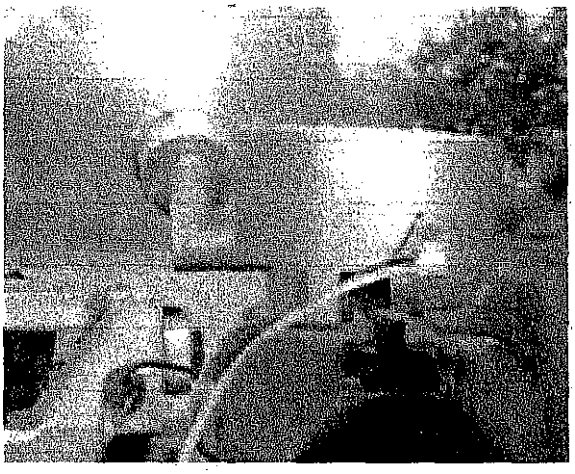
Diagnostic tests, including blood and plasma cholinesterase levels, are often used in cases of acute organophosphate poisoning, to assist with treatment and follow-up. However, it is unlikely that these tests would be necessary or useful with the anticipated levels of exposure from West Nile Virus control activities. The results of cholinesterase tests are highly variable among individuals, and isolated tests·on individuals wh suspected exposure would not indicate the extent of exposure or health effects. These tests are more meaningful when a baseline level is available for comparison, as might be the case for chronically exposed agricultural workers undergoing periodic surveillance.

For information regarding potential chronic effects of these pesticides, you may contact the New York State Department of Health at 1-800-458-1158.

For further information about West Nile virus go to the NYS DOH website at http://www.nyhealth.gov/diseases/west_nile_virus/

http://www.nyhealth.gov/publications/2741/

"Is Harris County Openly Poisoning Citizens in the Name of Mosquito Control?"



September 25, 2010 by Alex
Filed under Eugenics & Depopulation, Featured, Health & Environment, Intel Hub Featured Articles, U.S. News
5 Comments
Insecticide Sprayed Directly Into Neighborhoods
The Intel Hub
On Friday, Harris County Texas officials sprayed insecticide throughout multiple neighborhoods in order combat West Nile Virus. Sounds noble right?
The chemicals that are being sprayed directly into multiple neighborhoods are TOXIC. They damage wildlife, kill fish and are toxic to humans. Wny is this going unnoticed?
This is very similar to spraying Corexit on the population! The only difference is that government agencies aren't covering up this chemical rape as they are with dispersant spraying near the oil disaster.
Wnat is this doing to the bee population? Is there a risk of cancer? Wny has Harris County continued to spray these insecticides when near by Forth Worth hasn't sprayed in over 20 years? How do these chemicals interact with child development?
A quick search reveals that Harris County is far from the only city spraying these toxins. On September 16, Staten Island Health Department officials **sprayed** insecticide from trucks throughout the city. Delawares **spraying policy** is public record. In WASECA Minnesota, **planes** have been used to essentially hose the population in posion.
The City of Gainesville Florida stales on their website that spraying is:
Spraying is *the least effective and* most *expensive method of* ***mosquito control***
Clearly mosquito spraying is going on across America with little to no thought for the human population. Hundreds of people throughout the United States have complained about the CARELESS spraying of these toxins. Basically, Health Department officials throughout the United States have allowed mosquito spraying in areas that are clearly not in danger of a West Nile outbreak.
In 2008, Nashville **residents** demanded the city stop spraying and eventually their demands were taken to heart. The city of Nashville eliminated the use of insecticides inside population zones. This is just one example of residents standing up for themselves and taking action in their local community. Residents in Harris County continue to worry about the dwindling bee population and the spraying of poison directly in their neighborhoods.

http://theintelhub.com/2010/09/25/is-harris-county-openly-poisoning-citizens-in-the-name-of-mosquito-control/

JOURNAL OF PESTICIDE REFORM/WINTER 2001 • VOL. 21, NO.4

e SKILLS

ABCs OF TOXICOLOGY: BASIC DEFINITIONS

The world of toxicology can be mind-boggling. Many of us have been in situations in which we've gathered together information about chemicals and their health effects, only to find that we don't know how to decipher it. Whether the information comes from journal atticles, government documents, or newspapers, radio and TV, we can't figure out what it all means.

This article provides a brief introduction to basic toxicology terms. We hope this infot:mation will help you make sense of what you read and what you hear. Tt focuses on pesticides r.: .ther than all chemical and physical agents, and on humans as opposed to other living organisms.

What is Toxicology?

Toxicology is often defined as "the study of the nature and mechanism of toxic effects of substances on living organisms and other biologic systems."[1] In simpler words, "Toxicology is the study of the adverse effects of chemical and physical agents on living *ot*ganisms."[2]

Frequency and Duration of Exposure

Frequency of exposure refers to the number of times a person is exposed and the time between exposures. Duration of exposure can be· acute, subchronic, or chronic. Acute exposure is once or twice in a short period of time, such as a week or less. Chronic exposure is long-term or lifetime exposure and spans at least 10 percent of a lifetime. For humans, this is considered seven or more years. Subchronic exposure is somewhere in between acute and chronic, and it extends from more than a week to less than 7 years.[1,3]

Routes of Exposure

For humans, there are three primary routes of exposure: inhalation (by breathing); oral (by eating or drinking); and dermal (through the skin).[2,4]

Inhalation exposure can be acute, for example breathing a chemical during short-term use, or chronic, for example longer-term inhalation of chemicals in an indoor environment.[5]

Oral exposure can be direct (eating or drinking) or indirect such as from hand to mouth contact after touching a chemical. It can also be either acute or chronic,,

Dermal exposure is usually short-term from splashing or spilling the chemical during use or from contact with treated surfaces. It can result in damage to the skin or absorption through the skin into the body. Dermal exposure can also be chronic if it occurs repeatedly over a long period of time.[5]

A minor route of exposure is ocular (through the eye).[1] Ocular exposure is also usually short term and results from splashing or spilling the chemical during use or from rubbing the eye with contaminated hands aftet· touching treated surfaces.:;

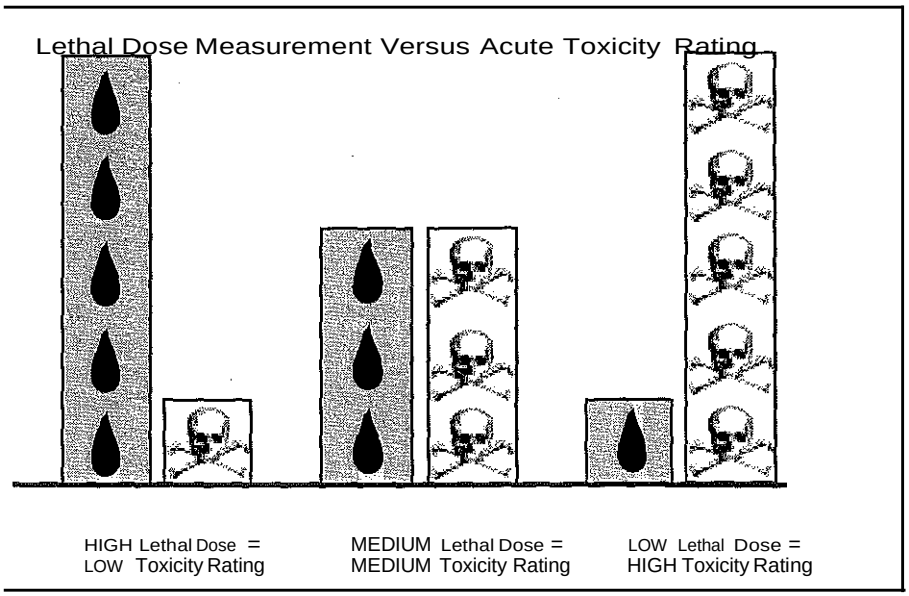
Health Effects

Commonly studied health effects from chemical exposure include the ability to cause cancer (carcinogenicity), effects on organs, reproductive effects, and developmental effects. Lung cancer, skin cancer, leukemia, breast cancer, and prostate cancer have all been associated with chemical exposure. Reproductive effects involve a decrease or loss of fertility. Developmental effects are those that lead to death of the fetus (fetotoxicity) or those that cause birth defects (teratogenicity). Organs often targeted by chemicals include the liver, kidneys, and nervous system.[6]

Other important health effects include impairment of the immune system, genetic damage (mutagenicity), and inhibition of the body's ability to break down chemicals_?

Toxicity Measurements

The dose is the amount of exposure to a potentially toxic agent and is



A high lethal dose means low acute toxicity, and a low lethal dose means high acute toxicity.

1111

Megan Kemple is NCAP's public education coordinator.

22

NORTHWEST COALITION FOR ALTERNATIVES TO PESTICIDES/NCAP
P.O. BOX 1393, EUGENE, OREGON 97440 / (541)344-5044

JOURNAL OF PESTICIDE REFORM/WINTER 2001 • VOL 21, NO." 4

usually measured in milligrams per kilogram (mg/kg), or mg per liter (mgll) where mg is the amount of chemical present, kg refers to the weight of the person or animal exposed and 1 is a liter of air.5 The toxicity of chemicals is often measured using what is called an LD_{50} (lethal dose) or an LG_{50} (lethal concentration). The LDso and the $LC'5_0$ refer to the dose that produces death in half of the test animals[2] (usually rats and mice). A high LD_{50} or $LC'5_0$ implies a lower toxicity because n:iore of the chemical is required to result in death. A low $LD'i_0$ or LC.0;0 implies a higher toxicity; just a small amount of the chemical results in death Ot 50 percent of the populatiori being tested.[2] Both the LD_{50} and LC_{50} measure acute effects, and therefOre provide no information about a chemiCal's connection to chronic (long-term) health effects. Another problem with using $LD'5_0$s or LC_{50}s as a measure of toxicity is that when researchers calculate them they usually do so based on exposure to only one chemical, yet "in the real world we are not exposed to only one chemical at a time."[2]

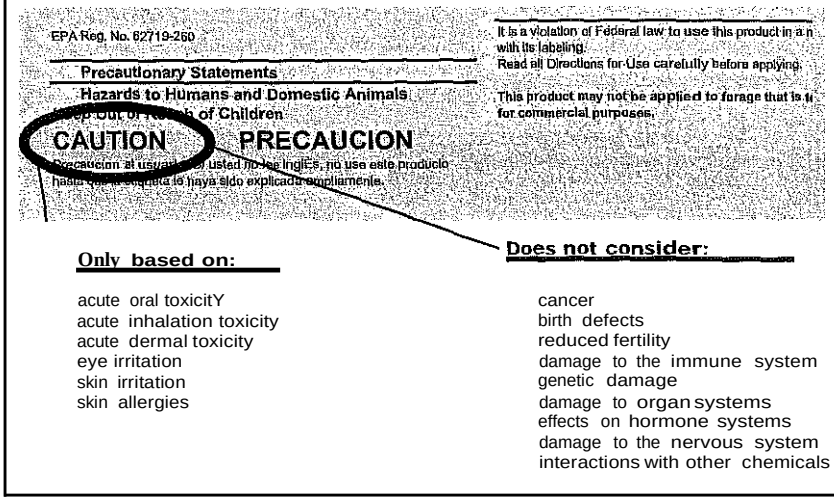
The Environmental Protection Agency (EPA) requires that pesticide products be labeled with a signal word (danger, warning or caution). The signal words refer to toxicity categories established by the EPA. There are 4 categories, with I (danger) being the most toxic and TTl or TV (caution) being the least toxic. EPA assigns pesticide products' toxicity categories based on five acute toxicity tests.[8] Like the LD":i$_0$ or LC'JO' they do not provide information about many other effects which are associated with exposure to pesticide products. (See "Signal Words on Pesticide Labels Are Based on Lilnited Information," this page.)

Metabolism and Distribution

Metabolism refers to how the body breaks down a chemical, what the chemical turns into in the body, and how fast the chemical is proces,.,ed. In people, the primaty organ for breaking down chemicals is the liver.

Distribution describes where the chemical accumulates in the body. 1f a chemical is water-soluble it will be distributed throughout the hody, as our bodies are largely made of water. If it is fat-soluble it may accumulate in body fat. Chemicals can also accumulate in bones or other organs.[3]

Signal Words (Danger, Warning, Caution) on Pesticide Labels Are Based on Limited Information



The signal word on a pesticide label is based only on acute toxicity tests.

Variability and Susceptibility

How the body responds to exposure to chemical exposure depends a great deal on the individual. Certain populations of people are generally more sensitive, including the young and the old and those with compromised immune systems or livers. Males and females may respond differently to chemical exposures and are at risk for different health effects. Some people are more susceptible to chemical exposure and more likely to suffer health effects because of their genetic make-up.[2] People with previous chemical exposure may he more sensitive to exposure to the same chemical or other chemicals in the future."i

Summary

The adverse effects of a chemical depend on its toxicity, how people are exposed to the chemical, and each person's individual .susceptibility. Exposure to chemical agents can lead to a wide range of health effects which may be expressed immediately or take years to develop. The toxicity ratings on pesticide labels are limited in that they refer only to acute toxicity.

Scientific journals, government documents, and the media all provide information about specific health effects associated with exposure to pesticides. A basic understanding of toxicology terms will help you understand these materials and use them to help reduce pesticide use in your community. Need more details? NCAP can help. Call or e-mail us!

-Megan Kemple

References

1. Lu, F.c. 1996. *Basic toxicology: Fundamentals, target organs, and risk* assessment. Washington, D.C.: Taylor & Francis., p, 3.
2. Gilbert, S.G. 2001. An introduction to toxicology. A lecture given at "A Small Dose of Toxicology: How Chemicals Affect Your Health,n a conference sponsored by the Northwest Center for Occupational Safety and Health, University of Washington, Oct. 17.
3. Stelljes, M.E. 2000. *Toxicology for non-toxicologists.* Rockville, MD: Government Institutes. p. 28-29.
4. Ref. # 3, **p.** 25-27.
5. Dickey, P. 2001. Toxicity of common household products. A lecture given at "A Small Dose of Toxicology: How Chemicals Affect Your Health," a conference sponsored by the Northwest Center for Occupational Safety and Health, University of Washington, Oct. 17.
6. Ref.# 3, p. 39-51.
1. Ponce, R. 2001. How chemicals attack cells. A lecture given at "A Small Dose of Toxicology: How Chemicals Affect Your Health," a conference sponsored by the Northwest Center for Occupational Safety and Health, University of Washington, Oct. 17.
8. 40 *Code of Federal Regulations* 156.10(h)-(i).

P.O. BOX 1393, EUGENE, OREGON 97440 / (541)344-5044

JOURNAL OF PESTICIDE REFORM/ SPRING 2002 • VOL. 22, NO.1

8 SKILLS

ABCs OF TOXICOWGY, PART 2: DOSE AND RESPONSE

It might seem unlikely that a 16th century physician and alchemist who made his reputation by publicly burning classical medical books could be at the tOundation of our pesticide regulatory system, but many pesticide activists have heard his writing repeatedly quoted by those who seek to minimize pesticide hazards.

This article will explain what connects this scholar from 500 years ago to current pestit:ide use, and how pesticide activists can best respond to the arguments from pesticide proponents based on his ideas.

§: :2J

Paracelsus

Paracelsus was born in Switzerland in 1493. Among his many accomplishments, he wrote the best clinical description of syphilis (of his day); understood that miners' silicosis was caused by breathing in minerals and was not a punishment for sins; and refused to accept the value of the pi1ls and salves used as medicine at that time.' He also wrote, "All things are poison and nothing is without poison. Solely the dose determines that a thing is not a poison."[2] Now called the dose-response relationship, that concept has become the principle "on which the science of toxicology is based."[3]

Caroline Cox is JPR's editor.

What Is a Dose-Response Relationship?

A dose-response relationship "defines the potency of a chemical."[4] In other words, it describes how a chemical's effects (on people, laboratory animals, wildlife, etc.) chahge as exposure to the chemical increases. Although Paracelsus did not specify any quantitative details in his often-quoted sentences, the dose-response curve that is used in standard pesticide risk assessments (except for some cancer-causing pesticides)s has two important features. (See Figure 1.) First, it has a threshold. Below this threshold dose, no response can be measured.s Second, the response increases with increasing dose until it reaches maximum effects and then doesn't increase any more.[3]

How Does Pesticide Regulation Depend on Dose. Response Relationships?

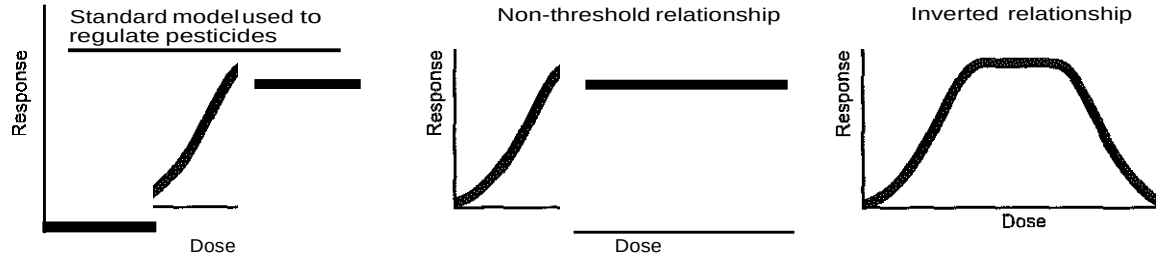
Pesticide regulation today assumes that almost all pesticides fit the rela--tionship described above. In particular, the U.S. Environmental Protection Agency (EPA) and the other agencies and institutions that conduct pesticide risk assessments in general assume that they can identify a threshold dose or exposure. Exposures below this threshold are "safe," and do not cause pi"Oblems. The setting of acceptable contamination levels on food (tolerances) as well as decisions about registering particulat uses of a pesticide are made using this threshold concept.[6,7]

What's Changed Since Paracelsus?

Modern toxicology has shown that the standard pesticide dose-response relationship doesn't represent the complexities of interactions with toxic chemicals. Pesticide regulation hasn't kept up with these changes, but they're important! Recent significant advances include the following concepts:

Allergies: The shape of a dose-response relationship for allergic re-

Figure 1
Dose-Response Relationships



Sources: Ref.# 3, 4, and 13.

22

NORTHWEST COALITION FOR ALTERNATIVES TO PESTICIDES/NCAP
P.O. BOX 1393, EUGENE, OREGON 97440 / (541)344-5044

sponses can be cq,mpletely different from the standard curve.-People who are allergic to a particular substance can have a significant reaction to even a tiny exposure. Allergies to pesti ides have not been well studied, but a survey in California indicates that they seem to be surprisingly common. California's DePartment of Health Services found that almost 16 percent of Californians reported that they were "allergic or unusually sensitive to everyday chemicals."[8]

Special susceptibility of children: The standard pesticide dose-response curve fails to recognize "the exquisite sensitivity"[9] of fetuses, babies, and childreQ.. Th ir organ systems are developing and their exposure to chemicalsfor their size, can be higher than adults.[8] For example, a new study fiom the Children's Cancer Group links children's brain cancers with exposure to pesticides before birth or during -childhood.[10] This is a j'response" that would be entirely missing from the standard dose-response relationship based on testing of adult laboratory animals. In 1996, Congress authorized EPA to use "an additional tenfold margin of safety"[11] to protect children, but otherwise left intact the use of the ·standard dose-response relationship.

Individual ability to detoxify pesticides: Every person is different, but the use of standard dose-response relationships omits these individual differences. For ·example, a study of workers at a Bayer AG facility who handled insecticides found that in certain individuals detoxification occurred slowly. These individuals more often showed signs of pesticide poiSoning than individuals whose bodies were able to quickly remove the pesticide. For some of the pesticides studied, about half of the workers studied had slow detoxification abilities.[12]

Response relationships without a threshold: Not all dose-response relationships have thresho1ds.[4] This means that there is not a dose that is too low to exert adverse effects.[13] For example, a U.S. Food and Drug Administration study of hormone disrup-

"By insisting that only an old and simplistic dose-response relationship can be relevant to pesticides, pesticide proponents are hiding from modern to icology."

tested of the hormone estradiol changed the sex ratio. The lowest dose was·minuscule, 400 trillionths of a gram per egg. The scientists who coriducted the· study concluded that similar nonthreshold dose-respone relationships will be "frequently encountered."[13] Another example is the insecticide chlorpyrifos; scientists from Duke University have found developmental effects at low doses that cause "no overt signs of toxicity."H

Inverted dose..:response relationships:In the standard pesticide dose-response relationship, responses increase as dose increases. However, some ch micals have an inverted relationship and higher doses of the chemical ••actually inhibit some responses that are stimulated by much lower doses."[15] Examples come from recent studies of bisphenol A, used in plastics and as an inert ingredient in pesticides. At "environmentally relevant"16'17 concentrations, bisphenol A changed the developmental rate of mouse embryos[16] and altered the structure of breast tissue in adolescent mice in a way that is associated with breast cancer. In oth cases, researchers found that low doses had a greater effect than the higher doses.

Summing Up

Pesticide regulation needs to be based on good science, making continuous use of current research and the increased understanding that comes with it. By insisting that only an old and simplistic dose-response relationship can be relevant to pesticides, pesticide proponents are hiding from modem toxicology. Five hundred years ago, Paracelsus was actually searching for newer and better ways to understand how chemicals interact with the human body, not accepting obsolete ideas. Pesticide regulation today needs to follow his example.-*Caroline Cox*

References

1. "Paracelsus." *Encyclopedia Britannica* On/ine.1998. Paracelsus. www.search.eb.com/topic?artd=5836B&seq_nbr=1&page=n&isdn- =1.
2. Goodman,J.L. 1998. The traditional toxicologic paradigm is correct: Dose influences mechanism. *Environ. Health Persp.* 106 (Suppl. 1): 285 288.
3. Extension Toxicology Network. 1993. Dose response relationships in toxicology. http:Il ace.orst.edulinfo/extoxnetftibs/doseresp.htm.
4. Stelljes, M.E. 2000. *Toxicology for non·toxicologists.* Rockville MD: Government Insti tutes. Pp. 33 37.
5. U.S. EPA. Integrated Risk Information System. 1999. Glossary of IRIS terms. www.epa.govlitis/gloss8.htm. (Definitions for reference dose and threshold.)
6. U.S. EPA. Office of Pesticide Programs. 1999. Assessing health risks from pesticides. www.epa.gov/opp00001{citizens/riskassess.htm.
7. U.S.EPA. Office of Pesticide Programs. Undated. Setting tolerances for pesticide residues in foods. www.epa.gov/pesticldes/cltizens/stprf.htm,
8. Kreutzer, R, R.R.Neutra, and N. Lashuay. 1999. Prevalence of people reporting sensitivities to chemicals In a populatlon based sUrvey. Am. *J. Epidemlo/.* 150:H2.
9. Axelrod, D. et al. 2001.It's time to rethink dose: The case for combining cancer and birth and developmental defects. *Environ. Health* Persp. 109: A 246-A 249,
10. Daniels, J.L et al. 2001. Residential pesticide exposure and neuroblastoma. *Epidemiof.* 12: 2()..27.
11. Federal Food, Drug, and Cosmetic *Ad§* 408(b)(2)(C).
12. Leng, G. and J. Lewalter. 1999. Role of Indi vidual susceptibility in risk assessment of pesti cides. *Occup. Environ. Med.* 56: 449-453.
13. Sheehan, D.M. et at. 1999. No threshold dose for estraqjoHnduced sex reversal of turtle embryos: How little is too much? *Environ. Health* Persp. 107:155-159.
14. Slatkin, T.A. al. 2001. Persistent cholinergic presynaptic deficits after neonatal chlorpyrifos exposure. *Brain Res.* 902: 229 243.
15. Bigsby, R. et at 1999.Evaluating the effects of endocrine disrupters on endocrine function dur ing devillcpment. *Environ. Health Persp.* 107 (Suppl. 4): 613·61B.
16. Takai, Y. et al. 2001. Prelmplantation exposure to bispheno!A advances postnatal development.
17. Markey, C.M. et al. 2001. In utero exposure to bisphenol A alters the development and tissue organization of the mouse mammary gland. *Bioi. Repro.* 65:1215·1223.

http://www.stopwestnilesprayingnow.org/ToxicologyABCs.pdf

PYRETHRIN

PYRETHRIN Drug Information

Drug Name: PYRETHRIN

PYRETHRIN DESCRIPTION:
PYRETHRINS AND PIPERONYL BUTOXIDE-SHAMPOO (pie-RETH-rins WITH pip-ER-oh-nill)

COMMON PYRETHRIN BRAND NAME(S):
Medi-Lice, Pronto, R & C, Tegrin LF

PYRETHRIN SIDE EFFECTS:
Unlikely but report: skin rash; sneezing/stuffy nose, trouble breathing, skin infection or irritation not present before starting PYRETHRIN. If you notice other effects not listed above, contact your doctor or pharmacist

HOW TO USE PYRETHRIN:
PYRETHRIN: Review the manufacturer's Instruction sheet with your doctor or pharmacist and follow ·an directions carefully for your product. All household members and/or those in close contact with you should be checked for infestation and treated if infected. PYRETHRIN is for external use only. Avoid applying drug to the eyes, nose, mouth and vagina. Do not use on eyelashes or eyebrows. Check with MD.if these areas are infested. Do not use more drug than is recommended. Apply in a well-ventilated area- Apply to the hair and scalp once, thoroughly covering the affected area. Use a small amount of water and work the shampoo into the hair and scalp to form a lather. Leave on for about 10 minutes unless directed otherwise by your doctor. Rinse and dry with a clean towel. Use nit removal comb as directed. Wash hands immediately after use. Repeat the application once seven to ten days later to kill any newly hatched lice. Be sure to follow instructions on proper machine washing of clothing, bedding, etc., special house cleaning, plus comb and wig/hairpiece cleaning.

PYRETHRIN USES:
PYRETHRIN is used to treat current and active lice infestations. It is not used to prevent future lice infestations.

PYRETHRIN PRECAUTIONS:
Before using PYRETHRIN, tell your doctor your medical history, including: any allergies (especially drug, ragweed and chrysanthemum plants, or kerosene allergy), skin problems. PYRETHRIN is harmful if swallowed or inhaled. PYRETHiUN should be used only when clearly needed during pregnancy. Discuss the risks and benefits with your doctor. It is not known whether PYRETHRIN is excreted into human milk. Consult your doctor before breast-feeding.

PYRETHRIN DRUG INTERACTIONS:
Tell your doctor of all nonprescription or prescription medication you may use. Do not start or stop any medicine without doctor or pharmacist approval.

PYRETHRIN OVERDOSE:
If overdose is suspected, contact your local poison control center or emergency room immediately. Symptoms of overdose may include nausea, vomiting, diarrhea, unusual drowsiness or dizziness, headache, coughing, and difficulty breathing. This medicine may be harmful if swallowed or inhaled. If you or someone you know may have ingested or inhaled this medicine, contact your local poison control center or emergency room immediately.

PYRETHRIN NOTES:
Do not share PYRETHRIN with others.

MISSED PYRETHRIN DOSE:
If you miss a dose, consult your doctor or pharmacist.

PYRETHRIN STORAGE:
Store at room temperature between 59 and 86 degrees F (15-30 degrees C) away from light and moisture. Keep container tightly closed. Do not freeze.

Patient Health

;Fn!im
Prescriptions

c;ea ·:.::r: er.. 8eC:i..i >'
PrQcf!_:rh

"·. International

Prescriptions

*Fact sheet for Piperonyi Butoxide

JOURNAL OF PESTICIDE REFORM/SUMMER 2002"VOL.22,NO. 2 %re INSECTICIDE SYNERGIST FACTSHEET PIPERONYL BUTOXIDE Piperonyl butoxid.e (PBO) is a synergist used to increase the potency of insecticides Iike pyrethrins and pyrethroids.According to the U.S.- Environmental Protection Agency (EPA), PBO is one of the most commonly used ingredients in household pesticide products.PBO acts, as a synergist by inhibiting the activity of a family of enzymes callec,l P450s·. These enzymes have many functions, including .breakdown o(toxic chemicals and·transformation of hormones. Symptoms of PBO exposure include nausea, diarrhea, and labored breathing. EPA classifies PBO as a possible human carcinogen because it caused liver tumors and cancers in laboratory tests. In a study conducted by PBO manufacturers, PBO caused atrophy O·f the testes in male rats. Other researchers found behavioral changes (a decrease in home recognition behavior) in the offspring of exposed mothers. PBO affects a variety of hormone-related organs, including thyroid glands, adrenal glands and the pituitary glanL PBO reduces the immune response of human lymphocytes,.,cells in our blood that help fight infections. Concentrations of less than one part per million of PBO reduce fish egg hatch and growth of juvenile fish. PBO also inhibits hormone-related enzymes in fish and slows the breakdown of toxic chemicals in their tissues. PBO is very toxic to earthworms and highly toxic to aquatic animals.

•Fact sheet for Pyrethrius.& Pyrethrum

JOURNAL OF PESTICIDE REFORM/SPRING 2002"VOL.22, NO. l %re INSECTICIDE FACT SHEET PYRETHRINS/PYRETHRUM Pyrethrins and pyrethrum are the most frequently used home and garden insecticides in the U.S. They are often used in indoor sprays, pet shamp oos, and aerosol bombs to kill flying and jumping insects.fyrethrins are a common cause of insecticide poisonings.. According to a U.S. Environmental Protection Agency (EPA) survey of poison control centers, they cause more insecticide poisoning incidents than any other class of insecticides except the organophosphates. Symptoms include headaches, dizziness, and difficulty breathing. Pyrethrins can trigger life-threatening allergic responses including heart failure and severe asthma. In laboratory animals exposed through eating, by injection, or through breathing, pyrethrins have caused anemia. Experiments with dairy cows suggest that nursing mothers exposed to pyrethrins can pass them on to their children. Pyrethrins disrupt the normal functioning of sex hormones.They inhibit binding of sex hormones to human genital skin and proteins in human blood.Pyrethrins are classified as likely to be human carcinogens .. by EPA because they cause thyroid tumors in laboratory tests. Farmers who use pyrethrins have an increased risk of developing leukemia.Pyrethrins are extremely toxic to bees, fish, and other aquatic animals. Folio wing indoor treatments, pyrethrins have persisted up to 2 1/2 months in carpet dust.

*The ABCs of Toxicology

http://www.stopwestnilesprayingnow.org/PesticideFacts.htm

"Are Pesticides the Cure or the Cause for West Nile Virus?"

Posted By Dr. Mercola June 14 2003

West Nile Virus (WNV) has spread rapidly across the United States and Canada since its arrival in North America in 1999.

It infects over 150 species of birds as well as mammals including squirrels, dogs, wolves, horses and mountain goats.

Different types of mosquitoes are responsible for risk of disease in humans. One type feeds on birds and transmits the virus to other birds, which creates a large reservoir of WNV infection that starts to build in early spring. Another type of mosquito feeds on both birds and humans and can transmit the virus to humans.

While mosquitoes represent the most common route for transmission of the disease to humans, WNV can also be spread through blood or organ donation, pregnancy, lactation, needle-stick injury and exposure to infected laboratory specimens.

Symptoms of WNV range from fever accompanied by malaise, headache, myalgia, rash, lymphadenopathy, eye pain, anorexia and vomiting lasting for three to six days, to severe meningo-encephalitis. Severe muscle weakness and flaccid paralysis have also been experienced.

A large part of preventing the transmission of WNV relies on the elimination of mosquito breeding sites and the use of personal protection.

Public education can promote personal protection, but further control measures, including the use of larvicides and adulticides, have also been used to reduce mosquito populations.

Larvicides are used in the spring and early summer to reduce the number of emerging mosquitoes. They are often in granular, pellet or teabag formulations and are placed in catch basins and standing water sites that are close enough to human populations to pose a risk.

Adulticides are used to kill adult mosquitoes and are applied from equipment mounted on aircraft or trucks. They are used as a final measure when other methods to reduce mosquito populations have failed. --Canadian Medical Journal May 27, 2003;168 (11)

Dr. Mercola's Comments:

The pesticides that are being used to fight the West Nile Virus are surely going to contribute to a number of other diseases.

Spraying for mosquitoes is a major problem across the country. Pyrethrum insecticides, a type of insecticide being used to combat the virus, have been shown to cause birth defects in animal studies (Abstract). They may also interfere with the immune and endocrine systems and toxicology testing has shown other adverse chronic effects, including effects on the liver and thyroid.

Releasing toxic chemicals into the environment can have devastating effects. The major tragedy of the West Nile Virus is not the virus itself--it has not spread to epidemic proportions like a number of other chronic diseases--but rather the damage that is being done to people and their young and unborn children through exposure to these toxic chemicals.

Further, pesticides, including commonly used lawn care chemicals, are causing more bird deaths than the West Nile Virus. In one study on the West Nile Virus, more of the collected birds had died from pesticide poisoning than from the virus itself.

The symptoms of pesticide poisoning in humans are similar to the rather vague symptoms of the West Nile Virus itself, which are inflammation of the brain, weakness and neuropathy (peripheral nerve damage), leading to symptoms such as numbness. These could be mistakenly diagnosed as West Nile Virus, therefore creating more cases and a call for more intense spraying of pesticides.

← same symptoms

Related Articles:

Pesticides, NOT West Nile Virus, are the Leading Cause of Bird Deaths

Pesticides Targeting West Nile-Carrying Mosquitoes May be a Thyroid Danger

Blowing the Whistle on West Nile

West Nile Virus - Does it Exist?

http://articles.mercola.com/sites/articles/archive/2003/06/14/pesticides-west-nile.aspx

"Censored Gulf dispersant news: Act of war (Pt II) The Art of Chemical Warfare" EPA, DoD, PetroChem corporations: bed fellows to rid "pests"

Chemical warfare on Americans in the Gulf Coast region and beyond has been planned and researched by the EPA, DoD and petro-chemical companies for decades according to government documents, some cited within"this report below. .
It is tragically naive to think that the Gulf region aerial pesticide spraying will stop before the mission is complete. The major agency holding the key to halt the genocide, the agency portrayed as the government body protecting the public and environment, the Environmental Protection Agency (EPA), has been collaborating with chemical companies and the Department of Defense (DoD) for decades rather than protecting the public from their kill-off agenda. This collaboration increased during the Bush administration, its fruits finally overtly witnessed in Obama' Gulf operation.

"From environmentalists and wildlife specialists to fisherman and businessmen along the Gulf Coast the message is the same: BP is not only strangling the news of what is actually occurring in the Gulf of Mexico with the oil disaster but has co-opted key federal regulatory and oversight agencies to advance its agenda and that of its oil partners, including Halliburton, Anadarko, and Transocean," writes Wayne Madsen now in New Orleans.
BP, Coast Guard, NOAA, FAA, EPA are all engaged in one of the la[gest cover-ups in U.S. history, as well-organized and well-prepared to apply as the very pesticides they spray on people of the Deep South.

During Bush's first four years in office, the EPA entered fifty-seven corporate research and development agreements with individual corporations or industry associations, many of which were chemical corporations, compared to thirty-four such agreements in Clinton's 2nd term.(1) The American Chemical Council is now EPA's leading research partner. Furthermore, the EPA gains over 90% of its funding from petro-chemical companies, as documented in Josh Tickell's *FUEL* film.

In April 2005, EPA's Science Advisory Board warned that the agency was no longer funding credible public health research.
The Department of Health and Human Services has, nevertheless, set aside $10 million to 'study cleanup workers and gulf residents over time'(2) to research effects of the Gulf aerial spraying military operation, one of, if not the largest non-consensual human experiment to date. The EPA is involved in this research project.
In Louisiana hospitals, doctors and nurses are "manning" decontamination tents, no doubt monitoring - non-consensual human research, even if patients sign a consent form. What real choice do scared, hopeless people have under the circumstances?

Compounding this horror is EPA sharing its bed with the Department of Defense, working hand-in-. hand for its federally funded research projects, including many related to "possible effects" of **upesticides...**

According to the 2005 government paper, *The* U.S. *Environmental Protection Agency Collaborate to Enhance on Site Detection and Identification of Pesticides and NeNe Agents and the Department of Defense:* "The Environmental Protection Agency's Office of Pesticide Programs maintains the National Pesticide Standard Repository (NPSR), located at the Environmental Science Center (ESC), in Fort Meade, MD. Analytical standards of all pesticides registered for use in the United States must be sent to the NPSR."(3)

In Chapter II of the document, *Federal And Department Of Defense Guidance Of The* U.S. *Environmental Protection Agency Collaborate To Enhance On Site Detection And Identification Of Pesticides And NeNe Agents,* it is stated that the EPA regulates pesticide use within the U.S. under authority of two laws, the Federal Insecticide Fungicide and Rodenticide Act (FIFRA), and the Federal Food, Drug and Cosmetic Act (FFDCA).[575] FIFRA classifies pesticides as either restricted or general use.
Dod Pesticide 'Champions' says EPA

DoD Directive 4150.7 *"Department of Defense* Pest *Management Program"* provided policy for DoD pest management and control operations *worldwide* for all services. Furthermore, a U.S. Department of Defense article entitled *"EPA Names DOD 'Champion' for Pestitcide Management"* states:

"The Department of Defense (DoD) Armed Forces Pest Management Board (AFPMB) has been recognized by the Environmental Protection Agency (EPA) as a 'Champion' in their Pesticide Environmental Stewardship Program EPA recognized AFPMB for its extraordinary level of commitment and outstanding efforts to reduce pesticide risks and protect human health and the environment.

"The AFPMB is one of more than 130 members of the program established in 1994 to reduce risks associated with pesticides. Dr. Janet Anderson, director of EPA's Biopesticides and Pollution Prevention Division, said that DoD, the only federal agency awarded Champion status in 2002, deserved the award for "pushing the envelope by setting ambitious goals and implementing strategies for reducing pesticide risk."

The overview in the document entitled, "Two Sample Spectra Comparing Pesticides With Chemical Agents" further highlights the depth of the DoD – EPA relationship. This states:

"The US EPA Office of Pesticides Programs (OPP) Analytical Chemistry Branch (ACB) and the U.S. Air Force collaborated to support Homeland Security by producing a library of infrared spectra that would be used with a portable Fourier Transform Infrared (FTIR) detector to compare and identify pesticides that might be used at a possible terrorist or Weapons of Mass Destruction (WMD) site.

This same document's *"TAB C-3-* Pesticide *Guidance, Reference Information, and Research"* Overview includes background information on federal and Department of Defense guidance in effect during the "Gulf War.' It lists internet sites supplying referenced information about pesticides, and federally-funded research projects related to possible effects of pesticide use during the "Gulf War."

Under "II. Federal And Department Of Defense Guidance" in this document it is stated, "The US Environmental Protection Agency (EPA) regulates pesticide use within the US under the authority of two laws –the Federal Insecticide Fungicide, and Rodenticide Act (FIFRA), and the Federal Food, Drug and Cosmetic Act (FFDCA).[575] FIFRA classifies pesticides as either restricted or general use."

Also important in understanding just how well established, deep-seated and global in nature the toxic aerial spraying research on humans program is DoD Directive 4150.7, *"Department of Defense Pest Management Program."* This provides a policy for DoD pest management and control operations worldwide for all services. (Emphasis added) Modelled after EPA standards, DoD's stated policy has been to "establish and maintain safe, efficient, and environmentally sound integrated pest management programs to prevent or control pests that may adversely affect health or damage structures, material, or property." (Emphasis added)

Several research projects have been investigating possible health effects of multiple chemicals, including pesticides. The Department of Veterans' Affairs, working through the Research Working Group of the Persian Gulf Veterans Coordinating Board, have coordinated the projects. The Annual Report of this working group discloses one of its aims:
"Investigate innovative technologies for improving methods for real-time and cumulative monitoring of pesticide exposure, and identify useful biomarkers to assist in post-exposure assessments.[p. 587]

The document, DoD 4150.7-P, September 1996 on Page 12, states that the Secretary of D may submit to EPA for approval, a plan for certification of DoD employees as applicators of r use pesticides. **Aerial spraying can be conducted without state certification.**
In Chapter 2 on Page 13 of th i paper, i accordance with the plan may, without obtaining any additional State certification, use and supervise the use of restricted use pesticides while engaged in the performance of their official duties." (Emphasis added)
This document provides "standards of competency required by the Department of Defense.' Category 11 is of interest, Aerial Application Pest Control:

"Individuals certified in this category must successfully complete the core and appropriate category(s). They must complete a training program and pass a written examination that covers the following areas: general principles, meteorological aspects, legal aspects, environmental aspects, DoD spray systems and aircraft, aerial spray math, aerial spray maps, contingency operations, spray system calibration, swath characterization, pesticides and pesticide safety, and aerial spray in the military." (7)

The petrochemical-military-industrial complex operation conducted today in the Gulf to "disperse" oil might be officially classified "experimentation." With years and millions of dollars.spent on such research and pesticide application on humans, however, this operation's health effects on the human population are better known than admitted.

Public response is denial, an initial sign of shock, when hearing that its military, the EPA and chemical corporations have been preparing for chemical warfare on its people. Facts remain, however, that in blatant contempt of the Nuremberg Code, using both legal loopholes and "national security" as justification; secret programs involving non-consensual human experimentation of chemical weapons of mass destruction in the form of pesticide aerial spraying, have been and are conducted, even on our children, nothing more than "pests" to the Illuminati.
There is no end to death and destruction through aerial chemical spraying that the U.S. military and its bedmates, EPA and chemical companies. Madsen reports:
What is actually 'closed' at Fort Jackson is a major joint BP-Coast Guard Corexit operation. WMR has also been informed by a reputable source that BP has been engaged in night time spraying of a bleaching agent on Louisiana beaches to make it appear that the beaches are being cleaned up. The planes, which fly at night, disregard flight regulations by flying with their lights out. The operations have been approved by the Coast Guard and Federal Aviation Administration (FAA).•

The deliberate aerial poisoning of Americans with a chemical weapon of mass destruction now obvious in the Gulf of Mexico and coastal region is not only an act of war on the American population. As the poisoned waters and air circumvent the planet, this operation is a national security risk to nations throughout the world.

References

1. Ruch, J. *Chemica/Industry is EPA's Primary Research Partner,* found in Project Censored, Top 25 Censored Stories of 2007.
2. Galvan, Kristin, *Potential Health Effect of Oil Spill,* My Fox Houston, 22 June, 2010 http://www.myfoxhouston.com/dpp/news/local/100622-potential-health-effects-of-oil-spill
3. Cole, Theresa, Environmental Protection Specialist, *The U.S. Environmental Protection Agency Collaborate to Enhance on Site Detection and Identification of Pesticides and Nerve Agents and the Department of Defense,* US EPA!OPPTS/OPP/BEAD/ACL Chet Bryant, Captain USAF, DOD/US Air Force Dallas Wright, Jr., Chemist, US EPAIOPPTS/OPP/BEAD/ACL, 2005
4. See: *EPA Names DOD "Champion• for Pestitcide Management;* Online: http://chppm-www.apgea.army.mil/ento/dodepamo.htm)
5. C2.2. LEGAL AUTHORITY, Section 171.7(h)(1) of 40 CFR (reference (c)); C2.2.1. DoD Authority. In accordance with FIFRA (reference (a)), 40 C.F.R. Part 171 (reference (c)), and 42 FR 41907-41908 (reference (d))
6. Ibid. (See: C3.4.1.3. The conduct of field research that includes using or supervising the use of restricted use pesticides)
7. *DaD 4150.* 7-P, September 1996, p. 35 (http://www.dtic.miVwhs/directives/corres/pdf/415007pp.pdf.)

Deborah Dupre, with post-graduate science and education degrees from U.S. and Australian universities, has been a human and environmental rights advocate for over 25 years in the U.S., Vanuatu and Australia. Support her work by ***subscribing to her articles*** *and sharing the link to this article. For a more just and peaceful world, see Dupre's* ***Vaccine Liberty or Death*** *book and* ***Compassion Film Project***

http://www.examiner.com/x-10438-Human-Rights-Examiner-y201Om7d11-Censored-Gulf-news-Act-of-war-Pt-ll

Pesticide Risks

"Agricultural Pesticides Linked to Miscarriage"
http://articles.marcola.com/sites/articles/archive/2001/02/28/pesticides-miscarriage.aspx

"Pesticides Increase Breast Cancer Risk
http://articles.marcola.com/sites/articles/archive/2008/01/02/pesticides-and-breast-cancer.aspx

"Pesticides May Increase Parkinson's Risk"
http://articles.marcola.com/sites/articles/archive/2000/05/14/pesticides-parkinson.aspx

"Pesticides May Decrease Male Fertility"
http://articles.mercola.com/sites/articles/archive/2008/01/02/pesticides-may-decrease-male-fertility.aspx

"Pesticides, NOT West Nile Virus, are the Leading Cause of Bird Deaths"
http://articles.marcola.com/sites/articles/archive/2001/07/04/pesticides-part-three.aspx

"Pyrenone 25-5 fact sheet by Bayer"
http:1/www.fightthebite.net/download/labels/PY R251.pdf

"Pyrethroid Fact Sheet"
http://www.pestking.com/Pyrethroid_Fact_Sheet.htm

Inert Ingredients dangerous
http://www.rense.com/general91/monss.htm
http://www.stopwestnllesprayingnow.org/PesticideFacts.htm

'' no unprotected person may be in the treated area during pesticide application. • no pesticide application is to be permitted that will expose any person to pesticides, either directly or through drift, excepting those involved in the application.
http://psep.cce.cornell.edu/Tutorials/core-tutorial/module03/index.aspx

"Pesticides Increase Breast Cancer Risk

Posted By Dr. Mercola January 02 2008 ·

Exposure to certain pesticides, known as organochlorines, may increase the·risk of breast cancer in women. Organochlorines, which are found in agricultural and industrial products, have a weak estrogen-like effect, and play a role in the development of breast cancer. After taking into account other known risk factors for breast cancer, the researchers write that the risk of breast cancer was twice as high in women with the highest (blood) concentrations of dieldrin (an organochlorine) as that in women with the lowest concentrations.
The Lancet 1998;352;1816-1820.

COMMENT: In addition to causing breast cancer, these chemicals also cause infertility in the children who were exposed to these chemicals while they were in their mother's womb. Because of this 20-30 year delay in the effects, this aspect of pesticide exposure is not well studied or well known.
I would highly recommend the book Our Stolen Future by Thea Colburn which discusses this issue in great detail. Assuming we make it through Y2K, this may be one of the most significant medical issues of our times.
Dental sealants are also chemicals which serve as xenoestrogens. They should NOT be placed in your children's mouth. They will decrease cavities BUT they will also increase estrogen levels and cause enlarged breasts in boys and puberty problems in many of the children who receive these synthetic estrogen analogs.

http://articles.mercola.com/sites/articles/archive/2008/01/02/pesticides-and-breast-cancer.aspx

GMO Corn May Turn Your Tummy Into a Poison Production Factory

August'22nd, 2010. Michael Danielson.

The biotechnology industries are quite proud of their pes!-resistant, genetically modified (GMO) corn and other crops. When you hear the term 'pest-resistant', you might not think, at first, of what that truly means –, that the modified plants are creating their own pesticide inside their cells. In short, the plants kill the bugs that eat them, so the bugs learn not to eat them. Of course, that means that humans who consume the pest-resistant GMO corn are consuming pesticide with every bite, but it's pesticide from inside the corn, so you can't wash 'it off. Biotech companies claim that the toxin that their GMO plants create isn't dangerous to humans, but many studies show otherwise.

Mice fed the toxin suddenly became allergic to many compounds that previously didn't bother them. Farm workers have had reactions to the genetically modified toxin, and the Federal Court of Canada has recognized that "People with compromised immune systems or pre-existing allergies may be particularly susceptible to the effects of [this toxin]."

VI/hen the same toxin that GMO plants create within their cells was sprayed over areas of Washington State, six people went to the emergency room and hundreds more reported flu-like or allergy-like symptoms — all provably related to the spray. Then ponder the fact that, inside the plant, the toxin is more than *three thousand* times as concentrated as it is in the natural commercial sprays, and you can start to grasp the danger.

That's not even half of the danger associated with the pest-resistant corn, however. The toxin is consumed when the corn is eaten, but it's also present in the pollen, which can be inhaled by anyone working near the corn field. One Filipino village was mysteriously stricken with a disease in which the entire village suffered headaches, vomiting, chest and stomach pain, fever, and more — for exactly the duration of time that a nearby GMO corn field was blooming. The sickness recurred every year that the same variety of corn was planted in that field, and vanished when the corn was replaced with a different breed. VI/hen the same breed of corn was planted near four other villages in the area, the same symptoms swept the villages, again only during pollination season.

Scientists in the UK have verified an even further threat -that modified genes can be transferred from the inhaled pollen into the DNA of bacteria that normally inhabit the respiratory system. Independently, other UK scientists have verified that foreign genes inserted into soybeans can transfer into the DNA of bacteria naturally living in the human intestines. It's very likely that this pesticide-producing gene could eventually be transferred into the same intestinal bacteria — turning your own intestines into a factory for a dangerous pesticide.

The American Academy of Environmental Medicine (AAEM) has called upon "Physicians to educate their patients, the medical community, and the public to avoid GM (genetically modified) foods when possible and provide educational materials concerning GM foods and health risks." The AAEM demanded a moratorium on genetically modified foods, further studies, and GMO labeling laws. "Several animal studies indicate serious health risks associated with GM food," they state, "There is more than a casual association between GM foods and adverse health effects. There is causation."

Internal medicine specialist Dr. Amy Dean says, "I strongly recommend patients eat strictly non-genetically modified foods." Dr. John Boyles, an allergist, says, "I used to test for soy allergies all the time, but now that soy is genetically engineered [91% of soy is GMO], it is so dangerous that I tell people never to eat it." Dr. Jennifer Armstrong, President of AAEM, says, "Physicians are probably seeing the effects in their patients, but need to know how to ask the right questions."

It's tough for a physician who has been trained to look for bacterial, viral, and chemical sources of disease to recognize that the natural [and absolutely necessary] bacteria in your intestines have suddenly undergone a genetic transformation due to GMO corn, and are actively poisoning you from the inside. Until we can have an open and rational discussion about the potential effects of genetically modified corn, it's a danger that none of us can predict — or treat.

http://all247news.com/gmo-corn-may-turn-your-tummy-into-a-poison-production-factory/3852/

(BT) Toxin from GM crops found in human blood: Study

Din(;lsh C. Sharma I"New Delhi, May 11, 2011
Bt toxin is widely used in genetically modified crops.

R(;llateds

- 'Bt brinjal developers violated laws'
- Jairam must take a call on Bt brinjal
  Won't allow cultivation of Bt brinjal: TN govt

Fresh doubts have arisen about the safety of genetically modified crops, with a new study reporting presence of **Bt toxin,** used widely in GM crops, in human blood for the first time.

Genetically modified crops include genes extracted from bacteria to make them resistant to pest attacks.

These genes make crops toxic to pests but are clalined to pose no danger to the environment and human health. **Genetically modified** brinjal, whose commercial release was stopped a year ago, has a toxin derived from a soil bacterium called Bacillus thuringiensis (Bt).

Till now, scientists and multinational corporations promoting GM crops have maintained that Bt toxin poses no danger to human health as the protein breaks down in the human gut. But the presence of this toxin in human blood shows that this does not happen.

Scientists from the University of Sherbrooke, Canada, have detected the insecticidal protein, CrylAb, circulating in the blood of pregnant as well as non-pregnant women.

They have also detected the toxin in fetal blood, implying it could pass on to the next generation. **The-:research paper has beerr peer re'liewed- a-nd- aceepted f-or publi-cati-on- ia fue. journal** Reproductive Toxicology. The study covered 30 pregnant women and 39 women who had come for tubectomy at the Centre Hospitalier Universitaire de Sherbrooke (CHUS) in Quebec.

None of them had worked or lived with a spouse working in contact with pesticides.

They were all consuming typical Canadian diet that included GM foods such as soybeans, corn and potatoes. Blood samples were taken before delivery for pregnant women and at tubal ligation for non-pregnant women. Umbilical cord blood sampling was done after birth.

CrylAb toxin was detected in 93 per cent and So per cent of maternal and fetal blood samples, respectively and in 69 per cent of tested blood samples from non-pregnant women. Earlier studies had found trace amounts of the CrylAb toxin in gastrointestinal contents of livestock fed on GM com. This gave r.se to.f.ea.cs that the toxins may not be effectively eliminated in humans and there may be a high risk of exposure through consumption of contaminated meat.

"Generated data will help regulatory agencies responsible for the protection of human health to make better decisions", noted researchers Aziz Aris and Samuel Leblanc.

Given the potential toxicity of these environmental pollutants and the fragility of the foetus, more studies are needed, particularly those using the placental transfer approach, they added Experts have warned of serious implications for India. Cottonseed oil is made from seeds of genetically modified cotton and thus Bt toxin may have already entered the food chain in India.

"Indian regulators should be immediately called for detailed toxicological studies to know the extent of contamination of the human blood with Bt toxins coming from cottonseed oil, and also **ascertain_ its. long term health impacts," Sharma. said.**

http:1/indiatoday.intoday.in/site/story/toxin-from-gm-crops-found-in-human-blood/1/137728.html

Genetically Engineered Food Alters Our Digestive Systems!

May 31, 2011

GE organisms actually become part of the bacteria in our digestive tracts and reproduce continuously inside us. But the USDA now wants to to remove all controls from GE corn and cotton! ***A new Action Alert.***

There are no human clinical trials of genetically engineered foods. The only published human feeding experiment revealed that genetic material inserted into GE soy transfers into the DNA of bacteria living inside our intestines and continues to function. Even after we stop eating GE foods, we may still have the GE proteins produced continuously inside us.

As the Institute for Responsible Technology has noted, the genetic engineering process creates massive collateral damage, causing mutations in hundreds or thousands of locations throughout the plant's DNA. Natural genes can be deleted or permanently turned on or off, and hundreds may change their behavior. Even the inserted gene can be damaged or rearranged, and may create proteins that can trigger allergies or promote disease.

The idea of having genetically engineered genes permanently living inside our guts has staggering implications:

- If the antibiotic gene inserted into most GM crops were to transfer, it could createantibiotic-resistant diseases.
- Bt toxins *(Bacillus thuringiensis)* inserted into GM food crops to kill pests are reaching the bloodstreams of 93% of women and 80% of unborn babies because of the consumption of meat, milk, and eggs from livestock fed GE corn. This could turn bacteria in our intestines into pesticide factories.
- Animal studies show that DNA in food can travel into organs throughout the body, even into the fetus.

And we've seen cross-species transfer of DNA happen before. A significant percentage of human DNA is actually viral DNA that became part of us over 40 million years ago. There is concern that virally transmitted DNA may cause mutations and psychiatric disorders such as schizophrenia and mood disorders. GE organisms may exacerbate this phenomenon.

Genetically engineered food genes transferring to our own genes could lead to problems \ikeleaky gut syndrome:

- Our small intestine, which is responsible for about 70% of our immune system, behaves like a selective sieve: it lets only nutrients and well-digested fats, proteins, and starches enter the bloodstream and keeps out large molecules, microbes, and toxins.
- Leaky gut syndrome happens when the intestinal lining becomes inflamed, and themicrovil\i on the lining become damaged; this prevents the microvilli from absorbing nutrients and producing necessary enzymes and secretions for healthy digestion and absorption.
- In between cells are desmosomes, which keep the cells together, forming a strong structure preventing large molecules from passing through. When an area becomes inflamed, the structure is weakened, allowing larger molecules to escape. The makes the immune system produce antibodies and cytokines to fight off molecules because they are perceived as antigens.

Allergies have already skyrocketed in the US, and with the introduction of GE soy in the UK, soy related allergies rose to 50%. Yet federal agencies turn a blind eye to the dangers of genetic engineering.

In 1989 there was a tragic outbreak of eosinophilia-myalgia syndrome (EMS), an incredibly painful disease. The outbreak was traced to consumption of !-tryptophan supplements produced by a Japanese company using genetically engineered bacteria. The bacteria are used to increase yields, but they increase impurities during the fermentation process-possibly leading to a level of contaminants that caused the EMS.

To this day, the government has refused to address the issue of purity standards forGE-manufactured products. Instead, federal agenciesand biotech companies claimed that contaminants linked to the EMS tragedy were caused by changes in the company's manufacturing process-despite the fact that the company was precisely following the purity standards enforced by government rules.

The EMS was rare and had a fast enough onset that the case histories of the patients could be linked to this supplement, and it was also acute enough that doctors took notice. There is a very clear causal link between EMS and these genetically engineered organisms.

The effects of other genetically modified products may not be as obvious so quickly, but can be even more devastating; as we have reported previously, GMOs are causing terrible genetic changes in mammal offspring. Scientists are seeing birth defects, high infant mortality rates, and sterility in hamsters, rats, and livestock fed GMO soy and corn, and some hamster pups even begin growing hair inside their mouths.

The late George Wald, Nobel Laureate in Medicine or Physiology in 1967 and Higgins Professor of Biology at Harvard University, was one of the first scientists to speak out about the potential dangers of genetic engineering:

Recombinant DNA technology [genetic engineering] faces our society with problems unprecedented, not only in the history of science, but of life on the Earth....Now whole new proteins will be transposed overnight into wholly new associations, with consequences no one can foretell, either for the host organism or their neighbors....For going ahead in this direction may not only be unwise but dangerous. Potentially, it could breed new animal and plant diseases, new sources of cancer, novel epidemics.[1]

The USDA has released two Environmental Assessment reports, one for Monsanto's corn genetically engineered to be drought-tolerant, and the other for Syngenta Biotechnology'scotton genetically engineered to be pest-resistant. USDA believes the cotton is "unlikely to pose a plant pest risk"; for the corn, the agency is considering either keeping the corn under regulation, or assigning it nonregulated status (banning it altogether is off the table). The comment period for both EAs is open until July 11.

Please take action today! Tell the USDA that the corn and cotton must not be deregulated-that without strict controls, GE crops will encroach on non-GE crops, contaminating them, including organic crops-which will, of course, render them non-organic.

The GE corn is especially dangerous because it is for human consumption. As noted above, GE genes from foods can affect the bacteria from our digestive system, and can lead to allergies, disease and even sterility.

GMOs are causing terrible genetic changes in mammal offspring. Scientists are seeing birth defects, high infant mortality rates, and sterility in hamsters, rats, and livestock fed GMO soy and corn, and some hamster pups even begin growing hair inside their mouths.

http://www.anh-usa.org/genetically-engineered-food-alters-our-digestive-systems/

Bacillus thuringiensis (Bt) Insecticide Fact Sheet

Acute Toxicity to Humans

Bacillus thuringiensis var. kurstaki:

There have been few experimental studies assessing the toxicity of Btk. to humans. Most information comes from occupational exposures, or from exposures occurring during large-scale Btk. programs.

One case of Btk. infection resulted from a farmer splashing a Btk. formulation, Dipel, in his eye. The man developed an ulcer on his cornea from which positive Btk. cultures were taken.21 Another man working on a spray program splashed Btk. on his face and eyes. He then developed skin irritation, burning, swelling, and red-ness. Btk. was cultured from a sample taken from his eye.22 Ground-spray applicators using Foray 488 reported symptoms of eye, nose, throat, and respiratory irritation. The frequency of their complaints was found to be related to the degree of exposure. Workers with similar preexisting health problems were more likely to report ad-verse effects from the ground spray.23

A woman exposed to an Btk. formulation as a result of drift went to the hospital due to burning, itching and swelling of her face and upper chest. She later exhibited a fever, altered consciousness, and suffered seizures.24 No Bt was cultured from tissue samples, but her doctor believed that Bt was the cause of the clinical symptoms.25

Monitoring studies following large-scale Bt spray programs have shown that exposed people carry Bt in their tissues. For example, more than 11 percent of nasal swab samples taken from patients surveyed by doctors in Vancouver (Canada) following a gypsy moth spray program were found to contain Btk.23 Bt was also found in cultures taken from patients in Lane County, Oregon following a gypsy moth spray program there. Monitoring studies also show that exposed people report a variety of health problems that they believe to be associated with Bt exposure.22 For example, during the Vancouver spray program, almost 250 people reported health problems, mostly allergy-like or flu-like symptoms. During a Washington gypsy moth spray program, over 250 people re-ported health problems and 6 were treated in emergency rooms for allergy or asthma problems.26 Physicians have so far been un-able to definitively link Bt exposure to these health problems.22,23,26

Bacillus thuringiensis var. israelensis:

There has only been one case of documented adverse effects of Bti. on humans. This case involved a researcher who accidentally injected himself with a mixture of Bti. and another kind of bacteria commonly found on human skin.20 He suffered from a toxic reaction and irritated lymph vessels. When these two bacteria were later injected into rodents the combination was consistently lethal, but each bacteria injected separately caused only slight inflammation.8

http://www.mindfully.org/GE/Bacillus-thuringiensis-Bt.htm

Enjoy Pesticides in Every Bite of GMO Food?

Posted By Dr. Mercola | August 09 2007

The Scary Truth about Genetically Engineered Insect Control Facts You Must Know...

By Jeffrey M. Smith 08-09-07

The biotech industry is fond of saying that they offer genetically modified (GM) crops that resist pests, conjuring up the image of insects staying away from GM crop fields.

But "resisting pests" is just a euphemism, for ***"contains its own built-in pesticide."*** When bugs take a bite of the GM plant, the toxin splits open their stomach and kills them!

The idea that we consume that same toxic pesticide in every bite is hardly appetizing!

But the biotech companies and the Environmental Protection Agency-which regulates plant produced pesticides-tell us not to worry. They contend that the pesticide called Bt (Bacillus thuringiensis) is produced naturally from a soil bacterium and has a history of safe use.

Organic farmers, for example, have used solutions containing the natural bacteria for years as a method of insect control. Genetic engineers simply remove the gene that produces the Bt in bacteria and then insert it into the DNA of corn and cotton plants so that the plant does the work, not the farmer.

Moreover, they say that Bt-toxin is quickly destroyed in our stomach... and even if it survived, since humans and other mammals have no receptors for the toxin, it would not interact with us anyway.

These arguments, however, are just that-unsupported assumptions. Research tells a different story.

Do You Ever Worry About The Sprays Used To Control Pests?

When natural Bt was sprayed over areas around Vancouver and Washington state to fight gypsy moths, about 500 people reported reactions-mostly allergy or flu-like symptoms.

Six people had to go to the emergency room for allergies or asthma.1,2 Workers who applied Bt sprays reported eye, nose, throat, and respiratory irritation.3 Some showed an antibody immune response linked to Bt.4

Farmers exposed to liquid Bt formulations had reactions including infection, an ulcer on the cornea,S skin irritation, burning, swelling, and redness.6 One woman who was accidentally sprayed with Bt developed fever, altered consciousness, and seizures.7

In fact, authorities have long acknowledged, "People with compromised immune systems or pre-existing allergies may be particularly susceptible to the effects of Bt."B The Oregon Health Division advises that "individuals with . . . physician-diagnosed causes of severe immune disorders may consider leaving the area during the actual spraying."9

A spray manufacturer warns, "Repeated exposure via inhalation can result in sensitization and allergic response in hypersensitive individuals."10 So much for the contention that Bt does not interact with humans.

As for being thoroughly destroyed in the digestive system, mouse studies disprove this as well.

Mice fed Bt-toxin showed significant immune responses-as potent as cholera toxin. In addition, Bt caused their immune systems to become sensitive to formerly harmless compounds, suggesting that

exposure might make a person allergic to a wide range of substances.11,12

The EPA's own expert advisors said that the mouse and farm worker studies above "suggest that Bt proteins could act as antigenic and allergenic sources."13

CLICK HERE NOW - Don't be a guinea pig for genetic engineering!

Are GM Plant Toxins Really More Dangerous Than Natural Sprays?

The Bt-toxin produced in GM crops is "vastly different from the bacterial [Bt-toxiris] used in.organic and traditional farming and forestry."14

First of all, GM plants produce about 3,000-5,000 times the amount of toxin as the sprays. A Bt producing GM plant continuously produces the toxin in every cell where it does not dissipate by weather and cannot be washed off.The bacterial spray form, on the other hand, is broken down within a few days to two weeks by sunlight,15 high temperatures, or substances on the leaves of plants, and can be "washed from leaves into the soil by rainfall,"16 or rinsed by consumers.

The natural toxin produced in bacteria is inactive until it gets inside the alkaline digestive tract of an insect. Once inside, a "safety catch" is removed and the Bt becomes toxic:

But scientists change the sequence the Bt gene before inserting it into GM plants. The Bt toxin it produces usually comes without the safety catch. The plant-produced Bt toxin is always active and more likely to trigger an immune response than the natural variety.17

Do Failed Safety Studies Mean, "Proceed Anyway?"

Tests cannot verify that a GM protein introduced into the food supply for the first time will not cause allergies in some people. The World Health Organization (WHO) and UN Food and Agriculture Organization (FAO) offer criteria designed to reduce the likelihood that allergenic GM crops are approved.18

They suggest examining a protein for 1) similarity of its amino acid sequence to known allergens, 2) digestive stability, and 3) heat stability. These properties aren't predictive of allergenicity. But according to experts, their presence should be sufficient to reject the GM crop or at least require more testing. The Bt-toxin produced in GM corn fails all three criteria.

For example, the specific Bt-toxin found in Monsanto's Yield Guard and Syngenta's Bt 11 corn varieties is called Cry1AB. In 1998, an FDA researcher discovered that Cry1Ab shared a sequence of 9-12 amino acids with vitellogenin, an egg yolk allergen. The study concluded that ' he similarity... might be sufficient to warrant additional evaluation."19 No additional evaluation took place.20

Cry1Ab is also very resistant to digestion and heat.21 It is nearly as stable as the type of Bt-toxin produced by Starlink corn. Starlink was a GM variety not approved for human consumption because experts believed that its highly stable protein might trigger allergies.22

Although it was grown for use in animal feed, it contaminated the US food supply in 2000. Thousands of consumers complained to food manufacturers about possible reactions and over 300 items were subject to recall.

After the Starlink incident, expert advisors to the EPA called for "surveillance and clinical assessment of exposed individuals" to "confirm the allergenicity of Bt products."23 Again, no such monitoring has taken place.

Help put a stop to irresponsible biotechnology - CLICK HERE NOW!

Parkinson's Disease linked to Pesticides

-Exposure to pesticides is associated with a significantly increased risk of developing Parkinson's Disease. This is according to a study published in the September issue of the journal Archives of Neurology.

· Parkinson's Disease is a degenerative brain disorder in which dopamine-producing nerves in certain areas of the brain lose function, leading to movement impairment and paralysis. Parkinson's Disease afflicts almost one million individuals in the United States and affects almost one percent of the population over 55 years of age. Parkinson's Disease usually occurs in people over 60 years of age but can start at any age between 35 and 85 years of age.

Certain occupations have been thought to have higher rates of Parkinson's Disease but the associations have not been consistent. We believe that certain chemicals can damage the brain and exposures to these chemicals can cause Parkinson's Disease. The authors of this study sought to clarify the risks of occupational exposures and the development of Parkinson's Disease.

Researchers analyzed data for 519 patients with Parkinson's disease and 511 control subjects.
The study showed that welders and people that use welding solvents (chemicals) such as carbon tetrachloride and trichloroethylene do not have an increased risk of developing Parkinson's Disease.

The study also showed no increased risk of developing Parkinson's Disease in people whose occupations include painting, soldering, machining, or using glue or adhesives, woodworking, and stripping wood or paint.

The study concluded that subjects who ever used pesticides had a 90% increased risk of developing Parkinson's Disease.

Occupational exposure to three specific pesticides, organochlorine 2, 4-dichlorophenoxyacetic acid, paraquaand permethrin were associated with a 300% increased risk in developing Parkinson's Disease.

This is an important study. It shows us that there is a risk with certain chemicals (pesticides) and the development of Parkinson's Disease.
It is likely that these compounds are toxic to the brain.

The first compound 2,4-dichlorophenoxyacetic acid was the active ingredient in Agent Orange.
Exposure to the other compounds is more likely, permethrin is used to repel misquotes and paraquat is the most common herbicide (weed killer).

This study shows us that there is a risk from these compounds and we should be very cautious and avoid exposure to them.

Cristopher Geiler, M.D.
October 1st 2009
Arch Neural. 2009;66:1106-1113

http://www.medicues.com/news/parkinsons-disease-linked-to-pesticides/

"Pesticides May Increase Parkinson's Risk"

Posted By Dr. Mercola May 14 2000

People exposed to bug sprays in the home may have a higher risk of Parkinson's disease, an incurable neurological disorder. The study is the first to show that exposure to pesticides in the home - may lead to Parkinson's, although other studies have suggested that exposure to the chemicals at work is a risk.

The researchers studied 500 people newly diagnosed with the disease, which is characterized by tremor and problems With walking and balance. People who had been exposed to pesticides were twice as likely to develop Parkinson's disease as people not exposed to pesticides. This study is the largest yet of newly diagnosed individuals with Parkinson's disease and it is the first study to show a significant association between home pesticide use and the risk of developing Parkinson's disease," Nelson said in a statement.

Parkinson's patients were more than two times as likely to have been exposed to insecticides in the home. People exposed to herbicides also had a higher risk, but exposure to insecticides in the garden and to fungicides did not seem to be associated with the disease. Parkinson's occurs when brain cells that produce dopamine, an important neurotransmitter (message-carrying chemical), are destroyed in a part of the brain known as the substantia nigra.

Annual Meeting American Academy of Neurology in San Diego May 9, 2000

Dr. Marcola's Comments:

Another reason to avoid these nasty chemicals. However, even worse than Parkinson is the damage that these chemicals cause to the developing fetus. All pregnant women need to be obsessive and take as many efforts as possible to avoid these chemicals while they are pregnant.

Related Articles:

Pesticides Linked To Stillbirths

Pesticides May Decrease Male Fertility

Pesticides and Aggression

http://articles.mercola.com/sites/articles/archive/2000/05/14/pesticides-parkinson.aspx

"Agriculh.1ral Pesticides Linked to Miscarriage"

Posted By Dr. Mercola February 28 2001

About 19,000 fetal deaths occur in the United States each year, and the causes remain a significant public health problem. Among known risk factors are smoking, advancedage among pregnant women and previous history of fetal deaths.

In the past, few epidemiological studies of pesticide exposure and birth defects have considered timing of possible exposures. And now it appears pregnant women living close to farms where pesticides are sprayed on fields may have an increased risk of having a fetus die due to birth defects.

This is the first study to our knowledge of pesticides and pregnancy in which exposures were in close proximity to the subjects and the verification of pesticide use was objective, not relying on people's memories of what they might have been exposed to.

Researchers found a slight increase of fetal death due to birth defects when pesticides were applied near where the pregnant women lived.

That span -- much of the first trimester -- appears to be a special window of vulnerability for birth defects, just as earlier research has suggested. If the women were exposed during the 3rd and 8th week of pregnancy -- the point when the fetal organs are forming -- the fetus seemed to be the most vulnerable to the effects of pesticide exposure.

The association increased for women living within 1 square mile of the field where pesticide application occurred.

The take home message is clear:

Living close to areas where agricultural pesticides are applied will boost the risk of fetal death due to birth defects.

Epidemiology March 2001;22:148-156

Dr. Mercola's Comments:

You don't need to have a medical degree to know that anything that kills insects and other living creatures is not likely to be very good for developing babies. One of the most important things a pregnant woman can do is avoid this chemicals as if her baby's life depended on it. I would also encourage you to review the first link for practical alternatives to pesticides.

Related Articles:

Alternative to Using Pesticides
Pesticides Linked to Stillbirths
Pesticides May Increase Parkinson's Risk
Pesticides May Decrease Male Fertility
Exposure to Pesticides Linked to Learning Problems

Pesticides Increase Breast Cancer Risk

http://articles.mercola.com/sites/articles/archive/2001/02/28/pesticides-miscarriage.aspx

"Pesticides May Decrease Male Fertility"

Posted By Dr. Marcola January 02 2008

On-the-job exposure to pesticides-may reduce sperm quality, according to results of a study conducted in couples seeking in vitro fertilization (IVF) therapy. Fertilization rates were significantly decreased for couples with paternal pesticide exposure.

Despite public concern over the effects of pesticides and other chemicals on reproductive health, data on these issues remains sparse and limited, according to the researchers. Sperm from men with either high or moderate on-the-job exposure to·pesticides was associated with a 78% and 48% decline in IVF success rates, respectively, compared with sperm from unexposed men.

Overall, the authors identified 16 couples in which male partners were exposed to moderate or high levels of pesticides at the workplace. Occupations with high pesticide use included fruit or flower harvesting, contracting, livestock, poultry or dairy farming, and gardening.

The authors stress that because most individuals were exposed to multiple pesticides with various active ingredients, it is impossible to draw conclusions as to which chemical may be responsible for the observed effect. They add that exposure to other workplace contaminants, such as organic solvents, metal dust/fumes, or welding fumes had no significant effect on male infertility.

The Lancet August 7,1999;354:484-485

Dr. Mercola's Cominent

One powerful argument to eat organically. Pesticides are exceptionally powerful hormone mimics that can have devastating consequences on our exceptionally delicate reproductive processes. Yes, organic food is more expensive, but can one put a price on the ability to successfully reproduce? It was interesting to note that other toxic insults, such as heavy metals and organic solvents did not produce fertility impairment.

http:l/articles.mercola.com/sites/articles/archive/2008/01/02/pesticides-may-decrease-male-fertility.aspx

The Safety of Inert Components in Pesticides Questioned

http://www.mercola.com/2006/aug/15/the_safety_of_inert_components_in_pesticides_questioned.htm

Fourteen states petitioned the U.S. EPA to require pesticide manufacturers to list all ingredients on their product labels.

They hope to force manufacturers to disclose even "inert" ingredients in pesticides that, according to state officials, still pose health hazards.

The request came in the wake of a 10-year EPA study of all pesticides used in the United. States.

The review evaluated 237 pesticide ingredients, and will result in a ban on the pesticide lindane, which can cause seizures and brain tumors. Agency officials claimed that the review practically guarantees safety, but critics believe that the review process was tainted with political maneuvering and does not go far enough.

Currently, the EPA only requires that "active" toxic ingredients need to be listed on labels. However, the "inert" ingredients that are not specifically designed to kill pests and weeds, such as organophosphates and carbamates, are sometimes known or suspected causes of cancer, nervous system disorders, birth defects, liver and kidney damage, and environmental problems.

These ingredients can make up 99 percent of a pesticide.

Dr. Mercola's Comment:

It is no mystery that pesticides are toxic to human life; 60 percent of herbicides, 90 percent of fungicides and 30 percent of insecticides are known to cause cancer.

- Pesticide use has increased 50-fold since 1950. and 2.5 million tons of industrial pesticides are now used each year.
* Many of the chemicals used in pesticides are persistent soil contaminants, whose impact may endure for decades, and adversely affect soil conservation.

Numerous studies have shown that pesticides may contribute to:

- Infertility
* Birth detects, miscarriages and stillbirths
* Learning disorders
- Aggressive behavior
- Cancer of the breast, prostate and lymphatic system

And evidence only continues to mount regarding the harm pesticides can do to your health. This is especially true for the farmers we rely on for our food. But they're not the only ones in danger; the average person carries around at least 13 harmful pesticides in their bodies, if not **more.**

The EPA already requires prescription drugs, foods and cosmetics to list inert substances, so not requiring it for pesticides makes no sense whatsoever. As the Attorney General of New York, Eliot Spitzer, pointed out, why require a listing of the ingredients that harm insects, but not those that harm people?
At least lindane, the carcinogenic pesticide that is currently also still used to treat head lice and scabies, will get the boot when its current license ends. But some EPA staff scientists worry nothing much will change following this 10-year review. They think that the corrupted and compromised FDA will continue to bend under pressure from big business interests.

While all the political wrangling is going on, please take responsibility for your own health by following some simple steps that can reduce your exposure to pesticides:

Toxic Sprays are a Political Issue

By E.G. VALLIANATOS
GUEST COLUMNIST Seattle PI
Thursday, January 5, 2006

After a 1998-2003 moratorium on testing pesticides on humans, the U.S. Environmental Protection Agency is about to legalize the abhorrent practice. One can probably tolerate human testing for medicines, but why should a civilized society test farm sprays on humans?

Most of these poisons came to agriculture straight from World War II. That fact ought to have been sufficient to ban them, thus avoiding the threat of the contamination of food and drinking water.

But agribusiness uses pesticides as lubricants in its power grab in rural America. The poisons farmers spray control insects, crop diseases and grasses oniy as an afterthought. This is because these toxins primarily are political. They enable landowners to be sole masters of very large farms and plantations while they empty rural areas of small family farmers.

Agribusiness maintains its power by co-opting the federal and state governments, including land grant universities, in making sprays the emblems of science and modernization.

So the owners of pesticides resort to "studying" the effects of their sprays on animals, most of the time showing the sprays innocent of cancer or other deleterious effects.

But the history of pesticides testing is full of fraud and uncertainty about their safety when industry is performing the tests. Nevertheless, the EPA has been approving pesticides for farms and lawns. Now the chemical industry wants t.o speed up that process of approval for their gold-making toxins by means of testing them on humans.

The EPA is going along with this unethical proposal because it has no choice. George W. Bush, and corporations that brought him to power, see nothing wrong in violating international norms such as the Nuremberg code that warns against falling back into the inhuman practice of making humans experimental animals.

The EPA's proposed rule says no pregnant women or children can be tested with pesticides but there's no guarantee that studies done on pregnant women and children here or abroad would never be accepted by the EPA. Also, how are powerless migrant farm workers, prisoners or other vulnerable people going to resist coercion or payment for becoming testing subjects?

The withdrawal of the EPA from its national mission of protecting public health and nature encourages similar sleazy policies among state governments. Governors have been "requesting" the EPA's permission for using untested or not completely approved pesticides. Sometimes, the spraying of these materials under fake "emergency" provisions covers huge acreage in more than one state for a year or more.

It's about time Americans become outraged about the EPA's unethical proclivities downgrading our sense of justice while threatening our health and the environment. California Gov. Amold Schwarzenegger signed a bill last October prohibiting experimental pesticides in schools. That is a first step that responsible officials and the rest of us must take to end our tolerance of the political influence of agribusiness at the EPA and state governments.

We must resist the human testing of dangerous sprays, in time replacing them with the biological time-tested methods of family farmers.

E.G. Vallianatos, former EPA analyst, is the author of the just-published "This Land is Their Land: How Corporate Farms Threaten the World" (Common Courage Press) and the forthcoming "The Passion of the Greeks

http://www.seattlepi.com/opinion/254457_epa05.html

Judge orders halt to spraying for moth

John Cote, Chronicle Staff Writer Friday, April 25, 2008

The state's efforts to eradicate the light brown apple moth was dealt a setback Thursday when a judge ordered a halt to aerial spraying in Santa Cruz County until state agriculture officials conduct a comprehensive review of the chemical spray's environmental impact.

A short time later, Gov. Arnold Schwarzenegger announced separately in Sacramento that plans to spray iii 12 counties where the moth has been found would be put on hold at least until Aug. 17 to allow for a series of safety tests to be completed.

U.S. and state agriculture officials had planned aerial spraying in Santa Cruz and Monterey counties in June and in every county in the Bay Area starting in August in a campaign to eradicate the invasive moth, which they say threatens more than 200 crops in the state worth multimillions of dollars.

What effect Schwarzenegger's decision would have on plans to spray the Bay Area remained unclear Thursday, but Department of Food and Agriculture Secretary AG. Kawamura said the ruling by Santa Cruz County Superior Court Judge Paul Burdick "threatens the safety of our agriculture, environment and economy" and said he would appeal it immediately.

"The light brown apple moth is a serious threat not just to Santa Cruz but to the entire state, and the method we are using is the safest, most progressive eradication program available," Kawamura said in a statement.

The spraying plan calls for the use of pesticides containing synthetic insect pheromones and other ingredients. Critics questioned whether the spray is safe after more than 6oo people in Santa Cruz and Monterey counties reported respiratory problems after spraying there last autumn during the first phase of the campaign against the moth.

Soon afterward, the county and city of Santa Cruz sued, arguing that an environmental review should have been done first.

Burdick's ruling was a victory for environmentalists who argued the state was moving ahead without adequately assessing health and environmental risks. Critics of the spraying plan hoped it would serve as a model for judges in other counties considering similar lawsuits.

The judge rejected arguments by agriculture officials that the moth infestation was an emergency, a legal category that would permit them to proceed with the second round of spraying before completing an environmental impact report. Environmental impact reports can take more than a year to complete.

The ruling in a packed courtroom triggered jubilation among opponents of the spraying program. "There was joy, applause, tears, the works," said Dick Andre of the California Alliance to Stop the Spray. "I'm delighted. I, of course, realize that it isn't over yet. But we do have some **time now."**

Schwarzenegger made his decision to delay spraying after a meeting with state Seii. Carole Migden, D-San Francisco, and a delegation of Marin County officials and environmentalists.

The governor said he remains convinced the chemicals used for spraying are safe but called for the temporary halt to allow for a series of tests on possible eye, inhalation, respiratory and other potential irritants. A U.S. Department of Agriculture contractor will conduct tests in Texas on several chemicals being considered for the next round of spraying.

"I am confident that the additional tests will reassure Californians that we are taking the safest, most progressive approach to ridding our state of this very real threat to our agriculture,

environment and economy," Schwarzenegger said.

Five lawmakers have introduced bills in Sacramento to control aerial spraying, inCluding one by Assemblyman Mark Lena, D-San Francisco, that would require the same environmental review in all Bay Area communities that Burdick orifered for Santa Cruz County.

"Too much is at stake to go forward without all of the facts," Lena said Thursday.

San Francisco Mayor Gavin Newsom, who sent a letter to Schwarzenegger March 20· calling for the full risk assessment of the spraying, welcomed the postponement and new tests as a step in the right direction.

"It's time to slow down, put on the brakes and take a hard look at the health impacts before we move forward with the spraying," said Newsom spokesman Nathan Ballard. "We'll have to wait and see what those results are."

LIGHT BROWN APPLE MOTH

Problem: The tiny moth, a native of Australia and much smaller than a penny, has been found in the Bay Area. Its larvae feed on more than 2,000 types of plants and trees, including 200 fruit and vegetable crops.

Eradication: Officials plan to spray a pesticide - a synthetic moth pheromone - over Bay Area · cities to eradicate the moth by disrupting its mating. Spraying was expected to start Aug. 1.

Spraying opponents: They say human health problems have been reported and that the spray has not undergone adequate testing.

More information

--California Department of Food and Agriculture: *Iinks.sfgate.com/ZCLW*

-- Anti-spray groups: *www.playnotspray.org* and *www.CASSonline.org*

http://articles.sfgate.com/2008-04-25/news/17145141_1_light-brown-apple-moth-aerial-spraying-delay-spraying

FRIDAY,AUGUST 20. 2010

Pesticides linked to ADHD in UC study

Up to 7 percent of U.S. kids show signs of hyperactive disorder

By Thomas H. Maugh II
Los Angeles Times

A growing body of evidence is suggesting that exposure to organophosphate pesticides is a prime cause of attention deficit hyperactivity disorder. The findings are considered plausible to many experts because the pesticides are designed to attack the nervous systems of insects. It is not surprising, then, that they also should impinge on the nervous systems of humans who are exposed to them.

Forty organophosphate pesticides are registered in the United States, with at least 73 million pounds used each year in agricultural and residential settings.

ADHD is thought to affect 3 percent to 7 percent of U.S. children, with boys affected more heavily than girls. Many experts believe its incidence has increased sharply in recent decades, but critics attribute the increased incidence to overdiagnosis. Some attribute the increase to the greater use of pesticides.

The new study, reported Thursday in the journal Environmental Health Perspectives, examines the effects of both prenatal and childhood exposure to the pesticides, which are widely used in the United States to control insects on food crops. Epidemiologist Brenda Eskenazi of UC Berkeley and her colleagues have been studying more than 300 Mexican-American children living in the heavily agricultural Salinas Valley. Because they live in a farming community, the children are more likely than others to be exposed to the pesticides, but the problems resulting from environmental exposure are often first seen in those with the highest exposure.

Researchers tested for levels of pesticide metabolites in urine in the mothers twice during their pregnancies and several times in the children. They then tested the children at ages 3 ½ years and 5 years for attention disorders and ADHD, using the mothers' reports, performance on standardized computer tests and behavior ratings from examiners.

After correcting the data to account for lead exposure and other issues, they found that each tenfold increase in pesticide levels in the mothers' urine was associated with a fivefold increase in attention problems. The effect was more pronounced in boys than in girls.

Santa Clara County Planning Office
County Government Center, East Wing
70 West Hedding Street
San Jose, CA 95110
FAX 408-288-9198
davidrader@pin.SQ;Q_Qll&fU

06-25-12

Response to Proposed EIR report for West Nile Virus pesticide fogging.

West Nile Virus Fogging is Public Fraud and Endangerment

There is NO imminent threat to humans from West Nile Virus (WNV) **!** In 2011 there were 158 alleged WNV infections reported, and 9 deaths allegedly related to the WNV, in the entire State of **California. Out of a population of 38 million people, this doesn't even approach a fraction of one per cent of the population. Furthermore, just because WNV is detectable in a person's blood does not** mean they are sick or have died from it. 80% of all persons infected *have* NO SYMPTOMS. That means that a large percent of these persons (111) likely were sick or died from other, concomitant **causes (ie: flu, which causes an estimated 8,000 deaths per year in California, or pneumonia, as many of these persons are immunocompromised to begin with). Pesticide poisoning also causes many** of the same symptoms as the WNV. According to the Journal of the American Medical Association (Vol. 284. No. 4-July 28, 2000) *over* 250,000 patients a year are killed by the medical profession.

- 7,000- **medication errors** in hospitals
- 20,000- **other errors** in hospitals
- 80,000- **nosocomial infections** in hospitals
- 106,000- **adverse** effects **of medications**

This further reduces the probable actual number of deaths, 6, allegedly attributed to WNV.

WEST NILE VIRUS

Scientific facts reveal that the West Nile Virus is absolutely NOT a significant threat to human beings, and, compared to the risk of pesticides, in NO way warrants the aerial dispersion (fogging) of toxic **pesticides on residents of Santa Clara County.**

Out of the entire population of 38 million people in the State of California in 2010, as of June 22, 2012, there is allegedly 1 case of human infection with West Nile Virus, in Kern County, with ZERO deaths associated with the WNV. These facts come from the official State of California website on West Nile Virus at http://www.westnile.clWJQliL.

Some facts about West Nile Virus:
1) Approximately 80% of persons infected with WNV have NO symptoms!
2) Approximately 20% of those infected get mild, flu-like symptoms!

3) Less than 1% of those persons infected suffer from any serious symptoms such as encephalopathy, **and that is generally in elderly and immune-compromised individuals.**

Furthermore, the spraying of pesticides to kill adult mosquitoes, known as adulticide, is one of the most ineffective methods of mosquito abatement. This method also presents the greatest danger to humans and non-target life-forms.

GENERAL PESTICIDE FACTS:

- **Pesticides are NOT safe. They are designed to be toxic and kill. Many are known carcinogens and endocrine disruptors that can cause cancer, infertility, and a host of other diseases.**
- **Pesticides suppress the human immune system, increasing the risk of contracting the WNV.**
- **Pesticides may compromise the blood-brain barrier, thus increasing the risk of encephalopathy (infection of the brain). Dr. Dennis Goode, of the Dept. of Biology at the University of Maryland states, ' In general, WNV is a mild disease. It only becomes serious encephalitis if the virus can** cross the blood-brain barrier. Among the agents that impair the blood-brain barrier in young rats are pyrethroid, organophosphate, and organochlorine pesticides. Thus, insecticide spraying has the **potential to worsen the process of WNV infection."**

Pyrenone 25-5

is one of the pesticides that have been sprayed. Pyrethroids are synthetic versions of pyrethrin. Pesticides also kill off the natural predators of mosquitoes, which take much longer to regain their **numbers.**

- **Mosquitoes can also develop immunity to pesticides, making it more difficult to control them.**

"An Open Letter by Concerned Physicians and Scientists" EXECUTIVE SUMMARY MASSIVE CHEMICAL PESTICIDE SPRAYING AGAINST MOSQUITOES CARRYING WEST NILE VIRUS WILL HAVE MANY SERIOUS DETRIMENTAL CONSEQUENCES, ESPECIALLY ON HUMAN HEALTH. THE RAMIFICATIONS OF SUCH ACTION WILL RESULT IN FARREACHING PUBLIC HEALTH, FINANCIAL, LEGAL AND OTHER PROBLEMS.

INDISCRIMINATE SPRAYING OF PESTICIDES, ESPECIALLY IN HEAVILY POPULATED URBAN AREAS, IS FAR MORE DANGEROUS TO HUMAN HEALTH AND THE NATURAL ENVIRONMENT THAN A RELATIVELY VERY SMALL RISK OF WEST NILE VIRUS.

THE OVERALL WELL-BEING OF OUR POPULATION IS DECLINING AND WILL CONTINUE TO DECLINE IF WE CONTINUE TO ALLOW OUR COMMUNITIES TO BE EXPOSED TO PESTICIDES. THOSE INDIVIDUALS WHO ARE MOST VULNERABLE IN THIS CHEMICAL ACTION AGAINST MOSQUITOES INCLUDE: CHILDREN, PREGNANT WOMEN, THE ELDERLY, CHEMICALLY SENSITIVE AND IMMUNOSUPPRESSED INDIVIDUALS, SUCH AS PATIENTS WITH AIDS AND CANCER, AND PEOPLE SUFFERING WITH ASTHMA AND OTHER ALLERGIES.

THERE SHOULD BE A WIDESPREAD AWARENESS OF THE FARREACHING PUBLIC HEALTH, ECOLOGICAL, ENVIRONMENTAL, ECONOMIC AND LEGAL RAMIFICATIONS OF SUCH MASSIVE

SPRAYING. THERE ARE OTHER, SAFER APPROACHES THAT CAN BE USED TO CONTROL AND PREVENT THE WEST NILE VIRUS ENCEPHALITIS.

USING PESTICIDE SPRAYING TO PREVENT WEST NILE VIRUS ENCEPHALITIS MAY BE COMPARED WITH "FRIENDLY FIRE" – KILLING ONE'S OWN FRIENDS WHILE INTENDING TO SHOOT AN ENEMY"

This paper also states that "Considering the cumulative multigenerational, and destructive impact of pesticides, especially on children's development and behavior, it **is frightening to imagine the delayed consequences of repeated pesticide spraying. These consequences will be especially serious for those with allergies or weakened immune systems, cancer, those who are chemically sensitive, as well as for children and future generations."**

"West Nile Virus positivity could be a coincidental finding because the cause of death may have been some disease process unrelated to the West Nile Virus. Thousands of individuals who had no **symptoms tested positive for West Nile Virus antibodies, proving that they were exposed to the virus. They never became ill and were not even aware that they were infected with West Nile Virus until they were tested."**

"Additionally, not only will repeated spraying fail to eradicate the mosquitoes, the spray program leads **to the survival of those mosquitoes resistant to pesticides. This resistance is passed on to new generations, leading to endless cycles of increased pesticide spraying each year – the "pest mill".**

"Pesticide residues are found everywhere –– in air, water, soil, rain, fog, snow, food, livestock, wildlife, and body tissues of human beings. Chemical pesticides and other pollutants are constantly being woven into our bodies. They have been detected in the body tissues of EVERYONE tested, **regardless of country, place of origin, residence, occupation, age, sex or social class."**

' It is known (6-31, 34-38), however, that exposure to chemical pesticide residues, especially if chronic, even at low levels, can cause:
genetic damage
birth defects
disruption of hormone regulation
defective sexual development
brain damage
Parkinson's Disease
allergies
exacerbation of asthma
cancer
and many other health problems.

Even a single exposure to pesticides can trigger:
latent environmental sensitivities, allergies, chronic fatigue syndrome, behavioral changes such as irritability, anxiety, depression, aggressiveness and personality changes, concentration difficulties, memory and learning problems, hormone disruption, erectile dysfunction, Joss of libido, other health problems.

"Especially disturbing is the finding that predisposition to cancer and other health problems due to genetic damage related to pesticide exposure, may be transmitted by affected individuals not only to their offspring, but also to further generations."The World Resources Institute's report (IS) entitled "Pesticides and the Immune System: The Public Health Risks," documents the impact of widely used **chemical pesticides on the immunity of animals as well as humans. Their conclusion, based on an extensive body of experimental and epidemiological research from around the world is that:**

Impairment of the immune system by chemical pesticides can lead to allergies, autoimmune disorders such as lupus and cancer. It may also lead to infections to which one may be normally resistant. In **other words, exposure to spraying with chemical pesticides may actually increase the risk of developing West Nile Virus encephalitis**

- 'pyrethroids should be considered to be hormone disrupters"

"It is urgent to educate the general public, media and decision makers that:

chemical pesticides, including those used to prevent West Nile Virus encephalitis in New York, cause much more health damage and are much more harmful to public health than the extremely small health risk presented by West Nile Virus.

the West Nile Virus is carried by birds and spread by mosquitoes, and is not an especially Dangerous, disease. The only vulnerable people are those who have reduced immunity – they are **much more susceptible to any infection, exotic or not.**

ultimately, no one can avoid exposure to those pesticides. We all breathe the same air and live on the same planet.

there are safe approaches that can be used to control and prevent West Nile Virus encephalitis.

A combination of the dramatic response in the media, lack of experiences of present generations of North American health professionals with epidemics other than AIDS, undoubtedly have **contributed to the over-blown and fearful response to this relatively insignificant virus. As mentioned previously, thousands of people carrying antibodies against West Nile Virus never experienced any kind of symptoms although they were exposed to it."**

"If we do not stop the indiscriminate use of pesticides, we will continue to endanger our environment and the quality of our own health and more crucially, the healthy physical and mental development of **our children and future generations.**

Pesticides are designed to kill. We share the same life blueprint with other life forms, including **mosquitoes. All chemical pesticides are also harmful to humans.**

For this reason, the indiscriminate mosquito spraying must be stopped and the unnecessary use of chemical pesticides needs to be abandoned and outlawed. Such an action will benefit EVERYONE including all stakeholders and their families – we all breathe the same air, and live on the same **planet"**

See full article at: www.beyondpesticides.org/mosquito/documents/ Open%20Letter.pdf

The Pesticides

The pesticide used for ground applications in 2005 was Pyrenone 25-5, which consists of:

5% pyrethrins
25% piperonyl butoxide (PBO)
70% unknown.

According to the EPA pyrethrins cause more instecticide poisenings than any other class of pesticides **except one.**
PBO is dassified as a possible human carcinogen because it caused tumors in laboratory tests. Researchers at the Duke University School of Medicine have discovered that PBO disrupted neurological development pathways- The study finds that the disruption of this critical pathway "may be the **molecular basis for profound developmental defects in children exposed in utero to PBO."**

Pyrethrins disrupt the normal functioning of sex hormones while PBO affect the functioning of hormone related organs.

However, Beyond Pesticides has long called for going beyond risk assessment with alternatives assessment in environmental rulemaking, which creates a regulatory trigger to adopt alternatives and drive the market to go green. The alternatives assessment approach differs most dramatically from risk **assessment in rejecting uses and exposures deemed acceptable under risk assessment calculations, but unnecessary because of the availability of safer alternatives.**

Increasing rates of chronic diseases linked to toxic chemical exposure, including cancer, asthma and infertility, have created an urgency to enact policies to get harmful chemicals off the market. To learn **more about how pesticides are linked to serious health concerns, visit Beyond Pesticides E..esticide. Induced Diseases database.**
http·//www.beyondpesticides.org/dailynewsblogLogging

There is a principal at Law known as [11]Criminal negligence.The most serious form of this crime is when a person who has knowledge, ignores that knowledge, with the result of individuals being exposed to otherwise avoidable dangers. This is called "willful negligence". The purpose of this paper is to establish a level of knowledge of facts **which will make it reasonably known to any person reading them that there is no significant threat to the residents** of Santa Clara County from the West Nile Virus, and that any risks from the WNV are far outweighed by the **dangers of pesticide exposure.**

Keith E. Howe, D.C.

71N. San Tomas Aquino Rd.

Campbell, CA 95008

tahac408@yahoo.com

(408) 871-8136

Keith E. Howe, D.C.- Educational Background,

As a Doctor of Chiropractic I have the following educational background. I was required to complete the following just to be accepted into chiropractic college.

Pre-Requisites:

• Candidates for admission to Palmer College must have completed at least 60 semester hours or 90 quarter hours leading to a baccalaureate degree in an accredited college or university program.

Required courses:

General Biology (lecture and lab) 1 academic year (6 semester hours)
Inorganic Chemistry (lecture and lab) 1 academic year (6 semester hours)
Organic Chemistry (lecture and lab) -1 academic year (6 semester hours)
Physics {lecture and lab) - 1 academic year (6 semester hours)
English/Communication-- 6 semester hours
Psychology 3 semester hours
•. Social Sciences/Humanities 15 semester hours

I completed all of these courses with a 4.0 GPA (the highest possible)

I then went on to complete the following
The Palmer College Curriculum (Doctorate program):

• Five academic year program (10 semesters). Can be completed in 3 and 1/3 calendar years on the trimestral system (3 semesters per calendar year).

Minimum of 4,620 classroom hours.
Minimum of 308 semester credit-hours.
First Trimester: (29 hours)
*Philosophy I
*Neuroanatomy I and Lab
*Principles of Anatomy
*Gross Anatomy I and Lab
*Embryology
*Biochemistry I and Lab
*Neurophysiology I and Lab
Second Trimester: (29 hours)
*Philosophy II Ethics
*Gross Anatomy II and Lab
*Spinal Anatomy and Lab
*Cellular Physiology and Lab
*Neurophysiology II and Lab
*Endocrinology and Lab
*Biochemistry II and Lab
*Introduction to Scientific Research
Third Trimester: (30 hours)

*Organ Histology and Lab
*Neuroanatomy II
*Cardiovasculopulmonary Physiology and Lab
*Neurophysiology III
.J.·Pathology -- Fundamentals
*Microbiology and Lab
*Immunology and Communicable Diseases
*Palpation

Fourth Trimester: ⁞31 hours)
*Philosophy III -- History of Chiropractic
*Digestive Physiology and Nutrition
*Renal Physiology
*Public Health
*Pathology -- Systems
*Radiology I -- Technology and Protection
*Toggle-Recoil Technique
*Instrumentation

Fifth Trimester: (31 hours)
*Toxicology
*Radiology II -- Osseous Interpretation
*Cervical Technique
*Neuromusculoskeletal Diagnosis I
*Physical Diagnosis
*Clinical Psychology

Sixth Trimester: ⁞30 hours)
*Philosophy IV Subluxation Complex and Health
*Radiology III Advanced Interpretation
*Thoraco-lumbar Technique
*Pelvic Technique
*Neuromusculoskeletal Diagnosis II
*Geriatrics
*Obstetrics and Pediatrics

Seventh Trimester: 130 hours)
*Radiology IV -- Positioning
*Technique Principles and Practice
*Extremity Adjusting
*Visceral Disorders and Laboratory Interpretation
*Gender Disorders
*Clinical Methods
*Emergency Procedures

Eighth Trimester: 130 hours)
"·Philosophy V -- Clinical Applications
*Spinal Biomechanics
*Jurisprudence and Risk Management
*Basics of Practice

*Insurance Reporting
*Special Topics in Radiology
*Clinical Case Correlations I
*Clinic I

Ninth Trimester: (32 hours)

*Introduction to Finance
*Practice Management
*Business Communications
*Clinical Case Correlations II
*Clinic II

Tenth Trimester: (28 hours)

*Clinical Case Correlations III
*Clinic III

Santa Clara Valley Audubon Society

July 6nd, 2012 *via email*

David Rader
Santa Clara County Planning Office
david.rader@pln.sccgov.org

Re: Scoping Comments: Vector Control District Integrated Mosquito and Vector Management Program

Dear Mr. Rader,

The following are scoping comments are submitted by the Santa Clara Valley Audubon Society for the Santa Clara County Vector Control District Integrated Mosquito and Vector Management Program Programmatic Environmental Impact Report.

With over 3,000 members, the Santa Clara Valley Audubon Society aims to protect and nurture native birds and their habitats, primarily within Santa Clara County.

We ask for the PEIR to study and evaluate the impacts of the following:

1. Chemicals and Insecticides

Please describe in detail which chemicals will be used during the chemical component phase of vector management with description of when the chemicals will be used, how much will be distributed, and what the limitations will be with concern to threatened and or endangered species and all other fish, wildlife and avian species within the target areas. If organophosphates and petroleum distillate oils will potentially be used, please describe the impacts of these chemicals on water quality, on areas adjacent to spray zones, and on all wildlife species that occur in the county, including CA species of special concern. Please discuss short and long term impacts to habitats and ecosystems.

Please provide detailed description and a map for any and all No Spray buffers in the county. This includes no spray areas in compliance with regulations by the CA Department of Fish and Game (CDFG), National Marine Fisheries Service (NMFS), the currently updated CA State Water Resources Control Board Permit Regulations, and all other regulatory agencies. The map should be detailed enough for the public to understand.

2. Biological Control
Please study the direct and indirect effects of using mosquito fish as a biological control method as this implementation can result in incidental take of non-target species and/or adversely affect the food

22221 McClellan Road, Cupertino, CA 95014 Phone: (408) 252-3748 * Fax: (408) 252-2850
email: scvas@scvas.org * www.scvas.org

available to listed species within the target zone. Please evaluate direct and indirect negative impacts of using Bacillus sp. for biological management of mosquito larvae. Please evaluate the potential for using avian species (swallows, raptors) in vector management.

3. Areas of Controversy
We ask that there be a section within the PEIR that acknowledges areas of controversy in relation to the impacts of control methods on biological resources and ecosystems health, particularly the concerns in relation to the chemicals to be used for vector management and the adverse affects of such use.

4. Dredge and Fill Activities
Please describe, quantify, and evaluate impacts of dredge or fill activities for the purpose of vector management.

5. Species Susceptibility
Please provide in the final PEIR a rare and endangered species susceptibility chart that identifies which native and endemic species within Santa Clara County will be prone to adverse effects of vector control management practices. Please consider vernal pool tadpole shrimp, bay checkerspot butterfly, steelhead and other salmon species, California tiger salamander, California red-legged frog, western pond turtle, white-tailed kite, bald eagle, northern harrier, golden eagle, American peregrine falcon, California black rail, California clapper rail, western snowy plover, California least tern, black skimmer, burrowing owl, long-eared owl, short-eared owl, loggerhead shrike, salt marsh common yellowthroat, Bryant's savannah sparrow, yellow warbler, Alameda song sparrow, tricolored blackbird, salt marsh wandering shrew, salt marsh harvest mouse, pallid bat, western red bat, San Francisco dusky-footed woodrat, and the American badger.

6. “Other Vertebrate Vector Control”
Please list all the species that may be considered rodent or wildlife that pose a threat to public health and safety and the type of situation that management activities for these species would be required. Please provide measurable criteria that would trigger this action.
Please describe any use of second-generation rodenticides and evaluate the potential for secondary poisoning.

Thank you for the opportunity to comment on the Vector Control Management Notice of Preparation. Please keep Santa Clara Valley Audubon Society informed, and contact us if you have any question.

Sincerely,

Hillary Richardson
SCVAS Intern
Hprichardson1@gmail
.com
22221 McClellan Road
Cupertino, CA 95014

p. 2 of 2

June 28, 2012

JWJr David Hader
Santa clara Planning Offic.e
70 West Hedding
San Jose califbrnia 95110

Dear JWJr Hader,

I am writing regarding the Spraying of Pesticides on residents of this county,
Our group has met with the Board of "Supervisors, Vector persons, city counc:il and. many more groups of concerned. people, Now I am writing to you about the problem,

vlhen I talked to Jvlr Russel Parman, biologist for Vector and he informed me that the problem is the green pools from forecloused property or neglected by owners , that this problem was the cause of the Jvlosquito problem, JWJr Parman also said. that Vector had. located 52.00 pools in the above condition,

!Yly question for JVlr Parman was if this is the problem that why was the title holder on these properties not held responsible to clean up or pay a ftne? Why did this neglect cause families and. private owned property to have a pesricide sprayed on them? His answer to me was. they did not do that, they spray,

Spr,aying of pesticide is causing the loss of our beneficial creatures that we need, plus the harm to humans with the intake of pesticide on our homes, yards, play equlptment etc,

Pesticide kills bees, lady bugs, lace wings, and dragon flies, to name a few,Theses are our friends and our helpers, I find. bees who lay on the ground. and. go around in circles, crazy, I do not see any ladybugs, lace wings,

Tfie pesticide business is a big business and it is way over used, They pse the same old pattern to sell it to the public, First with a bug of somekind. or a major health scare. Such as the lll'st Nile Virus. le have not had a major problem with the }lest Nile Virus. I think i.n the whole state we had 8 deaths and we do not know if the person had other problems also. Valley !''Jed ical had emergency areas set up to take the mass of people with this disease, that never happened,

Please consider these facts when you the public meeting June 28, 2012, I will be there,
Thank you, I rematn a concerned citizen••

Ruth E Cole

22221 McClellan Road, Cupertino, CA 95014 Phone: (408) 252-3748 * Fax: (408) 252-2850 email: scvas@scvas.org * www.scvas.org

From: margaret mori <margaretaloha49@yahoo.com>
Subject: **commets about PEIR for Vector**
Date: July 9, 2012 6:55:54 PM PDT
To: "david.rader@pln.sccgov.org" <david.rader@pln.sccgov.org>
Reply-To: margaret mori <margaretaloha49@yahoo.com>

Dear Mr. Rader and Planning Department:

Regarding the Notice of Preparation of Draft Programmatic Environmental Impact Report for S.C.C. Vector Control District

I spoke at the one meeting that was held on June 28th, but wanted to add further comments. It was only by chance that I knew that there would be a meeting. The majority of County residents don't typically browse the Planning Department website or Vector website, on the off- chance there will be
a meeting such as this.
It may not be a legal imperative that residents be notified about this Impact Report, but it should be an ethical one: all of us are affected or potentially affected bythe decisions which will be made.
It is not accurate to say that the public has been invited or informed to participate in this decision-making process; yet, again, these decisions have immediate and long-termconsequences for us all.

We have Certification by the National Wildlife Federation for Backyard Habitats.According to that certification our yard does not use chemical pesticides; and retains an acceptable amount of healthy nourishment and protection for wildlife.
Ergo, I do not give anyone permission to apply pesticides to my yard or property, or the surrounding geographic area.
We have a legal obligation to maintain our sidewalk; pay home-owner's insurance; & pay for our house & property; we should have a legal right to refuse pesticide application at any level, and of any kind, on that same sidewalk; on that same property. If our neighborhood streets or air are "fogged" then the drift is just as contaminating to our property and any and all wildlife, pets, and humans who reside here or seek shelter.
As I have stated at the June 28, 2012 meeting, we rescued a greyhound. Greyhounds are sensitive to pesticides and many chemicals. We and other rescue groups spend time and money protecting our greyhounds. This is another reason why we do not agree to the use of pesticides used in fogging.

Most County residents are not legally-allowed to pick up a pesticide, regardless of the whether it's been deemed "low" level, or not, and spray it at another animal or human being, no matter how hard they tried to justify it; no matter how sincerely they believed it to be necessary. If someone came up to any of you, your families, pets, or property, and said I have reason to believe you might have infected mosquitoes and so I've decided to spray...regardless of the potential for harm; regardless of your refusal to agree...you would be incensed. This is how many of us feel: completely flabbergasted that known and potential carcinogens; known human

irritants could be and are being used in these same ways. Whether the spray is low-level or not is irrelevant; it's being sprayed in our air, which is necessary for our survival. For many residents, it's like being asked to stop breathing until all the months of spraying/ fogging are over. Until Vector Control, the Planning Department, and any other governing body in our County and State has proved all ingredients to be safe for humans and domestic pets, let alone our eco-system, it should not be used.

I would encourage the Planning Department, along with Vector Control, to rethink its IPM Program.
The pesticides which have been used since the early 2000's in our County have not been safe for humans, pets, or the environment. These pesticides have not been tested on pets or humans. They have been applied, but not tested. I realize that they have been tested on a small number of rats; guinea pigs; some species of mosquitoes; a few birds, and a few dogs. Toxicity occurred. I can not find any tests or studies on a human population.
To state that the pesticides that Vector/ County used, and plan to use are safe for humans is just not true and cannot be based on anything factual.It is an assumption by the chemical corporations, and Vector Districts that "lower" levels of pesticides are o.k., but without statistical data (tests by independent agencies; reportson all affects) this is merely a hope that every human in our County will be unaffected by the pesticides. A "low" level does not mean a safe level. It does not mean a tested level.

Our family discovered, the hard way, that the pesticides used last, the Pyrenone combination, can be toxic to a sight-hound (dog). There was no reason that we should have had to watch our dog suffer the consequences of the "fogging." She had little chance of being affected by W.N. mosquitoes; & neither did we.There was no reason that we should have had to spend time imploring Vector and County Health representatives, and Supervisors for our County, to test her, and treat her for the pesticides. (which they would not do).
There was no reason that we should have had to pay Thousands of dollars to try and help her recover from the affects of these same low-level pesticides when we did not agree to the pesticide use; did not agree to our property and
house being contaminated...all in the hope that a few infected mosquitoes might be killed.
Her system reacted and couldn't recover. We did use our own (versus County/ Vector) money to try and combat the effects to her system. Humans in our County are affected, but Vector, the Health Department, and our
representatives on the Board of Supervisors have NO WAY to test and treat for pesticides.
The only emphasis has been on testing and killing W.N. infected mosquitoes. A low-risk threat in Santa Clara County/ Silicon Valley.

How is it justifiable that anyone else can assume this risk for all the pets and humans in our County?

Many people asked Vector, and our County representatives, to relocate them to other areas when there would be additional fogging, not as a precaution, but after they'd been affected by the fogging. Vector closed the public comment group after that, and would not test any human who was having physical reactions; pay for any medical treatments; and definitely refused to

pay to relocate those who have had their health compromised by the fogging.If the County has no way to test, or treat its human population, let alone the pets of these same tax-paying humans, then it is not ready to expose them to these same pesticides. It is not responsible or safe decision-making.
The County does not collect data on human symptoms, and it does not collect data on pet reactions.
Yes, there are ways to provide input on a national level, but for all of us who live here, work here, travel through the County, immediate reactions need treatment, and long-term reactions deservetreatment. The only answer so far available is to visit one's doctor or vet; this is unreasonable. How many people in Silicon Valley have free medical and veterinarian insurance? We don't;
we pay out of our pockets. And any treatment would only be palliative. Not preventative.
Both Bayer Chemical Corporation and now Central Life Sciences will not disclose the majority of the chemicals and ingredients which comprise the pesticide fogging.
Pyrenone had 70 % undisclosed ingredients; Zenivex has 80 %.
Individuals may choose to purchase and use mosquito repellents for their own body, their yard, their pets, but that is a far cry from a County purchasing and applying pesticides with unknown ingredients to all of us.
It is a fact that we have a large population of people presenting with allergy and other respiratory symptoms: they do not do well after fogging.
It is a fact that we have a large population of people with compromised immune-systems; they do not benefit from pesticide applications.
It is a fact that we have a population of pregnant women, babies, and young children; again, they do not benefit from pesticide applications.
It is a fact that we have a population of elderly and or disabled. Our elderly population is working longer years, now, but they are still elderly. They are more likely to be working in one of our urban areas than to be out camping
without proper protection from the rare infected mosquito.

Over the years, Vector has stated that the horse population will be affected by infected mosquitoes; we have very few stables, anymore, and there is a vaccine for horses.
Vector's objective, then, is to protect its human population from an overabundance of mosquito vectors, but, again, there are isolated cases, not an epidemic, infestation, or real threat to the majority of people in our County.
All counties in our State are not equal when it comes to open land; rural areas; vast amounts of water. We are no longer the agricultural community we once were. This needs to be taken into account when considering vectors.
There has been lots of money spent making the public aware of W. N. virus; there has not been much effort made to remind our urban, sophisticated, highly educated population that we can apply practical measures to living with
nature (and mosquitoes).
People who are well-traveled, well-read realize that certain colors of clothing; fragrances (hair products; lotions; perfumes; deodorants; other body products; laundry products) will attract mosquitoes; and that there are very easy and

practical measures that can be taken to avoid mosquito bites such as wearing socks, long pants and long-sleeved garments during dawn and dusk. It is safer and far more justifiable to remind our population of steps like these.

Planting trees, bushes, vines, and flowers which attract birds and hummingbirds seems like it should be included in any first steps. Hummingbirds eat vast quantities of mosquitoes if the hummingbird population is encouraged.
I propose that the County formulate a subsidized program, in which any resident who would like to purchase hummingbird feeders (you only need a pane of glass to use the type of feeder that sticks to the glass/ window, & it comes
with a moat to prevent ants, wasps, etc), and hummingbird-attractive plants, be assisted in doing so.
Garden centers, nurseries, and many hardware centers all carry plants and perhaps they'd be willing to offer reduced prices on the purchase of specific plants; same with all the bird, feed, pet and hardware stores that carry hummingbird feeders.
Some of the population may want to purchase bat houses; I'd much rather purchase a hummingbird feeder, and some very attractive flowering plants to attract hummingbirds.
Same with bird-feeders: some birds will eat mosquitoes; I'd much rather invest in a bird-feeder than in health-care that does not know how to prevent or treat pesticide reactions.
Is Vector trying to establish our dragonfly and frog population, again? Again, natural predators which we once had, but are rapidly losing.
We have yet to see independent research done on the true impact of the pesticides our county has chosen to use; their direct, indirect, and cumulative impact.
Zenivex's MSDS states that it cannot enter waterways/ water supplies. Even low-level applications, combined with commercial and residential watering during the summer months, will cause the fogging to do this.
University of California, Berkeley's environmental toxicologist, Donald Weston, after studying creeks near an area that had been sprayed with mosquito pesticides, found that toxicity had risen to levels lethal to some insects and small crustaceans. He concluded that the pesticides might be only mildly toxic, but the combination which occurs after runoff from lawns, and other urban uses is far more deadly than the individual chemicals.
Again, no matter the "low" level promised; there is no way to factually determine that this is all that's entering our air, ground, and water.
We have many days of unhealthy air, here. Pollutants linger; fogging contributes to the pollutants. The fogging may avoid the actual days of unhealthy-air alerts, but, again, the cocktail created in our air doesn't disappear. It does not
dissipate as we are led to believe. It just means that an increasing number of our residents are having respiratory issues as the years go by.
Insects are going to develop resistance, so if pesticides are resorted to, especially when there is no real widespread threat (a handful of infected birds is not a real threat), then we are causing a vicious cycle which must be stopped.

I know that there are people we elect who are working to develop, encourage, and support county parks, healthier activities and lifestyles. There are community gardens; organic garden plots in condo-complexes; organic plots in senior residential communities; and more and more

people trying to grow organic nuts, fruits, and vegetables. What we don't have are commercial agricultural industries in this County. It makes more sense to advocate for these gardens; a healthier population; and the healthiest possible eco-system, than spend money on a limited, rare pest.

No one that I've ever encountered likes mosquitoes; ants; flies; bedbugs; lice; cockroaches and destructive rodents. Yet it is possible to work with an educated human population in an urban area like we have to prevent these vectors from becoming serious threats; balance what is
used to attempt to destroy them with the quality of life for us and future generations; and foster the Valley in which we all live.
Finally, and once more: it shouldn't be up to residents to prove what's being used on their very air, ground, and water is safe. That should be the first and highest priority.

Sincerely,
Margaret Mori and family and sight-hound

I know, for a fact, that we have a population of people who are aging.

Santa Clara County Vector Control District (SCCVCD)

CEQA NOP Scoping Meeting Notes 7/28/12

Attendees:

1. Cheryl Jenson
2. Ruth Cole
3. Keith Howe
4. Kathryn Mathewson
5. Brandi Madison

6:16 p.m. Russ Parman gave Introduction and Orientation

6:18 p.m. Susan Hootkins provided further information

6:20 p.m. Russ Parman give overview of program.

Comments

Cheryl Jenson – brought suit against County to do an EIR. West nile virus (WNV) was excuse for pesticide use. Widespread broadcasting of pesticide meet criterion for EIR. Question: How many cases of WNV are there? What is verification of tests? PEIR must have all chemicals in formula (adulticide). Only independent research used. EIR preparers must be independent. Old malathion may be more toxic. How long is chemical in air on land, what about droplet size – risk assessment needed. Fogging exposure to open homes. Effects on baby with reduced liver function. Read Zenivex label. MSDS says avoid contact. Kidney dialysis patient exposure or exposure to chemically sensitive people.

2. Ruth Cole – Objection to spraying humans, killing good, beneficial animals, California is dry state. WNV epidemic never happened.

3. Kieth Howe – WNV is a benign, insignificant virus; no such thing as a safe pesticide; read from document he wrote. Deadbird program is not science, its propaganda. Pesticides increase WNV impacts; people get more sensitive to pesticides chemicals over time while insects develop resistance.

4. Katherryn Mathewson – I am an Ecologist and part of Count IPM Program. Want a copy of presentation since screen is difficult to read. There is a coordinating issue at county since vector never presented at County IPM