



**Supplemental Material
Received at the Meetings of
City Council
Redevelopment Agency
Housing Authority
Financing Authority
For**

August 9, 2007

**Special Presentation/General Communications Item A: Update from
Sacramento/Yolo Mosquito and Vector Control on West Nile Virus in the
Sacramento Region (Oral Report)**

- a. Letter from Tamrah Brusato to the Council regarding aerial spraying.
- b. Letter from Vicki Kramer the Chief of the Vector-Borne Disease Section of the California Department of Public Health to the Council regarding West Nile virus.
- c. Letter from Steve Zien, President of the Living Resources Company, to the Council regarding aerial spraying.
- d. Informational document and powerpoint present from Kim Glazzard and Paul Schramski from Pesticide Watch, representing the Coalition for Safe West Nile Virus Control, to the Council regarding the aerial spraying.

Honorable Mayor Fargo
City Councilmembers
915 I Street
Sacramento, CA 95814

Dear Mayor Fargo and City Councilmembers:

The recent aerial spraying of pesticides over Sacramento has created a lot of concern for myself and my family. I feel that spraying to kill mosquitoes is dangerous to people and creatures, and I believe there are other ways to protect people from mosquitoes. I have severe asthma and suffer the effects of airborne chemicals. While I live in South Sacramento and wasn't in the recently sprayed area of Sacramento County, I could tell there had been spraying by the way it affected my body even before I knew that spraying had occurred.

I was born and raised in Sacramento, CA, and as a child my brother was diagnosed with meningitis. Ever since then my family has been very aware of mosquitoes and the diseases they carry. My mother would make her children and grandchildren come in at a certain time of the day to avoid mosquitoes.

I am truly sympathetic to West Nile Virus victims, however I believe there are other ways to protect future victims of West Nile Virus as well as the community that suffers with pulmonary ailments and other diseases. We should have learned by now that when chemicals are sprayed they become airborne travel outside their intended area and make people sick. In the Vietnam era there was Agent Orange. During the Gulf War our troops fell ill after the spraying of Deet to help kill insects. Not only is this affecting my health now, but I don't want to have to experience additional long-term consequences.

I would like to ask the City Council to begin protecting Sacramento residents from these dangerous toxins by adopting a resolution that ensures that aerial spraying will no longer occur in Sacramento, and that more effective and safe measures will be used instead. Thank you for your consideration of my request.

Sincerely,



Tamrah Brusato
1351 San Clemente Way
Sacramento, CA 95831
(916) 424-1095



MARK B HORTON, MD, MSPH
Director

State of California—Health and Human Services Agency
California Department of Public Health



ARNOLD SCHWARZENEGGER
Governor

Special Presentation - 8/9/07

August 8, 2007

David Brown, Manager
Sacramento-Yolo Mosquito and Vector Control District
8631 Bond Road
Elk Grove, CA. 95624

Dear Mr. Brown,

On behalf of the California Department of Public Health (CDPH), I would like to extend our appreciation to the Sacramento-Yolo Mosquito and Vector Control District for your prompt and professional response to the West Nile virus threat that is currently present in your District and many other areas in California.

Adhering to the principles of the California Mosquito-Borne Virus Surveillance and Response Plan, you and your staff have appropriately utilized a comprehensive surveillance program to rapidly identify WNV "hotspots" and employed a multi-faceted control program that escalates efforts to mitigate a growing public health threat.

Your integrated vector management approach which stresses public education, outreach, source reduction, larval mosquito control, and adult mosquito control applications as needed, has surely reduced the impact of WNV on your constituents.

Studies have shown that the public health risk of WNV infection far outweighs the risk associated with the minute levels of pesticides used for adult mosquito control. In addition, the CDPH analysis of the District's response to a similar WNV outbreak in 2005 indicates that the aerial adulticiding you initiated prevented additional virus activity and subsequent human cases.

Thank you again for your continuing efforts to prevent WNV and your professional approach to vector control – you have our full support.

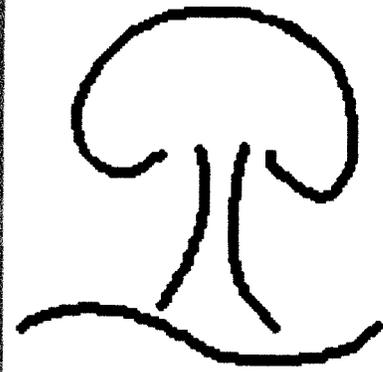
Sincerely,

Vicki Kramer, Ph.D.
Chief, Vector-Borne Disease Section

cc: See next page

cc: Glennah Trochet, MD
Sacramento County Health Officer
7001-A East Parkway, Suite 600
Sacramento, CA. 95823

Frank Carl
Sacramento County Agricultural Commissioner
4137 Branch Center Road
Sacramento, CA. 95827-3897



Living Resources Company

Organic Horticultural Professionals

P.O. Box 76

Citrus Heights, California 95611

(916) 726-5377

E-Mail: bugs@organiclandscape.com

www.organiclandscape.com

Special Presentation - 8/9/07

Sacramento Yolo Mosquito Vector Control District organic farm buffer zone inadequate.

The Sacramento Yolo Mosquito Vector Control District (SYMVCD) calculates that the aerial sprays must drift 500 feet in order to provide complete coverage between individual aerial application swaths that are flown 1000 feet apart at an altitude of 300 feet.

SYMVCD provided a 5 acre buffer zone around what they calculated as a 0.5 acre organic farm (the farm is registered with the California Department of Food and Agriculture and the local agricultural department as an organic farm) during their aerial spray event July 30, 31 & Aug. 1, 2007. That translates to a 159.5-foot buffer zone on each side of the farm.

If the spraying aircraft flew over the farm and turned off the spray based on a 5-acre buffer zone the spray would be turned off 159.5 feet before and after passing the organic farm. The spray as it leaves the plane is traveling at the same speed of the plane. The forward momentum of the spray would easily cover 159.5 feet. Even if you assume that the spray suddenly stops and is no longer moving forward (defying natural laws), turning off the spray at the start of the buffer zone (159.5 feet before flying over the farm) would result in complete contamination of the organic farm. The farm would not be protected, since the spray application is based on a 500-foot drift zone. Figure #1 (which uses this scenario) shows that the drift alone would completely cover the organic farm as well as the entire property beyond the farm if the spray was turned off at the start of the buffer zone.

If the spraying aircraft flew just north and south of the organic farm (see figure #2) the aircraft could be outside the buffer zone on each side of the farm and not have to turn off their spray. However, if you look at the area that the spray must cover to be effective (the red and purple boxes) it is very apparent that the drift required to provide full coverage of the spray between passes, that the entire farm gets contaminated.

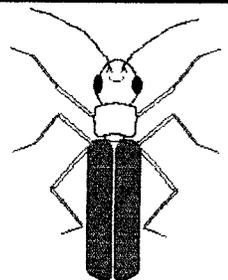
Whether the plane flies directly over the farm and turns off the spray or flies just north and south of the farm (where it would be outside the SYMVCD's buffer zone and therefore not have to turn off the spray) the entire organic farm gets contaminated.

From personal observation on August 1, 2007 I witnessed the aircraft making the application over the organic farm as it flew just north and just south of the farm (the plane was flying from east to west and west to east) at approximately 8PM. At that time of day the spray plume was easily observable (as has been seen in numerous television reports). It



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Gardening
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was observed that the aircraft did not turn off the spray as it passed the organic farm just to the north and south of the buffer zone. The result was that, due to the required and calculated drift of 500 feet on either side of the plane, the registered organic farm was totally contaminated. It is likely that the computer used to direct the plane where to spray was only programmed once, therefore it is likely that it followed the same flight path on July 30, July 31 and August 1, 2007 contaminating the farm all three days. It would be very surprising for the applicator to take the time and program in more than one flight path over the spray area, knowing that one application provides complete coverage.

In an email I received dated August 2, 2007, Mr. David Brown, manager of the SYMVCD stated, "We are not treating farms that are registered with the local agricultural department. Our applicator continues to use GPS technology to determine when the spray needs to be turned off to avoid treatment."

The fact that the SYMVCD chose a five acre buffer zone allowed them to fly just north and south of the only registered organic farm in the spray zone without turning off the spray. The buffer zone would be honored, however, the organic farm would be, and was contaminated. The District has been asked to provide the calculations used to determine the size of the buffer zone and so far they have been reluctant or unable to supply that data. Is that because the size of the buffer zone was calculated so they would not have to turn off their spray when flying past the organic farm?

The SYMVCD did not protect a registered organic farm in the spray zone on July 30, July 31 and August 1, 2007. It will likely provide the same inadequate protection organic farms in the City of Sacramento during future spray applications. Note that when the SYMVCD aerial sprayed in 2005, a registered organic farm in the City of Sacramento tested their crops for pesticide residue following an application over their farm. The SYMVCD said they provided an adequate buffer zone to protect the farm from contamination. However, pesticide residue analysis found that the farm had been contaminated with the active ingredients used by the SYMVCD in their aerial application.

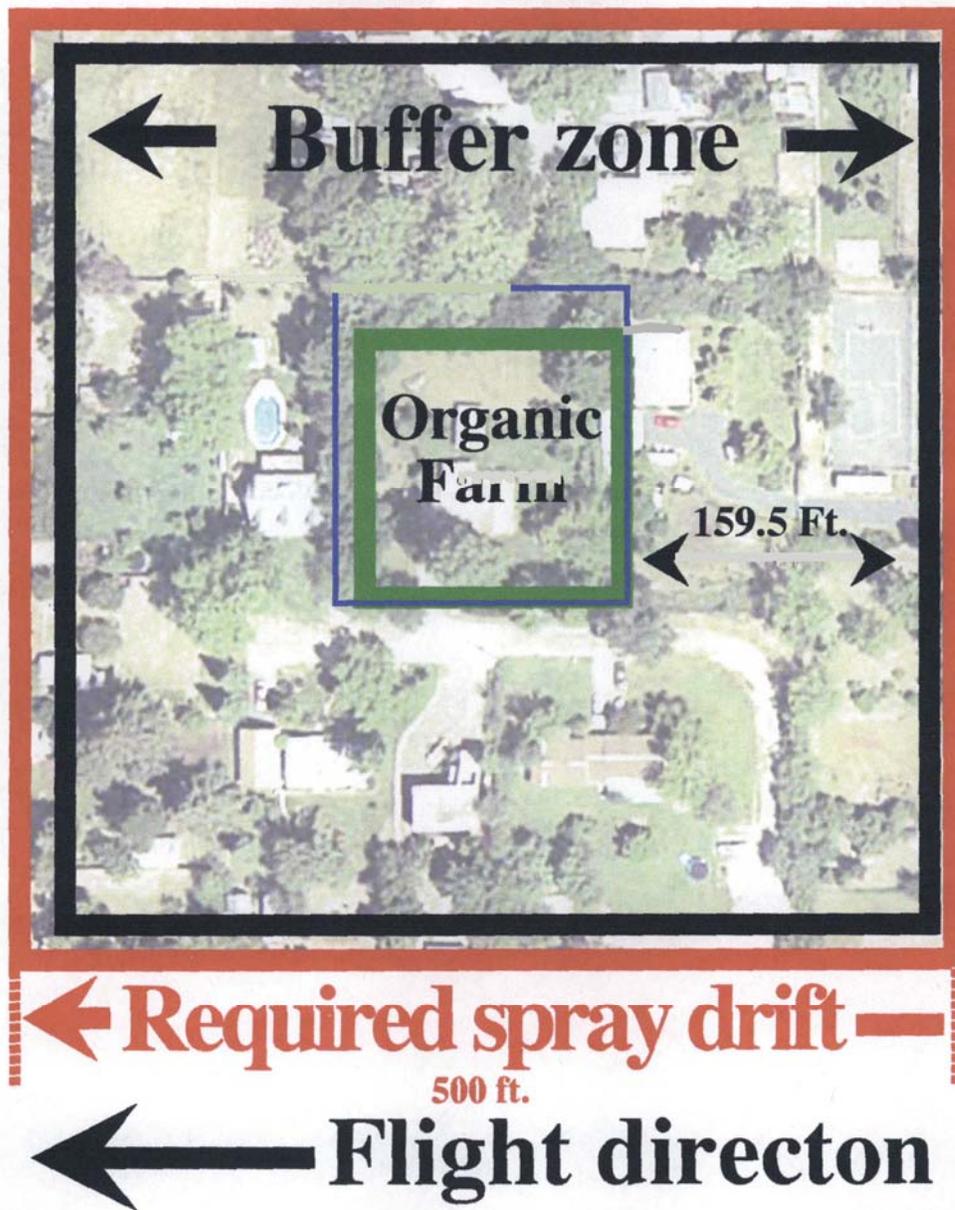
The SYMVCD is not protecting local business from contamination. Organic farms that are contaminated can lose their organic certification. It can take years to regain that certification. More importantly for the organic farmer is that their clients who demand organic crops when they learn that that the farm was sprayed with pesticides by the SYMVCD the clients trust will be lost. They will look for other sources of organic products and the reputation of the organic farmer will be damaged for years to come.

Please consider the total disregard that the SYMVCD has shown for local businesses. As a licensed pesticide applicator that has been working on this issue for four years I also must tell you that they have shown the same disregard to public health. I would be happy to discuss these other issues with you at some time in the future.

For clarification the farm discussed above is my organic farm which until July 30, 2007 had been totally organic since 1978.

Naturally Yours,
Living Resources Company
Steven M. Zien
President
<<http://www.organiclandscape.com>>
916/726-5377

Figure #1



Sacramento Yolo Mosquito Vector Control District (SYMVCD) organic farm buffer zone inadequate.

The SYMVCD calculates that the aerial sprays must drift 500 feet in order to provide complete coverage between individual aerial application swaths that are flown 1000 feet apart.

SYMVCD provided a 5 acre buffer zone around a 0.5 acre organic farm during their spray event July 30, 31 & Aug. 1, 2007. That translates to a 159.5 foot buffer zone on each side of the farm.

If the aircraft turned off the spray based on a 5-acre buffer zone the spray would be turned off 159.5 feet before and after passing the organic farm. The spray as it leaves the plane is traveling at the same of the plane. The forward momentum of the spray would easily cover 159.5 feet. Even if you assume that the spray is not moving forward (defying natural laws) turning off the spray at the start of the buffer zone (159.5 feet before flying over the farm) the farm would not be protected, since the spray application is based on a 500 foot drift zone. Looking at the diagram above (which uses this scenario) it is obvious that the drift alone would completely cover the organic farm as well as the entire property beyond the farm.

The SYMVCD's buffer zone was completely inadequate to protect this organic farm.

August 1, 2007, the owner of this organic farm observed the plane make its application over the farm at approximately 8 PM (it was still light out and very easy to see the spray plume) and the spray was never turned off as the plane flew past the farm.

Submitted by Steven Zien, organic farmer, Sacramento County.

Key:

Green box - size of organic farm determined by SYMVCD (0.5 acres = 147 feet x 147 feet)

Blue box - actual area of organic farm

Black box - Buffer zone provided by SYMVCD (5 acres = 466 feet x 466 feet)

Red box - Drift required by SYMVCD to insure coverage (plane swaths are 1000 feet apart => drift required for complete coverage is 500 feet)

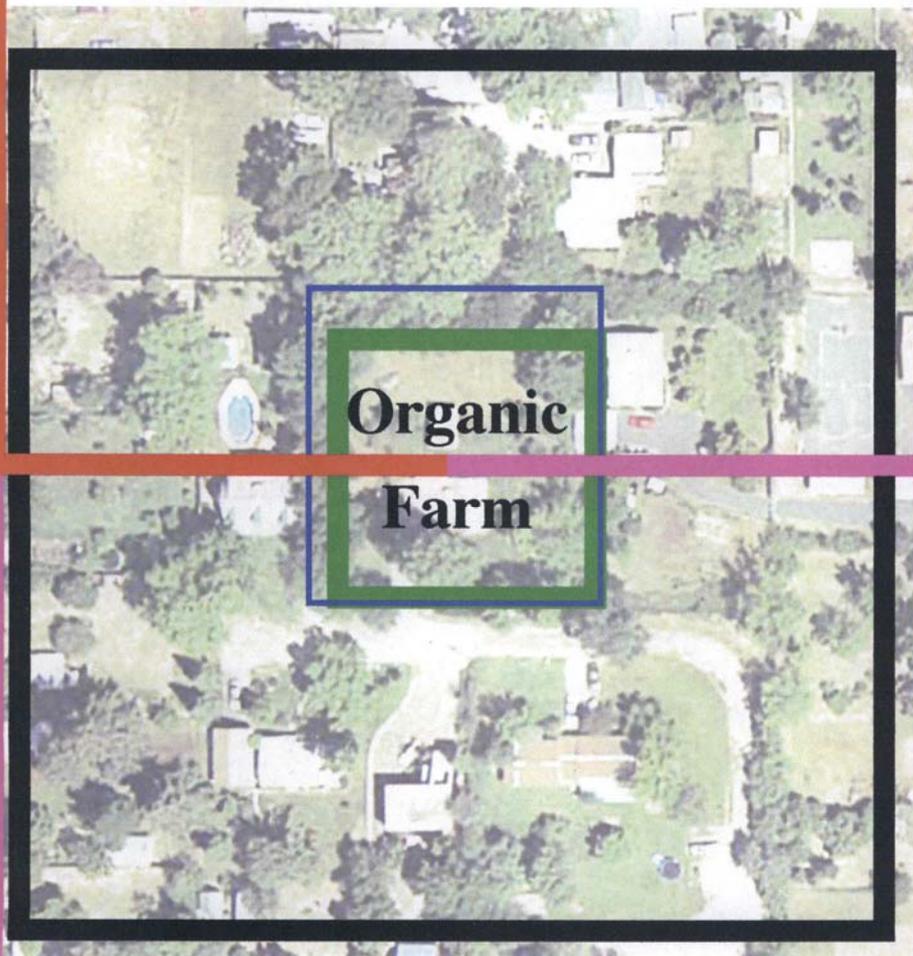
Figure #2

↑
North

← **Flight path**

↑
**1000 foot
between
spray each
spray path**

↓
← **Flight path**



Key:

Green box - size of organic farm determined by SYMVCD (0.5 acres = 147 feet x 147 feet)

Blue box - actual area of organic farm
Black box - Buffer zone provided by SYMVCD (5 acres = 466 feet x 466 feet)

Red & Purple boxes - Drift required by SYMVCD to insure coverage (plane swaths are 1000 feet apart => drift required for complete coverage is 500 feet)

Proposal for the City of Sacramento to Pass a Resolution to Request an Opt-Out of the Sacramento-Yolo Mosquito & Vector Control District's Aerial Spraying for West Nile Virus

Notes to slide presentation:

Slide 1: Thank you Mayor Fargo and council members for providing this opportunity to present our perspective. My name is Kim Glazzard from Organic Sacramento and this is Paul Schramski from Pesticide Watch. We represent member organizations of the Coalition for Safe West Nile Virus Control. We are here tonight to request that the City Council create a moratorium and adopt a resolution to opt out of aerial spraying for West Nile virus until it is proven to be safe and effective.

Slide 2: The Coalition for Safe West Nile Virus Control is an organization composed of local and statewide public health and environmental groups.

Slide 3: In 2005, the Sacramento-Yolo Mosquito and Vector Control District (SYMVCD) began a program of aerially spraying pesticides over large urban areas in Sacramento and Yolo Counties. While this was in response to concerns regarding West Nile virus (WNV) exposure, many area residents believe that the District drastically exaggerated the seriousness of this alleged "epidemic," and that the spraying was extreme and unnecessary.

In 2006, the District expanded its aerial spray program and sprayed large portions of Yolo County including residents of the City of Davis, even though the threshold of infected mosquitoes was 0 per 1000 and mosquito counts were down by 92%. Concerned Davis residents demonstrated fervent objection and collected over 1100 aerial spraying opposition letters to the Davis City Council. Despite significant public protest, the spraying continued.

Now, in 2007, the District decided to prematurely aerially spray over urban areas of Sacramento County in response to only one confirmed human case. Citizens and local organizations have joined together to raise mutual concerns over the safety and efficacy of this continued program. Because this is an issue of such major importance, we believe that jurisdiction over decisions such as this warrant public oversight and input by elected officials.

Slide 4: While West Nile virus is a serious disease, the District has done a real disservice to Sacramento residents not only by exaggerating/amplifying the rates of West Nile virus infection, but also by discounting and downplaying the risks of pesticide exposure. Citizens were lead to believe that aerial spraying would halt the transmission of West Nile virus and that they had no choice but to accept exposure to chemical pesticides and a pattern of seasonal applications of aerial spray, as a necessary safeguard against the West Nile virus disease. Many communities across the country, however, have proven that aerial spraying not only is not essential, but may actually be a detriment and impede efforts to protect residents from West Nile virus. Many have successfully chosen safer, more effective alternatives to aerial spraying - and Sacramento could do so as well.

Slide 5: We believe that as council members, your job is to put all of our public health concerns in perspective. While West Nile virus is a disease of concern, other health risks are also important and often take thousands of lives per year, warranting the direction of valuable public resources and attention.

Slide 6: Pesticides are toxic by design and known to be carcinogenic. Increased exposure to pesticides exponentially increases the risks of various forms of cancer.

Slide 7: Aerial spraying not only puts residents at risk of pesticide poisoning and long-term secondary public health problems, but, rather than solving a problem, one set of public health concerns are being substituted for another. Aerial spraying directs valuable resources away from more effective methods of mosquito control, while giving people a false sense of security.

Slide 8: The over half million dollars spent on aerial spraying in 2005 would have more than doubled the budget for more effective mosquito control approaches such as public outreach and education.

Slide 9: Aerial spraying for adult mosquito control of WNV infections is unproven, unsafe and circumvents local control.

Slide 10: While there have been various studies cited, there is no conclusive evidence that aerial spraying either eliminates or decreases the incidence of West Nile virus infections.

Slide 11: The Reddy Study of 2006 found that even the direct truck spraying of the more potent ULV pesticide applications failed to contact the target mosquitoes and resolved that insecticidal aerosols may not effectively reduce the force of transmission of WNV.

Slide 12: The seasonal cycle of West Nile virus includes an exponential increase, peak and longer exponential decrease of West Nile virus infection rates as would be expected at the end of the season. This natural downward trend of cases of West Nile virus infection may correlate with the district's claims of spraying efficacy. Such manipulation undermines trust in our public health and vector control officials.

Slide 13: Even the CDC has noted that pesticide spraying of adult mosquitoes is the least effective method of mosquito management.

Slide 14: Historically, many things that seemed to be a good idea or the right thing to do at the time, have later proved to have harmful consequences. We do not feel that the risk of widespread exposure of the public to toxic chemicals of this magnitude is warranted.

Slide 15: Pesticide exposure can be magnified by a number of factors including cumulative exposures from multiple applications and the synergistic effects of multiple ingredients. It is a violation of federal and state law for licensed pesticide applicators to claim or even imply that any pesticide is safe.

Slide 16: While the District has insisted that the ingredients in the pesticide they are spraying is essentially harmless, common sense dictates otherwise.

Slide 17: Pyrethrin, which is a potential endocrine disruptor and as little as 6% of the mix, can trigger life-threatening allergic responses including heart failure and acute asthma attacks. PBO, which constitutes the bulk of the remaining ingredients, is a suspected carcinogen, allergen and reproductive toxin. We have no idea about the effects of the remaining ingredients because they are undisclosed, however they could be equally or more toxic.

Northwest Coalition for Alternatives to Pesticides states that "other" or "inert" ingredients are not inert in the usual sense of the word; often they are neither chemically, biologically, nor toxicologically inert.

Slide 18: The pesticide label clearly lists multiple hazards to humans, animals and the environment. Note in particular that the label states to avoid breathing vapors or spray mist.

Slide 19: The District has emphasized the dangers of West Nile virus, while seriously downplaying the risks associated with toxic pesticide exposure. With diligent accounting for every known West Nile virus case, the District neglected to provide a means by which adverse affects from toxic pesticide exposure could be reported, or epidemiologic studies conducted. Symptoms of pesticide poisoning can range from headaches, to difficulty breathing, to nausea, or worse.

Slide 20: Even the efforts the District has made toward public education and outreach have been negligible and ill-advised. The District has been spending valuable public funds educating school children, rather than targeting their programs toward the most vulnerable elderly, immune-compromised, and other at-risk populations.

Slide 21: Through its vector control guidelines, even the CDC specifically stresses the importance of reaching out to senior populations.

Slide 22: A study on the aquatic effects of aerial spraying for mosquito control over an urban area [Sacramento County] by researcher Donald P. Weston from the University of California in Berkeley in 2006 confirmed that there is a greater risk to aquatic life from the synergistic enhancement of toxic chemicals already in the environment, greater than the active ingredients of the sprayed insecticides alone.

Slide 23: While Sacramento residents are continually reassured that the District is only spraying “small doses,” the reality is that the amount of pesticides dispersed into the atmosphere was significant.

Slide 24: The most effective methods of mosquito control include source reduction and water management, aggressive public education and outreach, and accelerated larviciding. Our District should redirect their budget allocation for adulticiding toward these more effective and safe mosquito control methods.

Slide 25: It is a serious breach in democratic values when quasi-governmental appointed administrators make decisions and operate outside the realm of the checks and balances of representation by elected officials.

Slide 26: Even our nation’s capital, Washington, DC, chose not to spray adulticides, in deference to more effective methods of mosquito control.

Slide 27: Rather than resort to spraying, Peggy Keller, Chief of the Bureau of Community Hygiene and Animal Disease Prevention in Washington, DC states, “We’ve learned that the best way to protect the public from both the virus and the pesticides is to intensify our larval program and distribute outreach and education information that emphasizes prevention and protection techniques to the public in the surrounding area.”

Slide 28: Even Fort Worth, Texas does not spray, noting “...the toxins used in spraying may have side effects that generally outweigh the limited positive impacts.”

Slide 29: Fort Worth’s “Let’s do-it-together plan” emulates the belief that working with its citizens is most effective and citizens are encouraged to assume responsibility to conscientiously use the information provided.

Slide 30: These last two years have been plagued with endless inconsistencies and unreliable behavior by the District. This has included contradictions and continual changes in information they have provided, as well as the criteria and thresholds they use to determine the need to spray.

Slide 31: Organic farms were told they could have a buffer zone which would protect their farms from pesticide contamination. In reality, the buffer zones were inadequate and contamination has been unavoidable.

Slide 32: The District has changed their criteria for spraying, to match the circumstances. While spraying was deemed necessary at their “level 5” emergency during 2005, the District decided to spray this year when West Nile virus counts only reached “level 4” thresholds. Spraying is now commencing based on perceived epidemics in mosquitoes and birds rather than humans.

Slide 33: The District has not appeared to operate in good faith with Sacramento and Yolo County residents. Even their notification protocol of the aerial spraying has been markedly inadequate. The District’s public outreach efforts have ranged anywhere from no notification to last minute notification to inaccurate notification and has proved to be more of a fiasco than a reliable source of information. Inordinate reliance on the media in the absence of other serious outreach has made these efforts appear to be more of a public relations campaign than a public information effort.

Slide 34: The District’s own presentation on the CDC website was deceptive. If their claim that the spraying of pesticides over Sacramento in 2005 resulted in the “elimination of West Nile virus infection” were true, there would be no need to be spraying this year.

Slide 35: We don’t believe that the District has either a valid or reasonable justification for aerially spraying the residents of Sacramento and Yolo Counties, and is not a valuable and effective way to spend our public health resources.

Slide 36: Due to the dangers and unreliability of the District’s current methodology, we again formally urge the City of Sacramento to adopt a resolution to request opting-out of the aerial spray application of pesticides.

Proposal for the
City of Sacramento
to Pass a Resolution to
Request an Opt-Out of the
Sacramento-Yolo Mosquito &
Vector Control District's Aerial
Spraying for West Nile Virus

Presented by:



Coalition for Safe West Nile Virus Control

Pesticide Watch Education Fund · Marlin Beyond Pesticides · No Spray Sacramento
Stop West Nile Spraying Now · Organic Sacramento · Parents for a Safer Environment

2005

Sacramento-Yolo Mosquito & Vector Control District (SYMVCD) began aerially spraying pesticides over large urban areas in Sacramento and Yolo Counties

2006

SYMVCD aerially sprayed large portions of Yolo County including residents of the City of Davis

2007

SYMVCD prematurely sprayed aerially over urban areas of Sacramento County in response to only one confirmed human case.

Public Health Based on Fear Not Fact

- Use of the word "epidemic" is ambiguous and inappropriate
- Across the country, communities that have chosen not to spray adulticides have done as well as or better with regard to WNV infection rates when compared to nearby communities that did spray

Putting WNV in Perspective

West Nile virus is a disease of concern and here is the broader public health perspective:

IN ALL OF CALIFORNIA...

- ⇒ Over 7000 annual deaths from influenza
- ⇒ Over 12,000 annual deaths from COPD (Chronic Obstructive Pulmonary Disease)
- ⇒ Over 6000 annual deaths from ESLD (End Stage Liver Disease)
- ⇒ 28 deaths from WNV in 2004
- ⇒ 19 deaths from WNV in 2005
- ⇒ 7 deaths from WNV in 2006

Source: California Department of Health Services

Estimated deaths from Breast Cancer in California in 2007:

4,130

Estimated deaths from Lung Cancer in California in 2007:

13,220

Source: US Mortality Public Use Data Tapes, 1969-2004, National Center for Health Statistics, Centers for Disease Control and Prevention, 2006.
©2007, American Cancer Society, Inc., Surveillance Research

Every life does count!!

Aerial spraying of pesticides:

- Puts more people at risk, especially the immunocompromised, serious and chronically ill
- Creates secondary public health problems that add to the already overburdened health care system and drive up health care costs overall
- Undermines and directs resources away from proper and safe methods of mosquito control
- Gives people a false sense of security

Cost of SYMVCD Aerial Adult Mosquito Control Operation in 2005

- Decision made August 4 to treat 50,000 acres North of American River August 8 (3x)
- 70,000 acres south to follow August 11 (3x)*
 - 21, 22, 23
- Pyrethrin/PBO product selected at 0.66 oz. per acre
- 330,000 acres = ~~\$666,000~~

WNV Mosquito Suppression and Control in the SYMVCD, Deane et al., SYMVCD and CDPH, 2006.

- The expenditure of ~~\$666,000~~ tax dollars on an ineffective method of mosquito control puts people's health and lives at risk when increasing efforts in education and larviciding have been shown to be more effective
- That amount of money would have more than doubled the budget for more effective approaches such as public outreach and education.

Aerial Spraying of Pesticides for Adult Mosquito Control is:

- Unproven
- Unsafe
- and . . .
- Circumvents Local Control

Aerial Spraying of Pesticides for Adult Mosquito Control is: **Unproven**

- No studies show conclusively that aerial spraying eliminates or decreases the incidence of West Nile virus infections
- Two studies cited by SYMVCD claiming efficacy of aerial spraying have not been published in peer reviewed literature

Efficacy of aerosols for suppressing Culex vectors of West Nile virus

According to a November 2006 research paper by the Harvard School of Public Health and the Centers for Disease Control, a more toxic pesticide was found to be ineffective at reducing the transmission of WNV.

"We find that ULV applications of permethrin had little or no impact on the Culex vectors of WNV, even at maximum permitted rates of application. A model simulating the major outcomes of such treatments indicates that they are unlikely to reduce the force of transmission of such an arbovirus (Newton and Reiter 1992)."

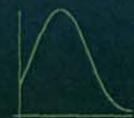
"We found that the aerosol plume may have failed to contact the target mosquitoes and conclude that such insecticidal aerosols ... may not effectively reduce the force of transmission of WNV."

Efficacy of Permethrin Aerosols Applied from the Road for Suppressing Culex Vectors of West Nile Virus, Reddy et al. Vector-Borne and Zoonotic Diseases, Vol. 6, No. 2, 2006

The real truth is...

Adulticide spraying has little or no effect on the decrease in WNV infection rates

- WNV infection rates have an exponential increase, a peak and a longer exponential decrease
- Sacramento has already reached and passed the peak and is in a natural decrease into chronic endemicity



"A great deal is being done to reduce risk due to West Nile virus, but we have no idea about the efficacy of such measures," asserts Andrew Spielman, Professor of Tropical Public Health, Department of Immunology and Infectious Diseases, Harvard University. "Infections like this come and go . . . People become most stimulated to do spraying when it's at the peak of the epidemic curve. At that point, anything that you do will work, including doing nothing. You're at the peak, and it's going to go down anyway."

The Centers for Disease Control and Prevention (CDC) has previously said that pesticide spraying of adult mosquitoes is the least effective method of mosquito management.

Better Safe Than Sorry

We've learned from . . .

- Lead in paint
- DDT in pesticides
- Chemicals in cigarettes

These lessons must be applied to mosquito control.

Aerial Spraying of Pesticides for
Adulticide Mosquito Control is:
Unsafe

- It is a violation of federal and state law for licensed pesticide applicators, distributors, or manufacturers to claim or imply that any pesticide is safe.
- Cumulative exposure from multiple applications increases the risks for serious health effects
- Pesticides are only tested individually, ignoring the synergistic effects of multiple ingredients which create far more toxic chemicals
- PBO is listed by the EPA as a group C (possible) carcinogen

Evergreen 60-6

**Pyrethrin (6%) + PBO (60%)
+ Unknown Ingredients (34%)
= Unsafe Product**

- The largest part of this mixture represents the most persistent danger to the community - PBO
- The next largest portion of this mix is unlisted
- Pyrethrin itself contributes to a number of debilitating diseases, and is enhanced by the synergistic effects of PBO

Possible Serious Human Health Effects of Pyrethrin and PBO

Pyrethrin

- Contact poison
- Potential endocrine disruptors
 - Linked to breast and other cancers
 - Increases risk of childhood brain cancer and leukemia

Piperonyl Butoxide (PBO)

- Suspected reproductive toxin
- Suspected carcinogen and allergen
- Hepatotoxic
 - Synergizes cholinesterase inhibitors
 - Compromises liver function

"Inert" or Other Ingredients

- Trade secrets
- Make the active ingredient more potent or easier to use

Evergreen 60-6 Product Label

HAZARDS TO HUMANS AND DOMESTIC ANIMALS CAUTION

Harmful if swallowed, absorbed through the skin or inhaled. Causes eye irritation. Do not induce vomiting because of aspiration pneumonia hazard. Avoid contact with skin, eyes and clothing. Avoid breathing vapors or spray mist. Avoid contamination of food and feedstuffs.

ENVIRONMENTAL HAZARDS

This pesticide is highly toxic to fish. For terrestrial uses, do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Drift from treated areas may be hazardous to organisms in adjacent aquatic sites. Do not contaminate water when disposing of equipment washwaters.

DIRECTIONS FOR USE

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirement specific to your State or Tribe, consult the agency responsible for pesticide regulation.

Public Health Concerns

California Department of Health Services claims that there have been no adverse health effects from the spray, however ...

- Neither the public, health care providers, nor medical professionals have been educated to recognize the symptoms of pesticide poisoning
- Epidemiologic studies have not been conducted to confirm whether Sacramento or Yolo area residents' health was adversely affected by WNv aerial pesticide exposure, including the at-risk population
- Symptoms of pesticide poisoning can include: Headaches, dizziness, sore throat, difficulty breathing, eye irritation, skin rash, asthma, hives, shortness of breath, nausea, diarrhea, labored breathing

Public Health Education

The elderly and immune-compromised are the most susceptible to illness caused by WNv . . .

- SYMVCD is spending valuable tax dollars educating school children, rather than targeting public education and outreach programs toward the most vulnerable elderly, immune-compromised, and other at risk populations, as recommended by the CDC
- Residents have the option of accepting individual responsibility by protecting themselves from mosquitoes, whereas exposure to pesticides from aerial spraying is unavoidable

The Elderly and Immune-compromised are the Most Susceptible to Illness Caused by WNV

CDC recommendations and guidelines:

- While persons of any age can be infected with WNV, US surveillance data indicate that persons over age 50 are at higher risk for severe disease and death due to WNV infection
- Collaboration with organizations that have an established relationship with mature adults, such as the AARP, senior centers, or programs for adult learners
 - Include images of older adults in promotional materials
 - Identify activities in your area where older adults may be exposed to mosquito bites (e.g. jogging, golf, gardening)

Environmental Risks

- "Published risk assessments and EPA's PBO risk assessment have failed to consider the potential for PBO to enhance toxicity of insecticides already in the environment."
- "Sediment concentrations of pyrethrins in Sacramento creeks increased from <1 ig/kg before treatment to about 400 ig/kg in some samples after spraying."
- "The greatest aquatic risk of aerial application of insecticide was not toxicity of pyrethrins or PBO individually, but was the synergy between PBO and preexisting pyrethroids in creek sediments."
- PBO concentrations of 2-4 ig/L were widespread in Sacramento creeks after aerial spraying... sediments. This PBO concentration was sufficient to approximately double the toxicity of Strong Ranch Slough sediment in laboratory tests."

Aquatic Effects of Aerial Spraying for Mosquito Control over an Urban Area
Weston, D. P. et al. Environ. Sci. and Technol. July 2006

The Grand Experiment of 2005

- "Low dose" aerial adulticiding put more than 12,000 pounds of active ingredients into Sacramento's air
- Over 6 nights of aerial spraying during August 2005, an average of 55,000 acres was sprayed with pesticides to equal .66 oz per acre or 36,300 oz per flight x 6 flights, resulting in more than 6 tons of poisonous toxins in the air

55,000 acres at 2/3 oz per acre* = 55,000 (2/3) = 36,300 oz / 16 oz / lb = 2,268.75 lbs
or more than one ton for each flight x 6 flights
* Source: Gary W. Goodman, SYMVCD

Most Effective and Safe Methods of Mosquito Control

- Source reduction / water management
- Aggressive public education and outreach
- Accelerated larviciding

Aerial Spraying of Pesticides for Adult Mosquito Control:
Circumvents Local Control

- Citizens have no recourse and elected public officials are not being consulted by SYMVCD
- Special districts have authority that supersedes public oversight and involvement in the decision over choosing the risk of exposure to WNV vs. the dangers of pesticide exposure
- Neighborhoods and organic farms that have eliminated all larval breeding habitats on their property may be sprayed regardless

As the Capitol of California, we should follow in the footsteps of our Nation's Capitol, Washington D.C.

Washington, D.C. does not spray adulticides for mosquitoes because of:

- Low efficacy of spraying
- Kills of non-target species
- Potential health risks to a high population of persons affected with respiratory problems and compromised immune systems

"When we find West Nile present in mosquito pools here in Washington, D.C., we don't spray," said Peggy Keller, Chief of the Bureau of Community Hygiene and Animal Disease Prevention in the D.C. Department of Health.

"We've learned that the best way to protect the public from both the virus and the pesticides is to intensify our larval program and distribute outreach and education information that emphasizes prevention and protection techniques to the public in the surrounding area."

Fort Worth, Texas does not Spray for Adult Mosquitoes

...It's important that residents understand their vital role in protecting themselves from the threat of infection.

While some welcome spraying for mosquitoes, the fact is that spraying will not eliminate the threat of mosquito-borne illnesses.

...the toxins used in spraying may have side effects that generally outweigh the limited positive impacts.

Fort Worth, Texas does not Spray for Adult Mosquitoes

... adding harmful chemicals to the environment can have unwanted secondary effects to both air and water.

...thousands of Fort Worth residents living with respiratory problems such as asthma would be in danger of an onset of symptoms.

The city's plan can be described as a "Let's do-it-together plan." The city, county and state are doing their part by monitoring for West Nile and providing residents with the information they need to protect themselves. Now it's the residents' responsibility to use that information.

SYMVCD Inconsistencies

- In 2005, the recommendation was to stay inside, in 2007, very little is being said with regard to safety precautions and how to avoid exposure to pesticides
- Prior to the recent 2007 spraying, there were only two human cases of WNV and one of those was attributed to a Texas transmission, yet aerial spraying commenced
- In 2006, there were many more cases of human infection, yet SYMCD did not deem it necessary to conduct aerial pesticide operations over urban areas of Sacramento County

More SYMCD Inconsistencies

- Organic farms were sprayed
 - Buffer zones were inadequate
 - Buffer zone determination methods unknown
 - SYMCD unwilling or unable to disclose their calculations in determining buffer zone
 - Did not turn spray off when passing over registered organic farms, even though they said they would

More SYMCD Inconsistencies

- SYMCD keeps changing their criteria for determining application of aerial spraying
 - Sprayed at level 5 in 2005 and began spraying at level 4 in 2007
- SYMCD's definition of "epidemic" is variable
 - Anything over one human infection
 - Spraying based on "epidemic" in mosquitoes and birds, not actual human cases

SYMVCD Spraying Notification Irregularities

Notification inadequate

- Reliance on TV, radio and newspaper misses large segments of the population
- Email notification provides last minute notice with no time to plan
- SYMVCD phone system does not provide updated information and no access to accurate spraying schedules after hours
- Many people do not know they are being sprayed

Misleading information from SYMVCD

Results

- Significant reduction in Mosquitoes and WNV Infection in North Sacramento County
- Post trap counts showed a dramatic reduction of mosquito population and elimination of WNV infection

West Nile Virus Surveillance and Control in the SYMVCD.
David Brown et al. SYMVCD and CHS (2006)

WNV infection was *NOT* eliminated!

Is Aerial Spraying the Most
Effective and Humane Way to
Spend Public Health
Resources???

NO

Due to the dangers and unreliability of the SYMVCD current methodology, we formally urge the City of Sacramento to adopt a resolution to request opting-out of the aerial spray application of pesticides.