

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 effects 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 • Marin 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~~

West Nile Virus Surveillance and Control in the SYMVCD, David Brown et al. SYMVCD and CCHW (2005)

- 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 resmethrin 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 Resmethrin 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 outset 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 SYMVCD did not deem it necessary to conduct aerial pesticide operations over urban areas of Sacramento County

More SYMVCD Inconsistencies

- Organic farms were sprayed
 - Buffer zones were inadequate
 - Buffer zone determination methods unknown
 - SYMVCD 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 SYMVCD Inconsistencies

- SYMVCD keeps changing their criteria for determining application of aerial spraying
 - Sprayed at level 5 in 2005 and began spraying at level 4 in 2007
- SYMVCD'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 CDHS (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.