

VECTORVision

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District Controls Black Fly Problem with VectoBac®

Despite the fact that these black flies don't actually bite people, the Bullhead City Pest Abatement District in Arizona and the Clark County Vector Control in Las Vegas, Nev., were accustomed to receiving complaints about these pesky insects. That changed when *Bacillus thuringiensis israelensis* (Bti) became available in the early 1980s for use in rivers, and Richard Hicks, entomologist and vector control supervisor for the Clark County Vector Control, began applying VectoBac 12AS biological larvicide.

The Colorado River runs between Laughlin, Nev., and Bullhead City, requiring both districts to treat for black flies, which are a significant problem along the river. Clark County Vector Control handles black fly control for both entities.

"Black flies were a nuisance and they were becoming a bigger problem as both the population and economic development grew in the area," says Hicks. "Until Bti was approved, spider webs along the river were full of black flies and the docks used to be black with flies. People were forced to tolerate the pests and oftentimes had to wear protective nets when near the river."

Hicks notes prior to Bti approval, adulticides were sprayed on the Arizona side of the Colorado River to try to control the black flies. "We didn't notice a significant reduction until we were able to make Bti treatments in the river," says Hicks. "Plus, people voiced environmental concerns about adulticiding."

In the mid-1970s, Dr. Mir Mulla from the University of California-Riverside oversaw initial studies identifying life cycles and location sites of black flies in the area, leading to the current use of Bti in this program.

Expanded Treatments

Today, the Clark County Vector Control achieves 90 to 95 percent black fly control with VectoBac 12AS. "Working closely with Valent BioSciences on the placement and monitoring of larval substrates, we've determined we could improve the efficiency of our program by expanding the treatment area," says Hicks. "We've also found that we achieve better coverage and

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NEWS FROM VALENT BIOSCIENCES



VECTOLEX® WSP APPROVED IN CALIF.

VectoLex WSP recently received registration for use in California. Ask your Valent BioSciences vector sales representative about the effective and easy to apply new water soluble packet.

THANK YOU

The 2002 American Mosquito Control Association Meeting (AMCA) was a great success. We want to thank everyone for stopping by our booth. Don't hesitate to contact us throughout the year with any of your vector control challenges.

WE WANT TO HEAR FROM YOU

Let us know about your success stories applying VectoBac and VectoLex. If your story is selected for publication, you'll receive a gift from us. E-mail us at vectorvision@outofthebox.com.



Frequently Asked Questions

Peter DeChant, Field Development Scientist for Valent BioSciences, answers several frequently asked questions.

Q I have heard that VectoLex is highly effective in polluted water such as storm sewers, waste lagoons and septic ditches. Will VectoLex also work in clean water habitats?

A The ability of *Bacillus sphaericus* (the active ingredient in VectoLex products) to control mosquitoes in polluted water is quite impressive. Consequently, researchers have focused much attention in this area, which has led to the misconception that VectoLex is only intended for polluted water use.

In reality, VectoLex is highly effective in both clean and polluted water habitats. Field trials and operational treatments have repeatedly shown that VectoLex provides long-lasting control in duck clubs, wetlands, salt marshes, pastures, rice fields and floodwaters. Water quality in these habitats can range from pristine to moderately polluted. There has been no correlation seen between water quality and the effectiveness of VectoLex in these habitats.

Q I've read that VectoLex offers excellent initial and residual control of *Culex* mosquito larvae. Can VectoLex also be useful for control of mosquitoes in other genera?

A The susceptibility of mosquitoes outside of the genus *Culex* to *Bacillus sphaericus* (VectoLex) is often misunderstood. Susceptibility varies greatly within the most common genera. Larvae of many species are as susceptible if not more so than *Culex*, and the situation needs to be looked at on a species-specific basis.

For example, while *Aedes aegypti*, the most common

Aedes species found in laboratory colonies is not susceptible to VectoLex, *Aedes vexans* is very susceptible. Similar variation can be seen within *Anopheles*, *Ochlerotatus* and *Psorophora* with some species being extremely susceptible and others much less so. It appears that U.S. species of *Culiseta*, *Mansonia* and *Coquillettidia* are susceptible.

If you have questions, first check the product label for species listed. Contact your Valent BioSciences vector sales representative if you need more details.

Q In what larval control situations can I get the maximum benefit from VectoLex products?

A VectoLex offers many benefits. These include extended residual control and effectiveness in tough situations. In addition, the environmental benefits of VectoLex allow its use where other materials that have a heavier ecological footprint may not be acceptable to regulators or land managers.

You will benefit from using VectoLex anywhere that extended control saves time, fuel and labor. Some materials may require weekly treatments, while with VectoLex you can realize treatment intervals as long as six weeks or more. This attribute becomes particularly important in waterfowl areas where land managers insist on minimal disturbance of wildlife by mosquito control activities.

Often, in floodwater situations, susceptible *Aedes*, *Ochlerotatus* or *Psorophora* will hatch upon initial flooding, and *Culex* will later develop in residual pools. Properly timed VectoLex treatments can be beneficial in these situations.



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control by making treatments across the width of the river.”

VectoBac is applied at 20 to 25 parts per million. Applications have recently been made with a pontoon boat with the larvicide released through gravity flow from shoreline to shoreline at different locations.

VectoBac 12AS is applied year-round to control the black flies. Hicks generally applies VectoBac every two to three weeks during the spring and fall when black fly populations are higher. During cooler months, applications are made every three to five weeks.

“We’re as pleased as the residents and businesses are with our current control program,” says Hicks. “Part of the program’s success is attributed to the exceptional service and personal involvement we receive from Valent BioSciences. While we continue to fine tune our VectoBac applications, we’re confident with the assistance of Valent BioSciences that we’ll find ways to make further improvements.”



CDC and ArboNet Announce 2001 WNV Statistics

The Centers for Disease Control and Prevention (CDC) recently announced updated West Nile Virus (WNV) figures from 2001. The organization reports that WNV has dramatically expanded since its introduction in 1999 and that bird and crow surveillance remains an effective method to track the disease.

Paul Reiter, chief of the Centers for Disease Control and Prevention’s WNV project at the Harvard School of Public Health, adds that through surveillance, national zoological gardens from Chicago to Louisiana have found captive birds and animals, including an alligator, that have been infected with WNV. See related article on outside flap.

Below are some of the latest data and analyses from the CDC and ArboNET, a cooperative surveillance between the CDC’s Division of Vector-Borne Infectious Diseases and 54 state and local health departments.

National WNV Surveillance in 2001: Conclusions

- Dramatic southward & westward expansion since 1999
- Two major transmission foci in 2001: northeast & southeast
- WNV probably entered Florida/Georgia in 2000
- Major equine epizootic in 2001, especially in South Atlantic region
- Only sporadic human cases despite intense epizootic in some areas
- Prolonged transmission season observed
- Bird and crow surveillance remain effective

WNV-Positive Mosquito Species Reported in the United States, 2001*

<i>Culex</i>	<i>Aedes</i>	<i>Ochlerotatus</i>	<i>Anopheles</i>	<i>Other</i>
<i>pipiens</i>	<i>albopictus</i>	<i>atlanticus</i>	<i>barberi</i>	<i>Cs. melanura</i>
<i>restuans</i>	<i>cinereus</i>	<i>canadensis</i>	<i>punctipennis</i>	<i>Cq. perturbans</i>
<i>quinq</i>	<i>vexans</i>	<i>cantator</i>	<i>atropos</i>	<i>Deinocerites cancer</i>
<i>salinarius</i>		<i>japonicus</i>	<i>crucians</i>	<i>Ps. columbiae</i>
<i>nigripalpus</i>		<i>sollicitans</i>	<i>quadrimaculatus</i>	<i>Orthopodomyia signifera</i>
		<i>taeniorhynchus</i>		<i>Uranotaenia sapphirina</i>
		<i>triseriatus</i>		
		<i>trivittatus</i>		

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VECTOLEX AND VECTOBACK FIGHT WNV

Both VectoBac and VectoLex are highly effective against the species most suspected to carry WNV. Both control *Culex pipiens*, *Culex restuans* and *Culex salinarius*. VectoBac G controls *Aedes vexans* and VectoLex controls *Culex* mosquitoes that colonize floodwaters after the *Aedes* hatch. Contact your Valent BioSciences vector sales representative with any additional questions.



Sometimes, silence is golden.

Works Harder

VectoLex[®]

Lasts Longer

DEVELOP WNV PREVENTION PROGRAMS NOW

In three short years the West Nile Virus (WNV) has spread at an astonishing rate. “We don’t know how widespread West Nile Virus might become so districts should be vigilant about surveillance and control programs for the next couple of years,” says Paul Reiter, chief of the Centers for Disease Control and Prevention’s WNV project at the Harvard School of Public Health. “The best preparation districts can do is to develop prevention and control strategies now.”

Lisa Conti, state public health veterinarian for the Florida Department of Health, agrees. “California and Texas appear to be strategically prepared for WNV,” says Conti. This is despite the fact that WNV hasn’t moved west of the Rocky Mountains.

Public health officials hoped the virus wouldn’t survive the winter, but that hasn’t been the case. “People need to be aware that WNV is overwintering and it may even be a year-round problem in southern states,” says Conti.

Conti strongly suggests that agencies work together, as they did in Florida, to develop control strategies including surveillance programs identifying dead birds and programs that inform the public about reducing mosquito breeding sites and preventing being bitten. “Districts should at least conduct population surveillance and possibly test pooled mosquitoes for WNV.”

Both Conti and Reiter note national guidelines advise districts to follow an integrated pest management program to fight WNV. Since Florida saw a tremendous number of horses infected last year with WNV, the state recommends vaccinating horses.

WNV Studies

While *Culex pipiens* and *Culex restuans* are the principal vectors of WNV, Reiter says there are more than 20 species that have tested positive as carriers but the significance of these other species as vectors of WNV is not yet known.

Reiter leads a CDC program at the Harvard School of Public Health that is studying transmission of the virus. The project is studying the feeding habits, behavior and overwintering survival rates of mosquitoes. Last year, Reiter observed that the *Culex* mosquitoes feed in the canopy of trees rather than near the ground.

Reiter is also evaluating the effectiveness of ultra low-volume sprays (ULV). He found many districts were applying at very low rates, reducing the effectiveness of treatments. Reiter recommends districts monitor mosquito populations for several days before and after spray treatments to help gauge the effectiveness of ULV applications.

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WNV Activity in 2001

1999

28 counties in four states reported any WNV activity

2000

136 counties in 12 states and Washington, D.C. reported any WNV activity

2001

358 counties in 27 states and Washington, D.C. reported any WNV activity

Reported Human WNV Disease Cases in the United States, 1999-2001*

Year	Cases	States	Counties	Onset Dates
1999	62	1	6	Aug. 2 – Sept. 24
2000	21	3	10	July 20 – Sept. 27
2001	66	10	39	July 13 – Dec. 7

WNV Surveillance in the United States in 2001*: Summary of Dead Bird Data

- 69,102 dead birds reported
- 32,918 tested (48 percent of reported)
- 7,338 WNV-positive (22 percent of tested)
 - 5,161 in genus *Corvus* (71 percent)
 - 2,177 in other genera (29 percent)
- 54 percent of tested crows "positive"
- 9 percent birds from other species "positive"

* Reported as of 3/13/2002.

Note: The CDC and ArboNET, a cooperative surveillance between the CDC's Division of Vector-Borne Infectious Diseases and 54 state and local health departments, provided the information and data presented here.