



“I AM ONE”

**A new, highly effective, reduced risk  
mosquito adulticide is coming.**



**Mid-Atlantic Mosquito Control Association Conference**

**February 2009**

**Charlie Pate**

# Etofenprox Background

- ◆ Etofenprox molecule identified in the early '80s by Mitsui-Toatsu
- ◆ Developed for crop insects in Japan and Europe
- ◆ First US registrations were received in the early 2000's
- ◆ Registrations are primarily consumer products: dog & cat formulations, aerosols, and foggers

# Etofenprox Retail Products



02.16.2009 09:30

# Etofenprox Background

- ◆ Unique molecule: non-organophosphate, non-carbamate and not a traditional pyrethroid
- ◆ Broad spectrum control
- ◆ Controls: fleas, ticks, moths, weevils, white flies, mosquitoes, roaches, and many other pests
- ◆ Use rates are comparable to currently available products

# Etofenprox Background

- ◆ Central Life Sciences acquired the rights to Etofenprox in 2005
- ◆ Central Life Sciences has been marketing the consumer products
- ◆ Currently developing other product lines including a mosquito adulticide



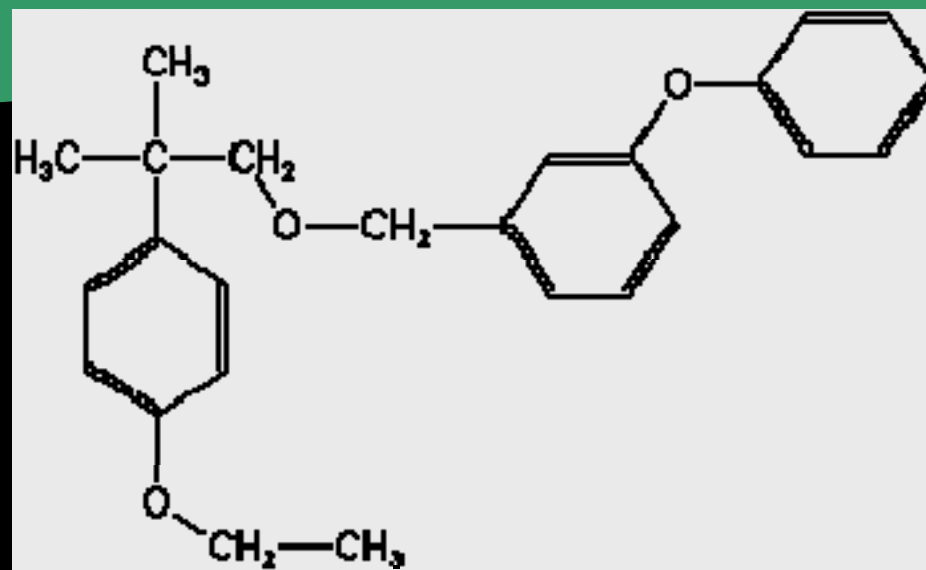
**Zenivex**<sup>TM</sup>  
E20

 **CENTRAL** *Life Sciences*

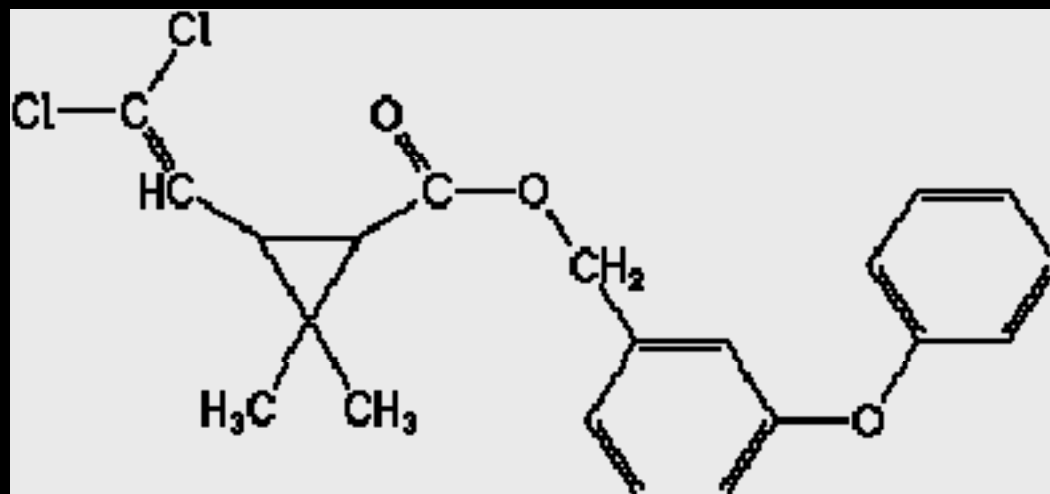
# Chemical Classification

- ◆ Currently, all commercially available pyrethroids are esters
- ◆ Zenivex is not an ester (it's an ether)
- ◆ The classification "non-ester" means it does not fall into current EPA review of pyrethroid chemistries
- ◆ Molecule contains only carbon, hydrogen, and oxygen

## ETO FENPROX



## PERMETHRIN



# Etofenprox

## Mode of action

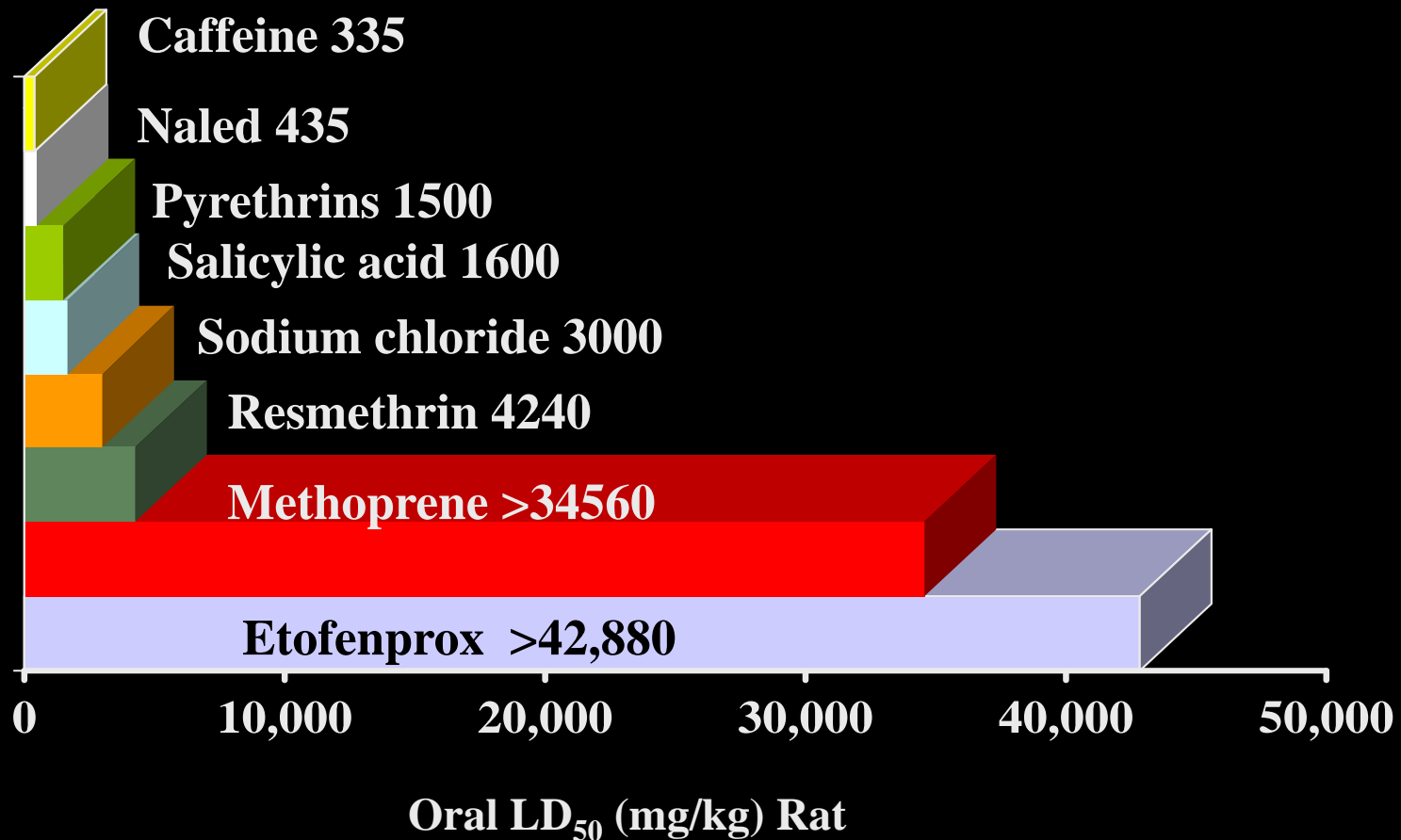
- ◆ Similar mode of action to traditional pyrethroids
- ◆ Sodium channel blocker
  - Hence the broad spectrum of activity
- ◆ Contact or ingestion toxicant
- ◆ Quick, permanent knockdown

# Etofenprox Toxicology

- ◆ Very low mammalian toxicity
- ◆ Low avian toxicity
- ◆ As with pyrethroids, mindful of fish and freshwater invertebrates
- ◆ EPA classifies it as reduced risk pesticide for mosquito control

# COMPARITIVE ACUTE TOXICITIES

Larger value = Less toxicity



# Zenivex formulation


- ◆ 1.5 lb. Etofenprox per gallon
- ◆ 20% Etofenprox by weight
- ◆ Oil based formulation for ULV: neat or diluted applications
- ◆ No synergist, that is, no PBO
- ◆ Packaging will be 2.5 and 30 gallon containers.
- ◆ 30's will be closed loop returnable/refillable

# Zenivex Label Highlights

- ◆ Application rates: 0.00175, 0.0035, 0.007 pounds etofenprox per acre
- ◆ Aerial, vehicle mounted ground, or hand applied applications
- ◆ Droplet range for ground is 10-30 microns
- ◆ Droplet range for aerial <60 microns
- ◆ No aquatic set backs
- ◆ Signal word: Caution

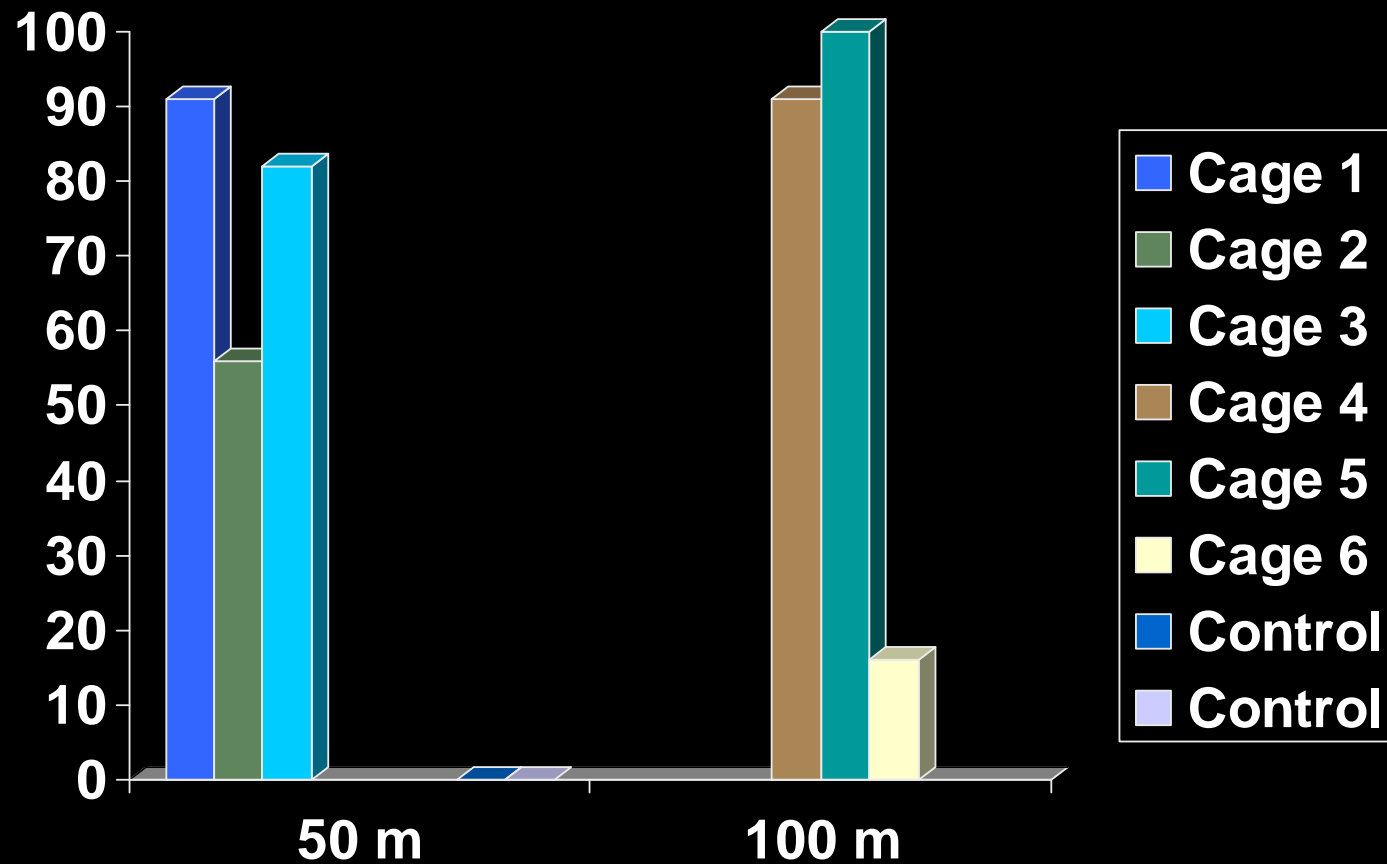
# Zenivex Efficacy Trials



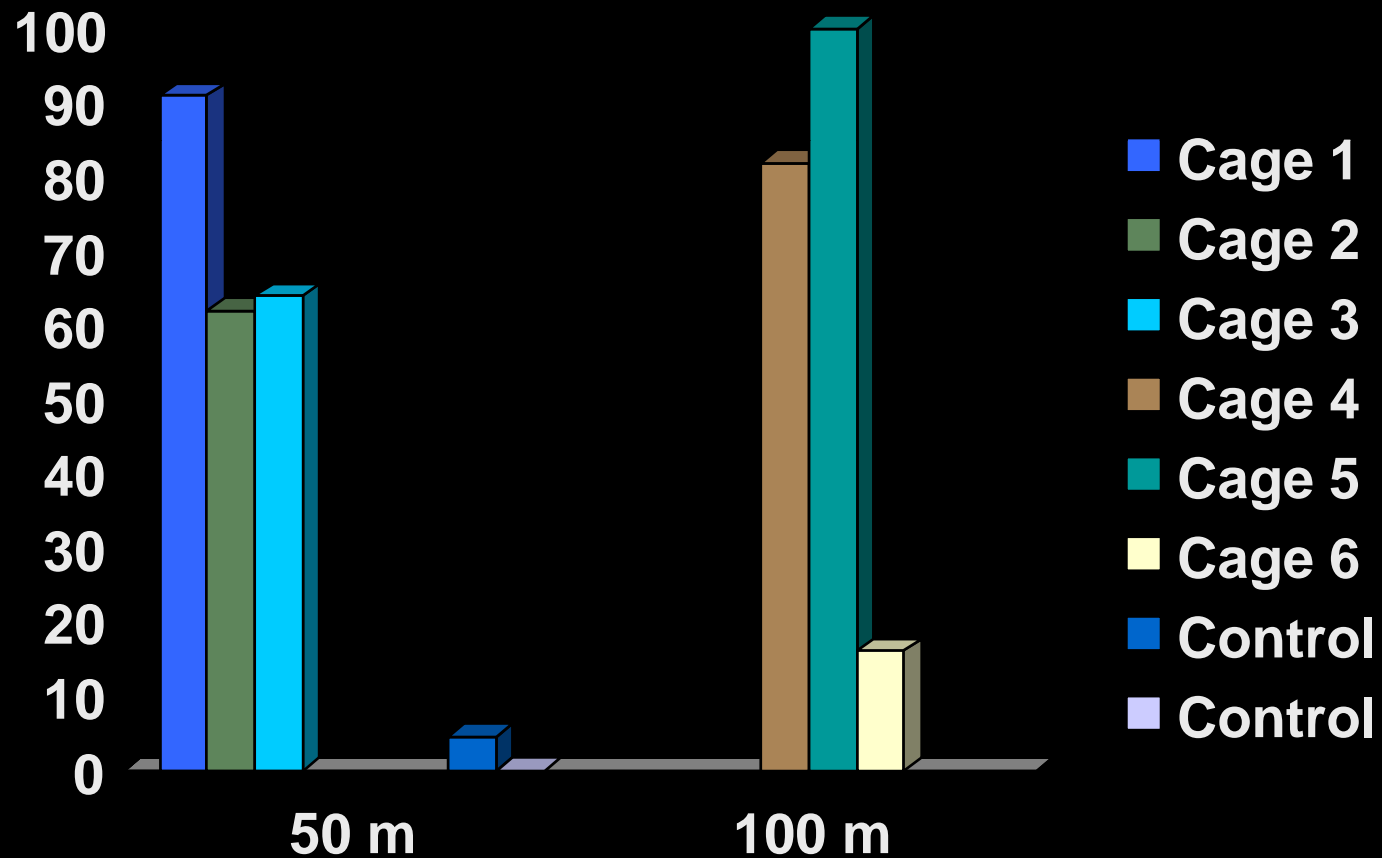
A green decorative shape, resembling a wide arrow pointing to the right, is positioned at the top of the slide. It is wider on the left side and tapers to a point on the right side.

Manatee County Mosquito  
Control  
Palmetto, Florida  
Ground ULV Etofenprox  
Trials  
July 23, 2008

# Manatee County Mosquito Control Palmetto Florida 12 hour % Mortality

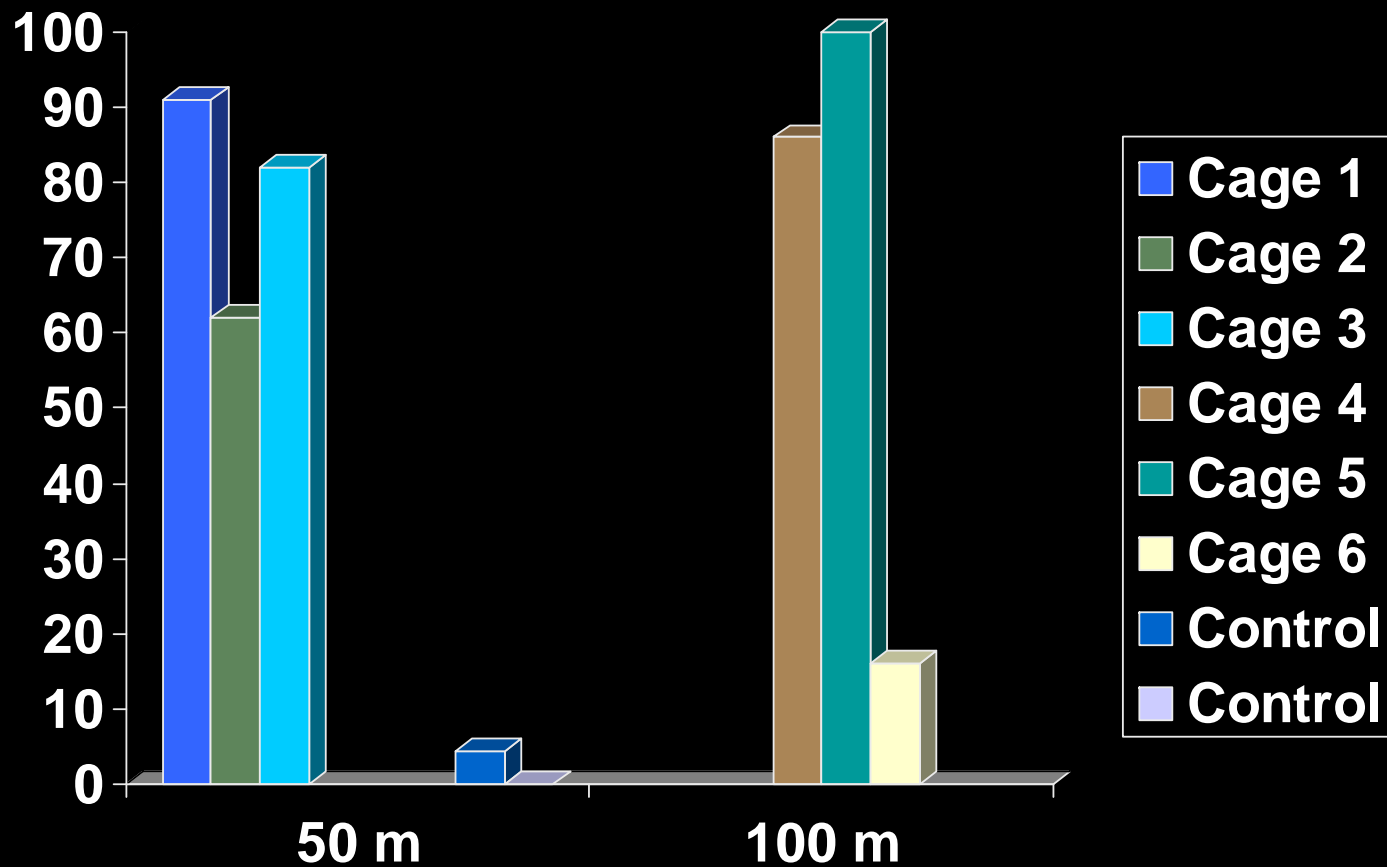


# Manatee County Mosquito Control. Palmetto Florida 18 hour % Mortality



# Manatee County Mosquito Control Florida

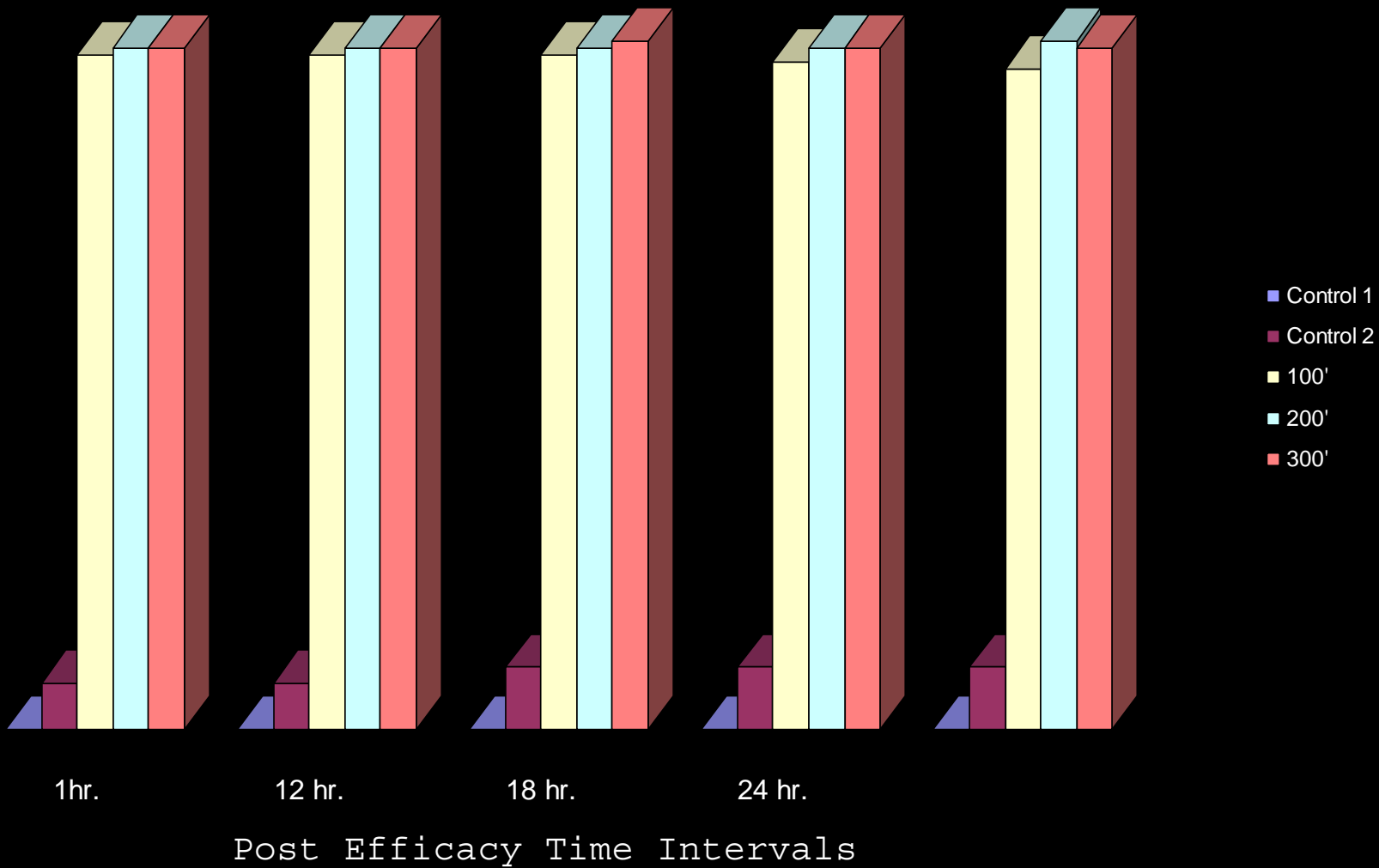
## 35 hour % Mortality





Salt Lake Mosquito  
Abatement  
Ground ULV Etofenprox  
Trials  
August 12, 2008

Etofenprox Efficacy Trial Salt Lake City Mosquito Abatement  
August 12, 2008



# Zenivex Performance Summary

London Fog, Grizzly, Cougar, Mozzie, and Phoenix foggers were used

Results demonstrated comparable mortality either diluted or undiluted

Quick permanent knockdown was observed in all trials (within the first 20 minutes)

These trials demonstrated 90% or better mortality across a wide range of mosquito species

# Zenivex performance

## Species Evaluated

*Aedes aegypti*

*Aedes albopictus*

*Aedes dorsalis*

*Aedes melanimon*

*Aedes nigromaculis*

*Aedes vexans*

*Anopheles quadrimaculatus*

*Coquillettidia sp.*

*Culex nigripalpus*

*Culex pipiens*

*Culex tarsalis*

*Ochlerotatus nigromaculis*

*Ochlerotatus sollicitans*

Now we can cover you  
from above with

**Zenivex**<sup>TM</sup>  
E20

 **CENTRAL** *Life Sciences*

Mosquito control  
starts just below  
the surface...



# Altosid®

mosquito larvicide

