

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

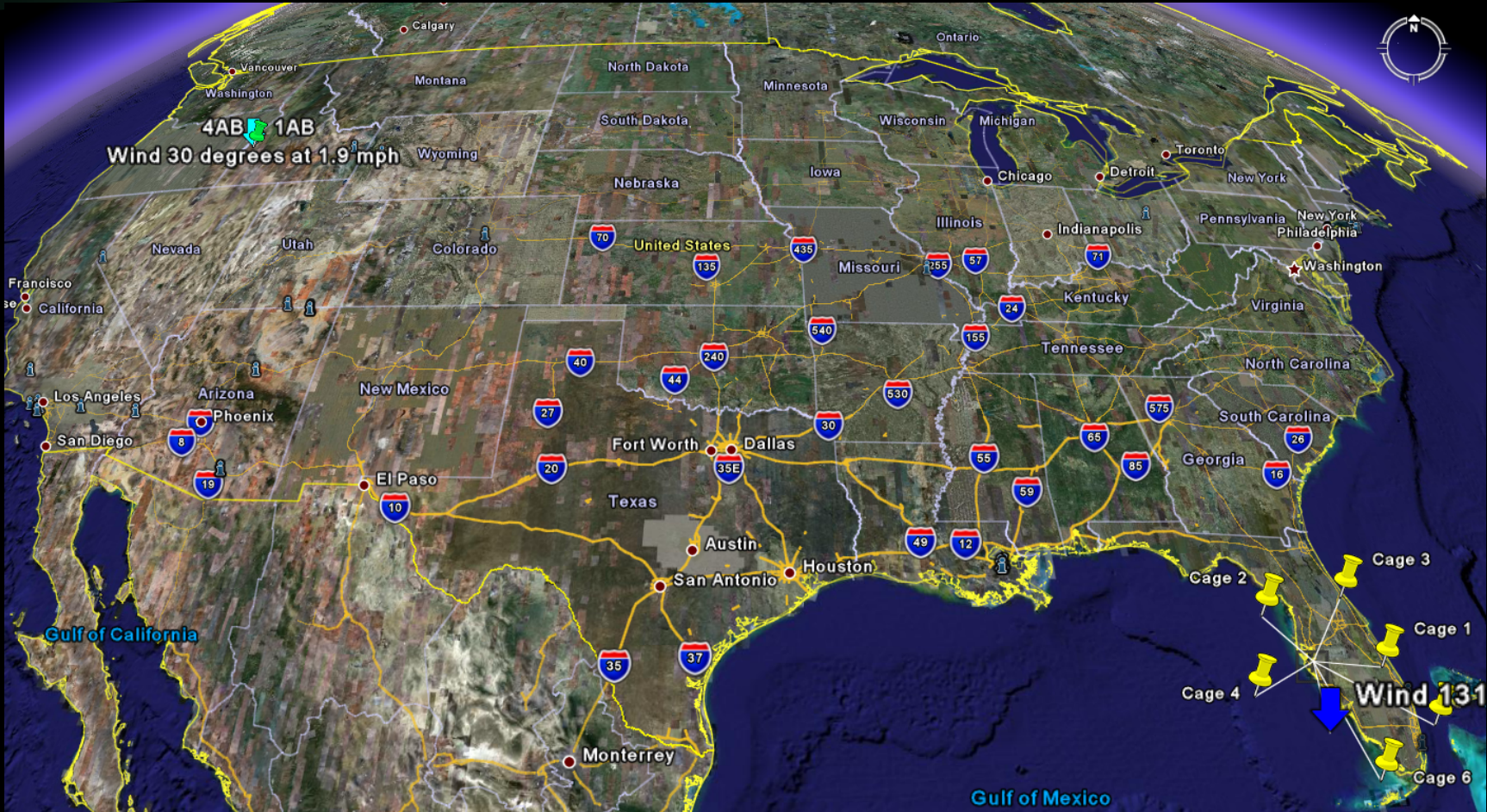


Zenivex Efficacy Trials 2008

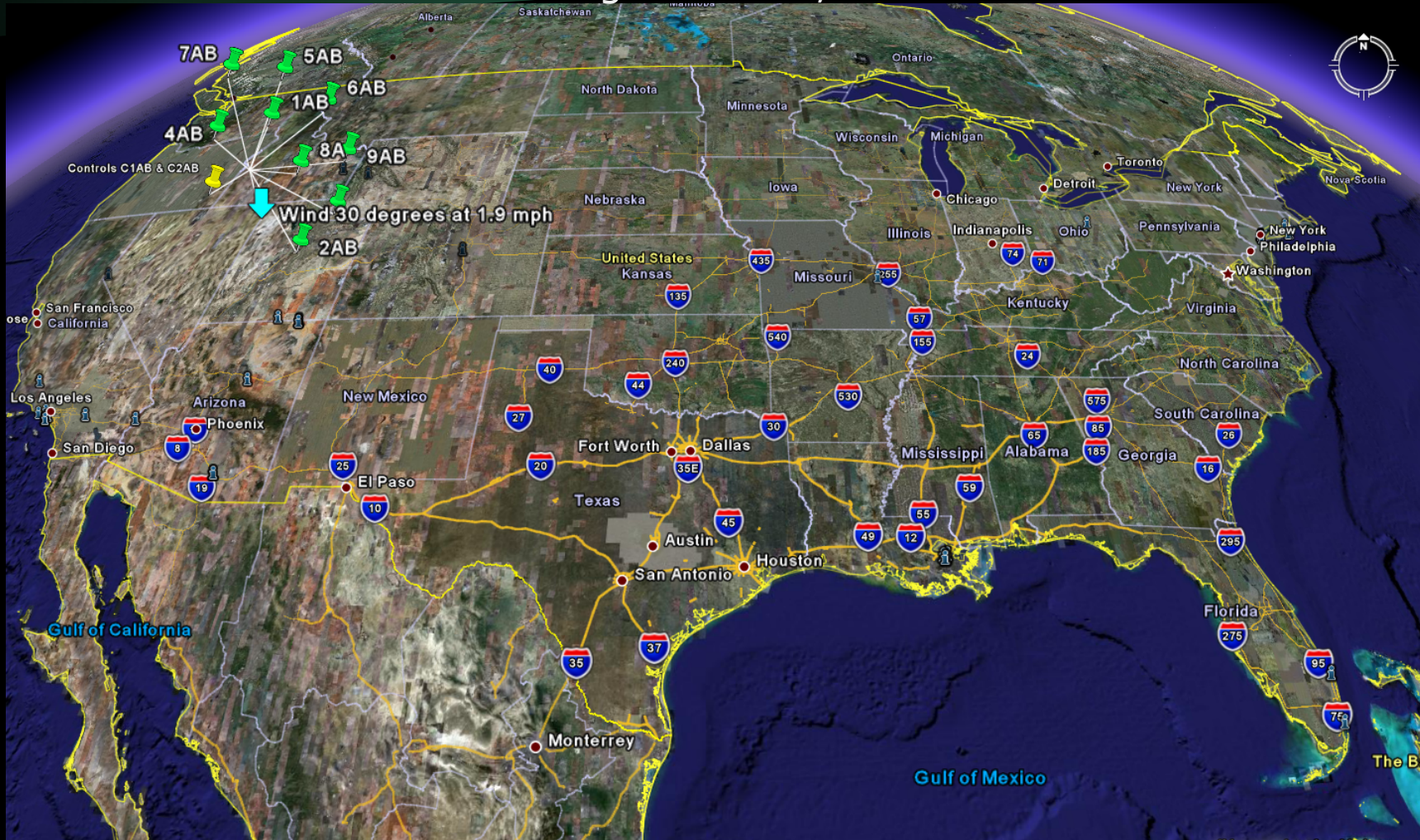
October 10-12, 2008

Bill Reynolds

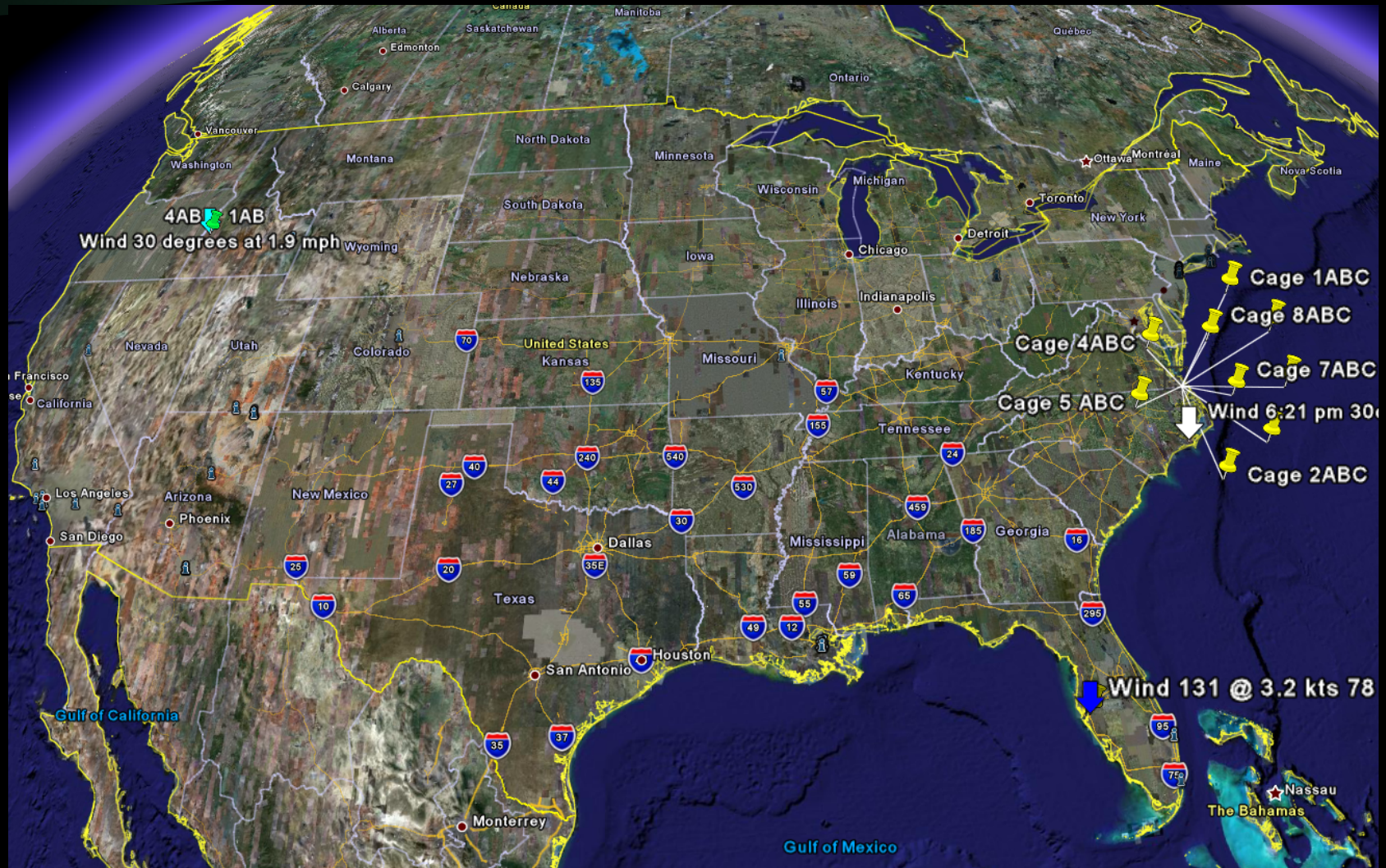
Manatee County Mosquito Control Palmetto, Florida Ground ULV Etofenprox Trials July 23, 2008



Gem County Mosquito Abatement District
Palmetto, Florida
Ground ULV Etofenprox Trials
August 26-27, 2008



Chesapeake Mosquito Control Commission Norfolk, Virginia Ground ULV Etofenprox Trials September 18, 2008



Zenivex Efficacy Trials

- ◆ More than 30 trials have been conducted over a range of rates
- ◆ 14 mosquito species have been tested so far
- ◆ Trials have been conducted in the Northeast, Southeast, South and the West.
- ◆ Results have been excellent at all label rates

Zenivex Efficacy Trials


- ◆ Testing was conducted according to standard procedures
- ◆ Ground ULV using caged mosquitoes (25+ per cage)
- ◆ Cages placed at 100, 200, 300 feet from spray line, plus non-treated controls
- ◆ A 300 foot swath was made with truck mounted ULV fogger

Zenivex Efficacy Trials

- ◆ Efficacy was observed at
 - 20 minutes (knockdown)
 - 1 hour
 - 12 hours
 - 24 hours
- ◆ Weather & flux deposition monitored
- ◆ Applications were made with diluted and undiluted Zenivex

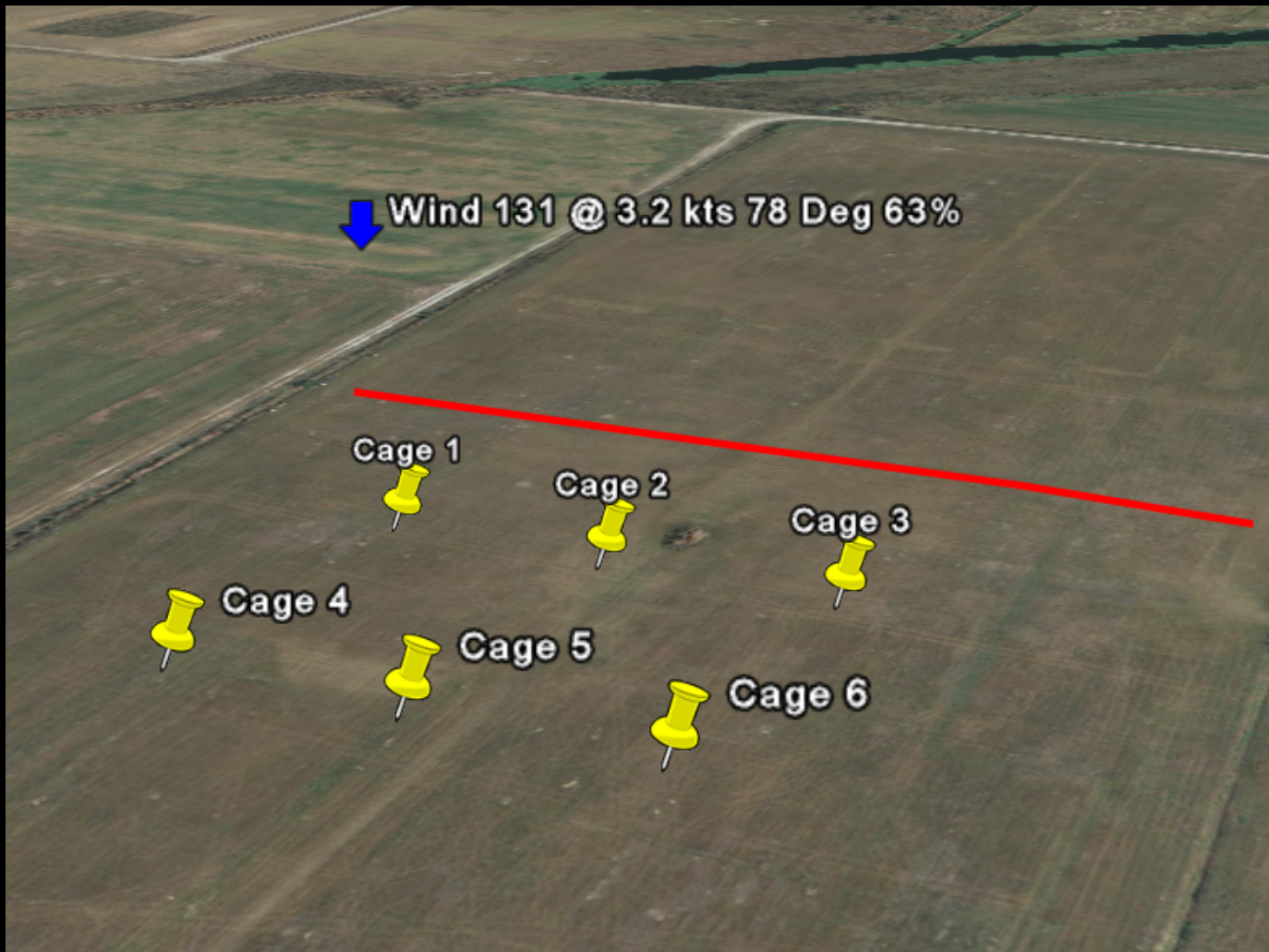
Zenivex Efficacy Trials





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

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



Species: Ochlerotatus taeniorhynchus

- Product Data :

- ◆ **Application rate – 0.0035 lb. AI/Acre**
- ◆ **Diluted BVA Oil 8:1**
- ◆ **Uvitex fluorescence tracer**
- ◆ **Flow rate 14.5 fl.oz./minute**

- Vehicle Data:

- ◆ **Vehicle speed 10 mph**
- ◆ **London Fog 18-20 VMD 14.1 @ 4psi**
- ◆ **Truck speed 10 mph**

- Site Data:

- ◆ **WHO cages-transfer 25 mosquitoes per cage**
- ◆ **Two WHO cages per site**
- ◆ **Spinning Impingers 1-teflon coated slides**
- ◆ **6-sites (3-50m – 3-100m from ULV fogging truck)**
- ◆ **Flux and deposition collection rods for fluorescence**

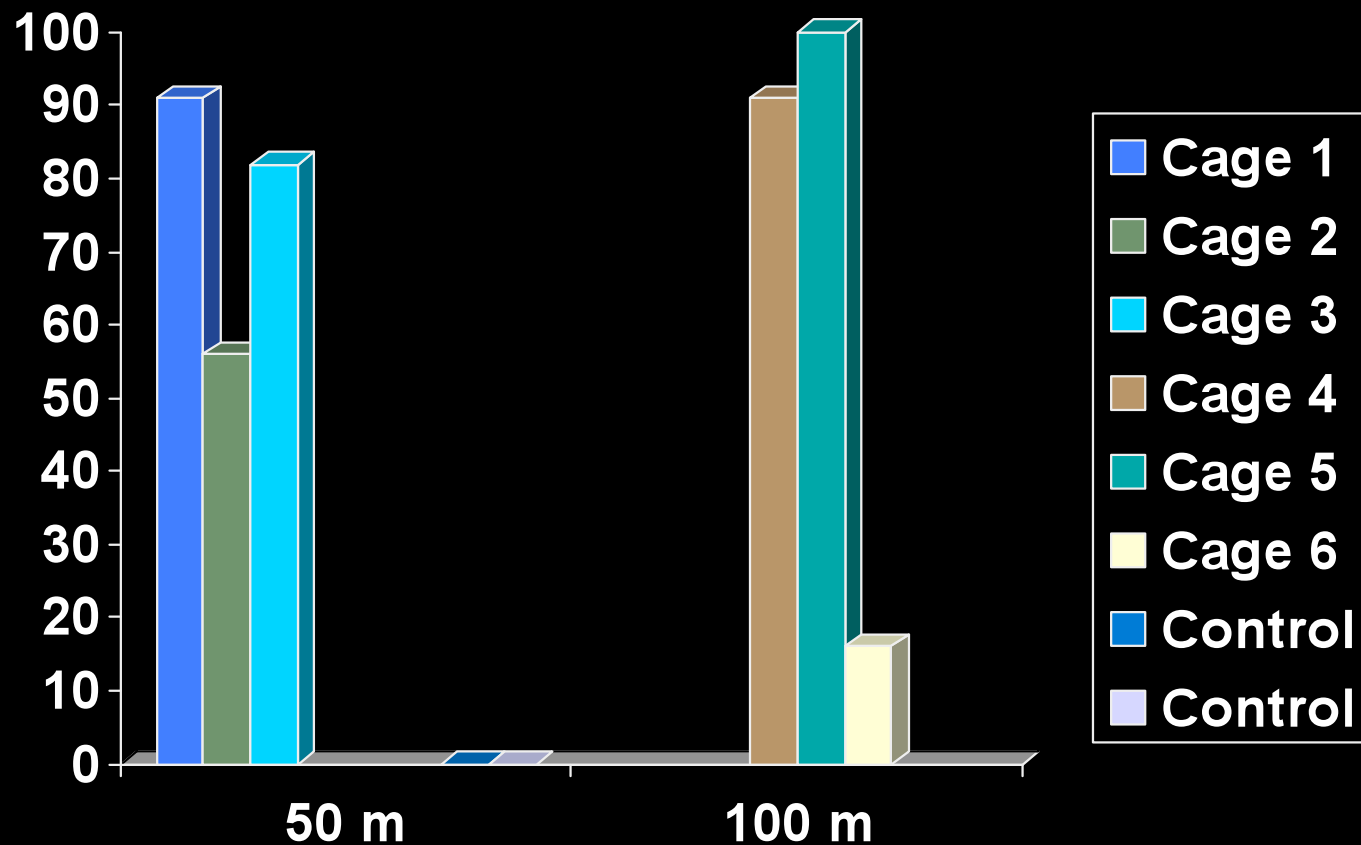
- Meteorology

Spray start 8:43 pm 119° @ 2.4 knots 78o 64%
Spray stop 8:44 pm 131° @ 3.2 knots 78o 63%

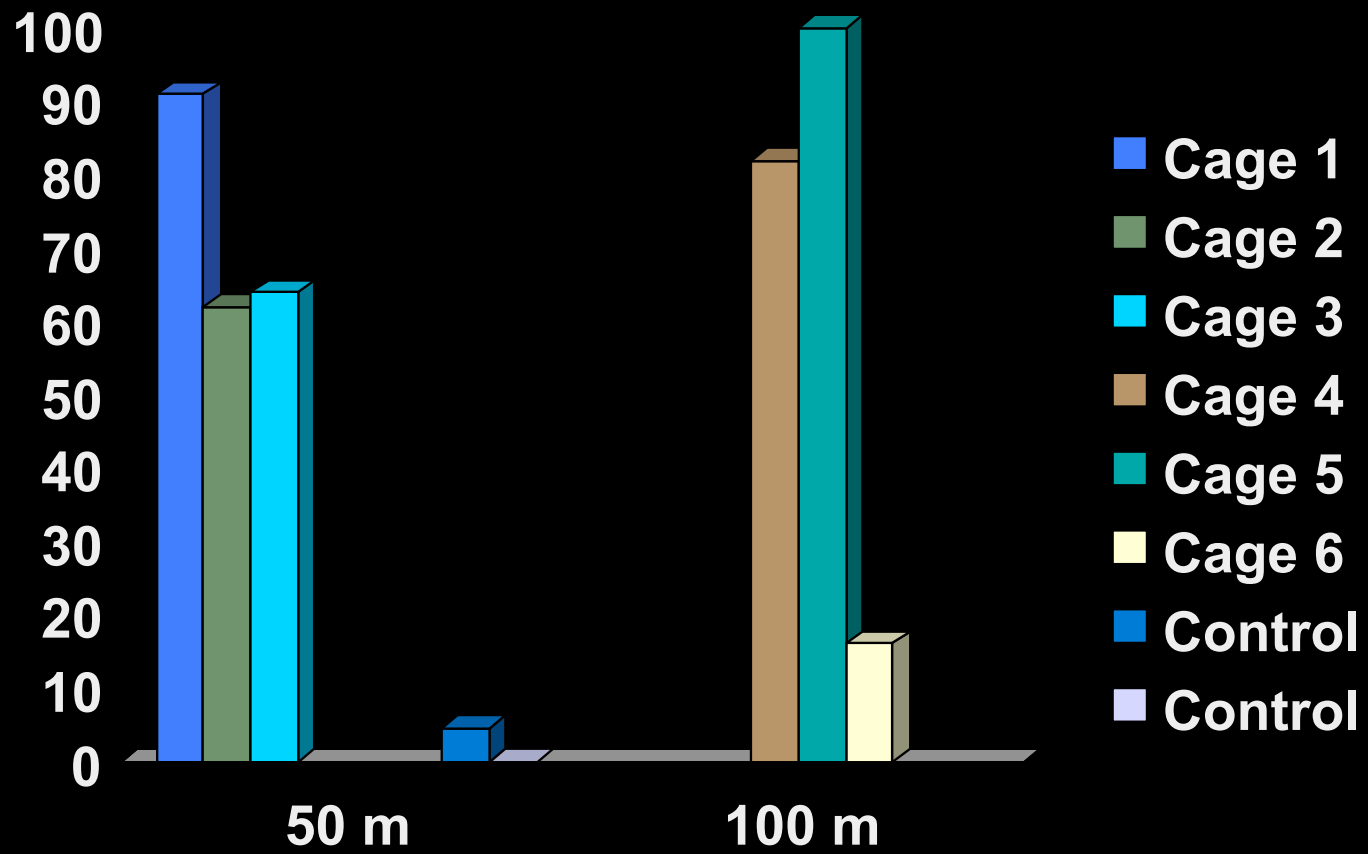
- Mosquitoes

**Natural population-
*Ochlerotatus
taeniorhynchus***

Manatee County Mosquito Control Palmetto Florida 12 hour % Mortality

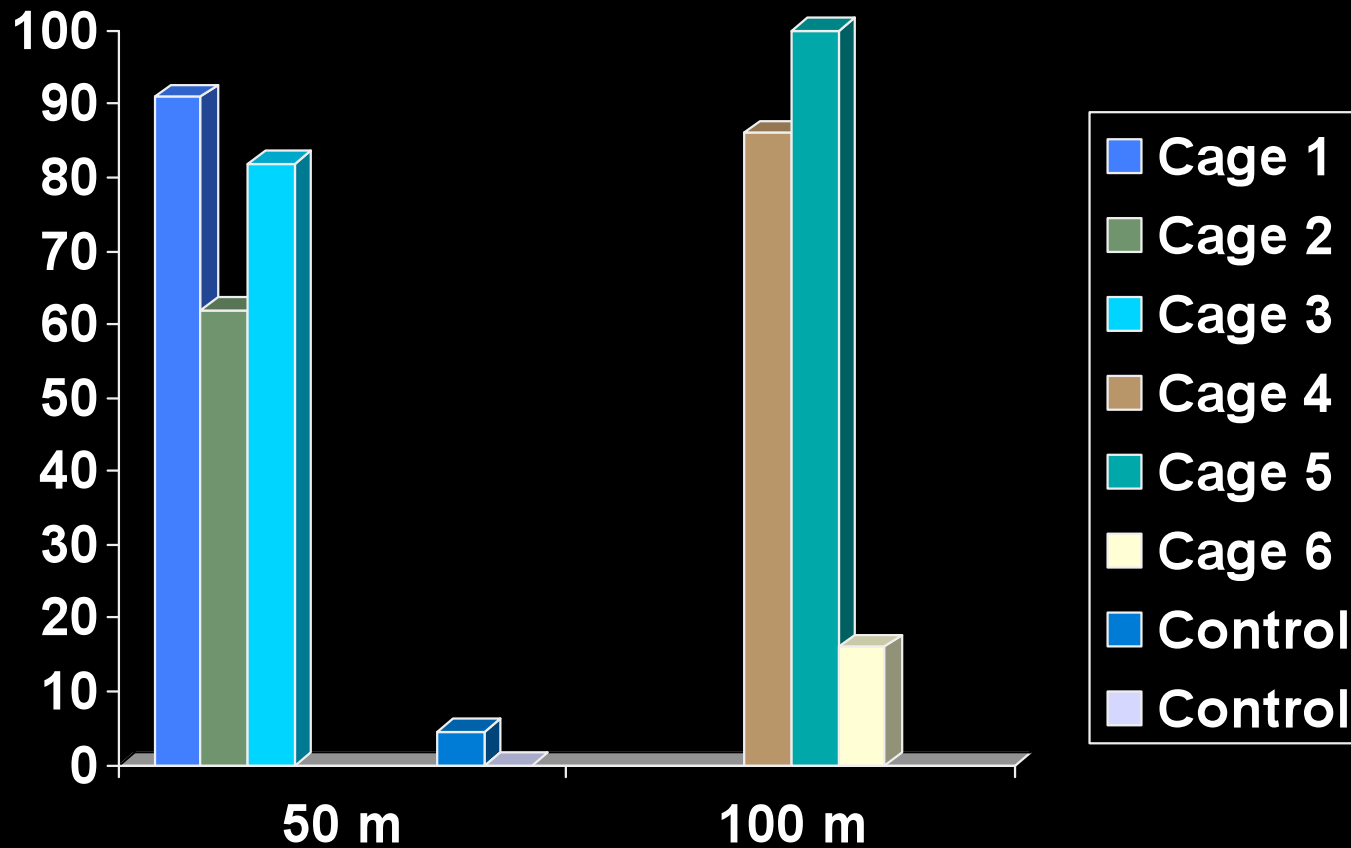


Manatee County Mosquito Control. Palmetto Florida 18 hour % Mortality

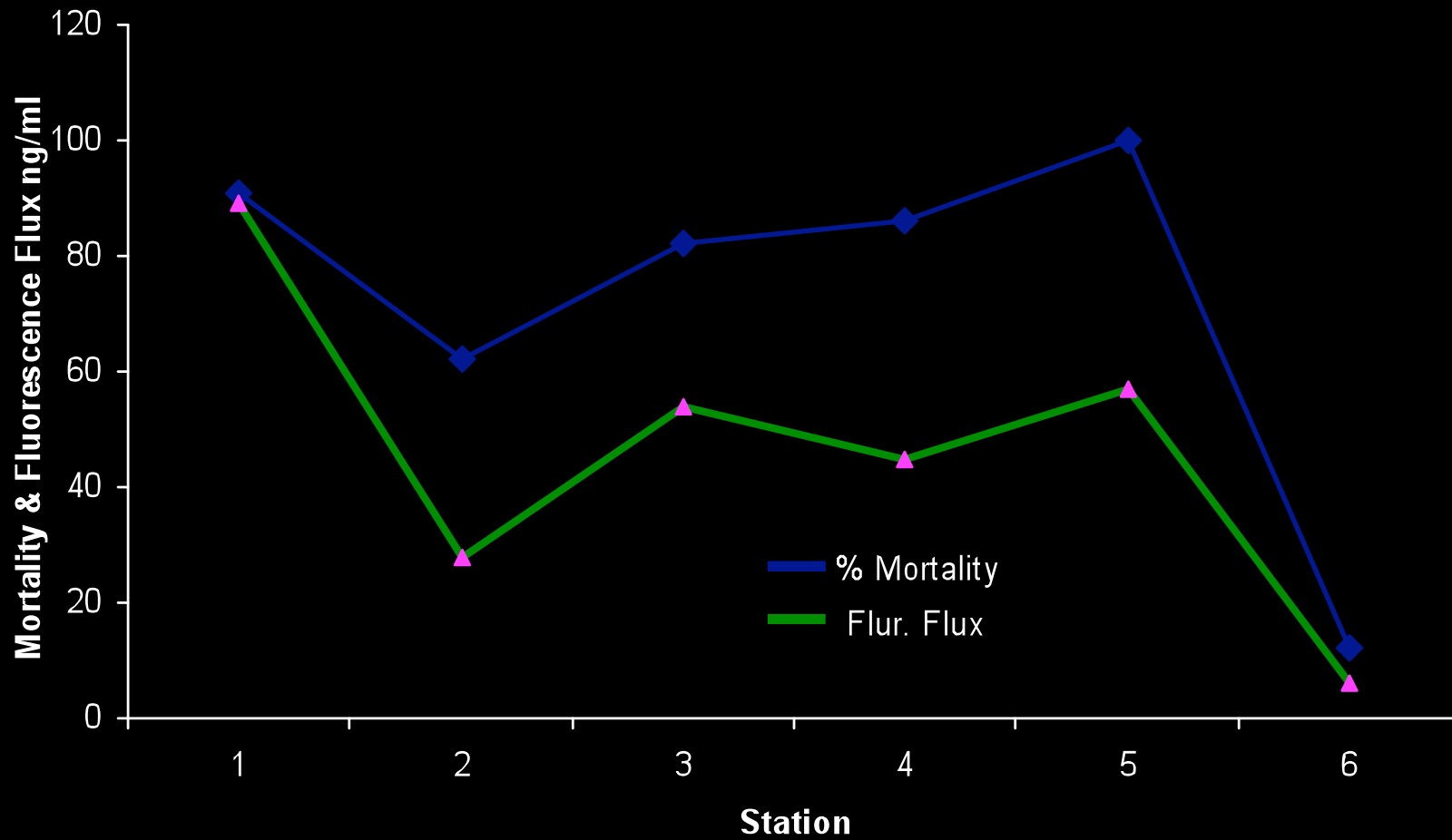


Manatee County Mosquito Control Florida

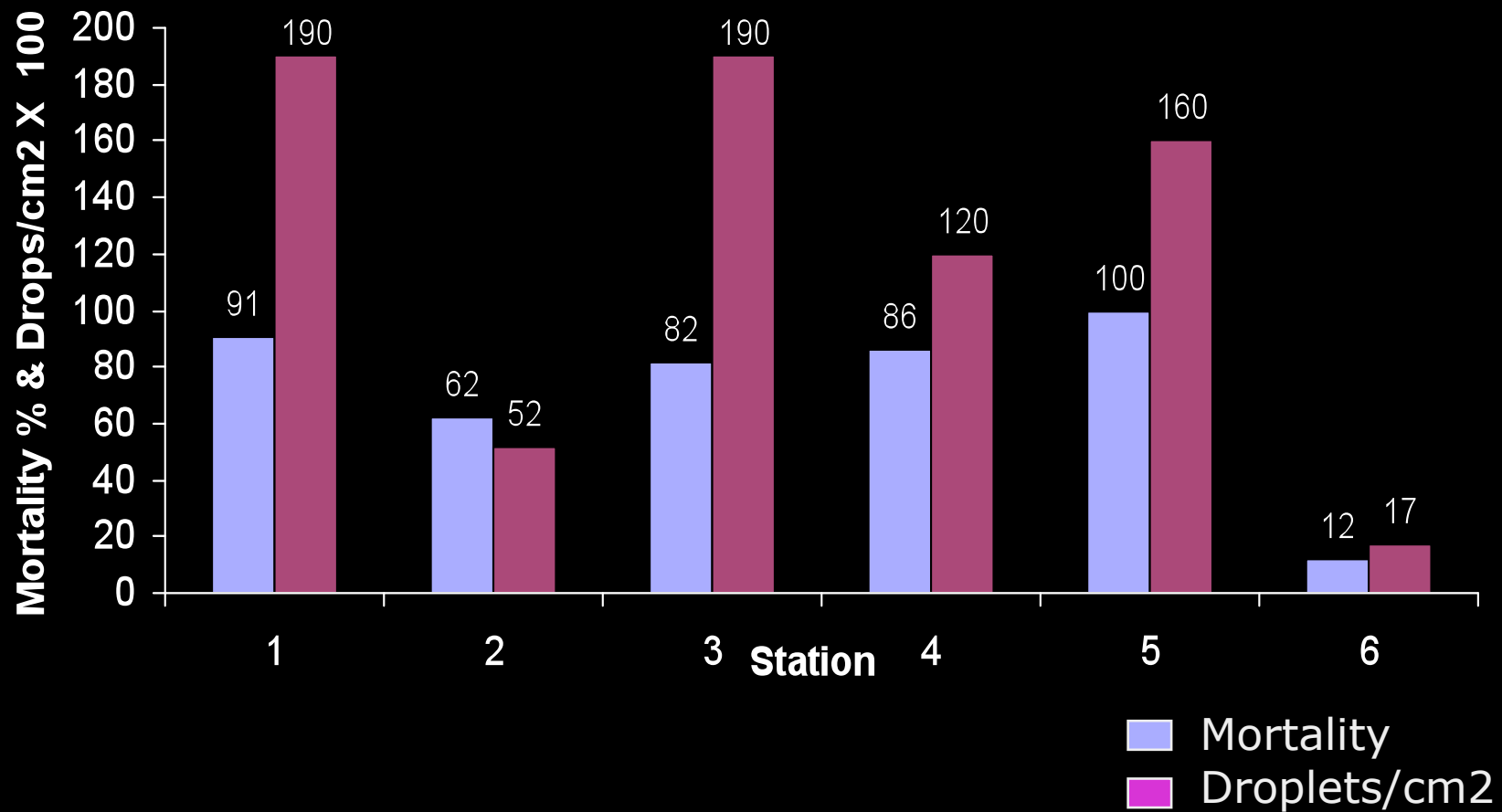
35 hour % Mortality



Mortality Relative to Fluorescence Flux



Mortality Relative to Drops/cm2





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

Salt Lake Mosquito Abatement Etofenprox Trials August 12, 2008



Species: Cx. Torsalis & Cx. Pipiens

– Product Data:

- ◆ **Application rate – 0.0035 lb. AI/Acre**
- ◆ **2 parts BVA- 1 part Etofenprox**
- ◆ **Flow rate 5.48 fl.oz./minute**

– Vehicle Data :

- ◆ **Phoenix Fogger VMD 18.5 @ 1 psi**
- ◆ **Truck speed 10 mph**
- ◆ **Variable flow control**

– Site Data:

- ◆ **4" cardboard constructed cage
nylon tulle screen**
- ◆ **20-25 mosquitoes per cage**
- ◆ **10-minutes post application mosquitoes
transferred to clean holding cage**
- ◆ **Two cages per site**
- ◆ **Spinning Impingers 1-teflon coated slides**
- ◆ **9-sites (3-100' – 3-200' – 3-300' from ULV fogging
truck)**

- Meteorology

**Spray start 9:25 pm
340°@ 2.8 knots 68o 28%**

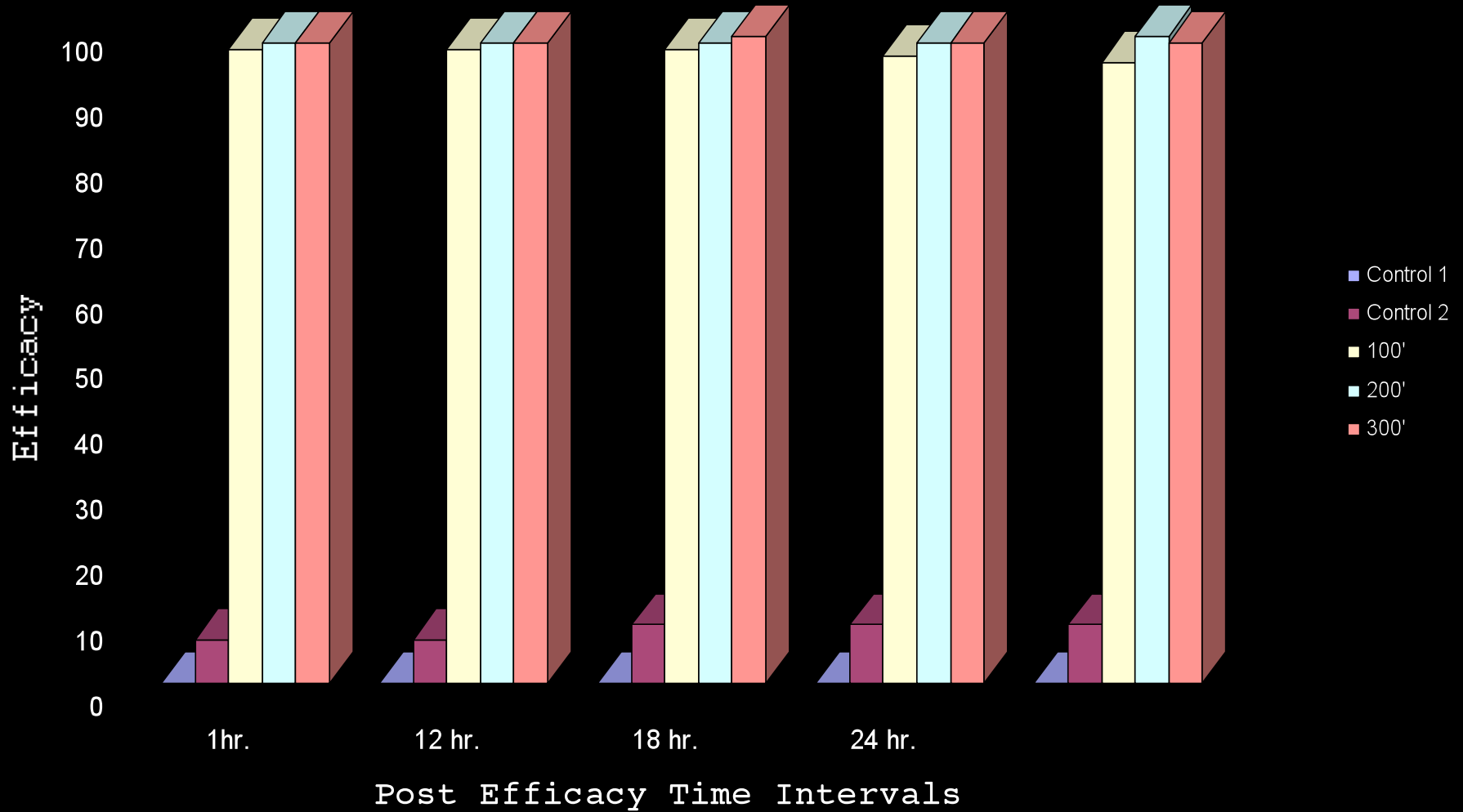
**Spray stop 9:26 pm
340°@ 2.8 knots 68o 28%**

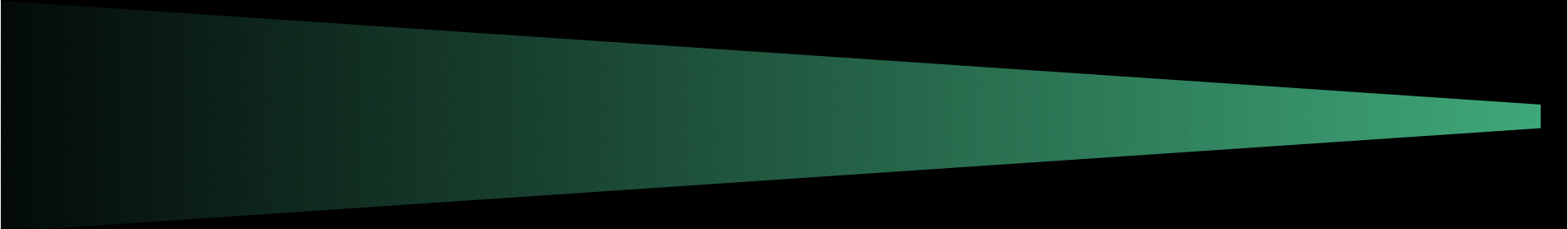
**Ten-minutes post spray stop
time
340° @ 1 mph 68o 28%**

- Mosquitoes

**Natural population- *Cx. Torsalis*
&
*Cx. Pipiens***

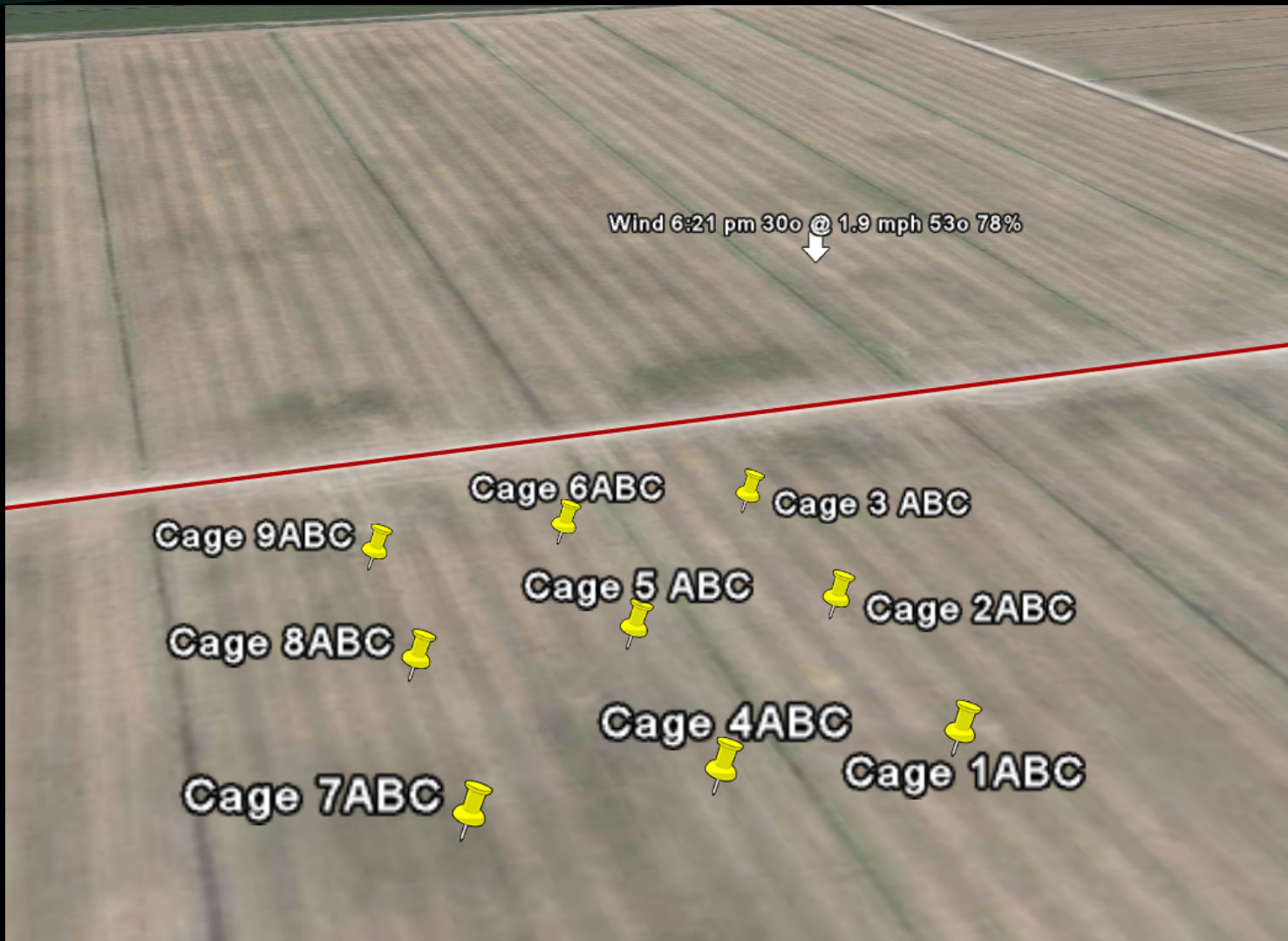
Etofenprox Efficacy Trial Salt Lake City Mosquito Abatement
August 12, 2008





Chesapeake Mosquito Control
Commission
Norfolk, Virginia
Ground ULV Etofenprox Trials
September 18, 2008

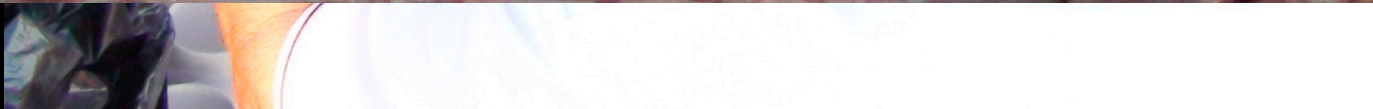
**Chesapeake Mosquito Control Commission
Norfolk, Virginia
Ground ULV Etofenprox Trials
September 18, 2008**



◆ *Species: Culex Quinquefasciatus*

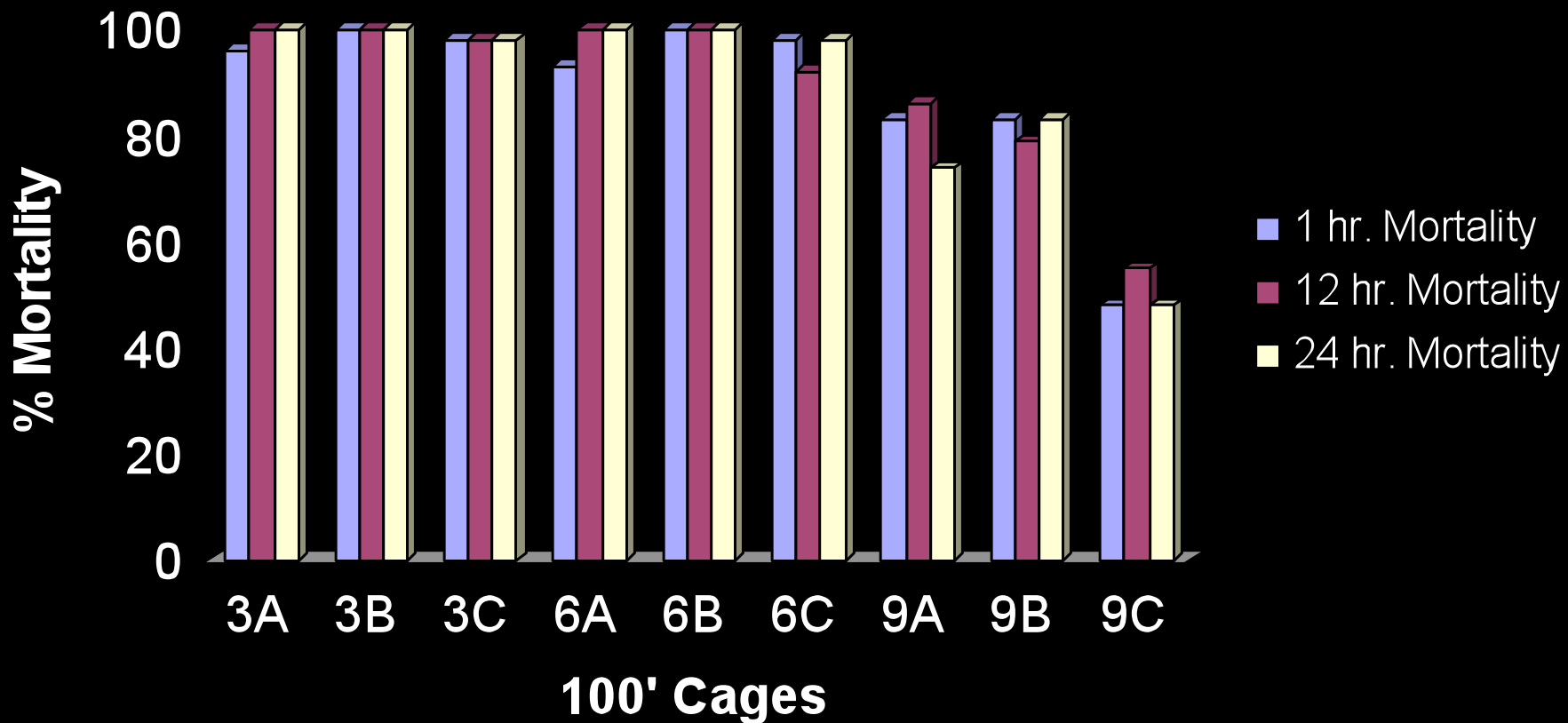
- Product Data:
 - ◆ Application rate – 0.0035 lb. AI/Acre
 - ◆ Diluted BVA Oil 2 parts BVA- 1 part Etofenprox
 - ◆ Flow rate 5.48 fl.oz./minute
- Vehicle Data:
 - ◆ Truck speed 10 mph
 - ◆ Variable flow control
- Site Data:
 - ◆ 4" cardboard constructed cage w nylon tulle screen
 - ◆ 20-25 mosquitoes per cage
 - ◆ 10-minutes post application mosquitoes transferred to clean holding cage
 - ◆ Three cages per site
 - ◆ Spinning Impingers 1"-teflon coated slides
 - ◆ 9-sites (3-100' – 3-200' – 3-300' from ULV fogging truck)
- Meteorology
 - ◆ August 26, 2008 Trial
 - ◆ Start 6:21 pm 30o @ 1.9 mph 53° 78%
- Mosquitoes
 - ◆ September 18, 2008 trial *Culex Quinquefasciatus*

Chesapeake Mosquito Control
Commission
September 18, 2008



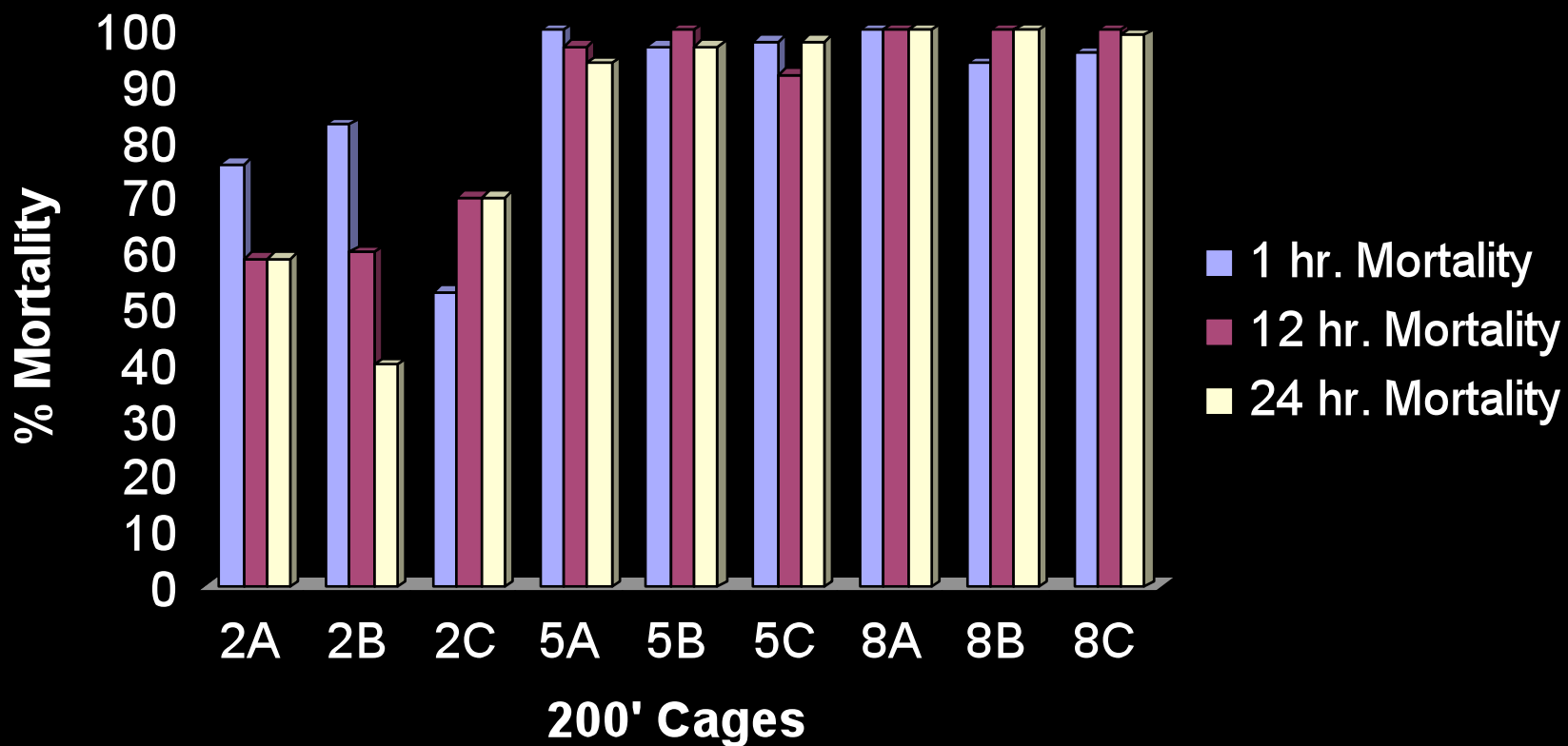
Chesapeake Mosquito Control Commission
September 18, 2008

Etofenprox Efficacy Trials Chesapeake, Virginia Sept, 18, 2008



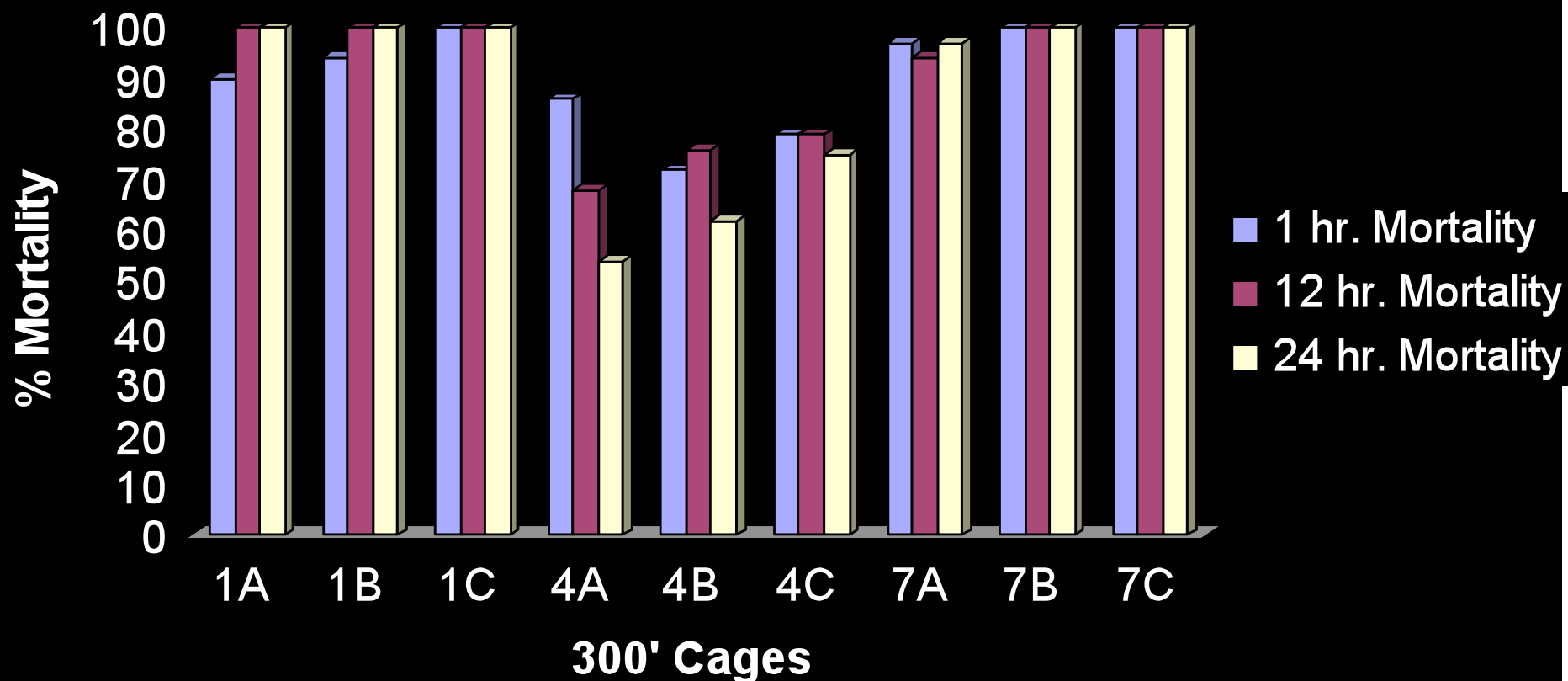
Chesapeake Mosquito Control Commission
September 18, 2008

Etofenprox Efficacy Trial
Chesapeake, Virginia September 18, 2008



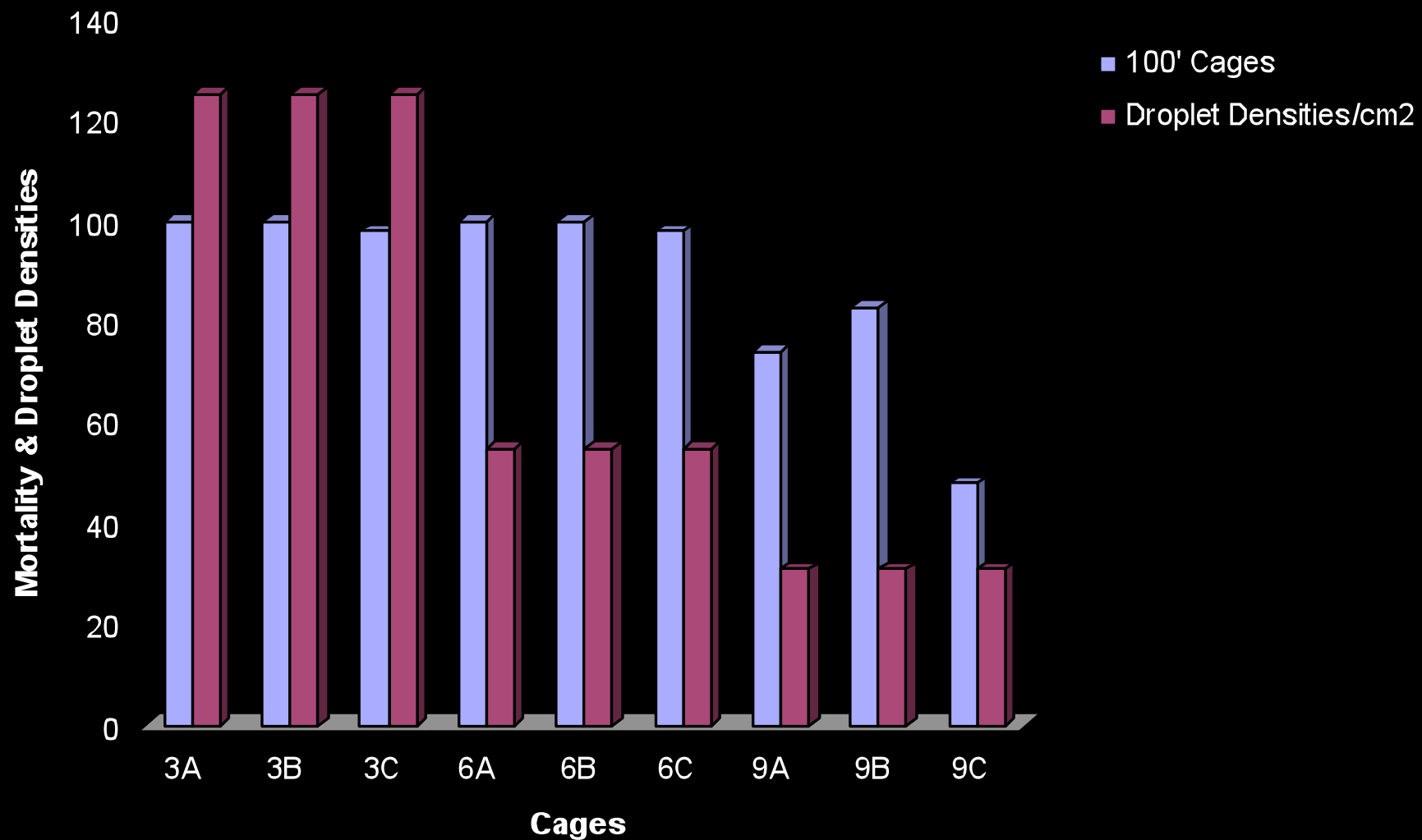
Chesapeake Mosquito Control Commission
September 18, 2008

Etofenprox Efficacy Trial Chesapeake, Virginia. Sept 18, 2008



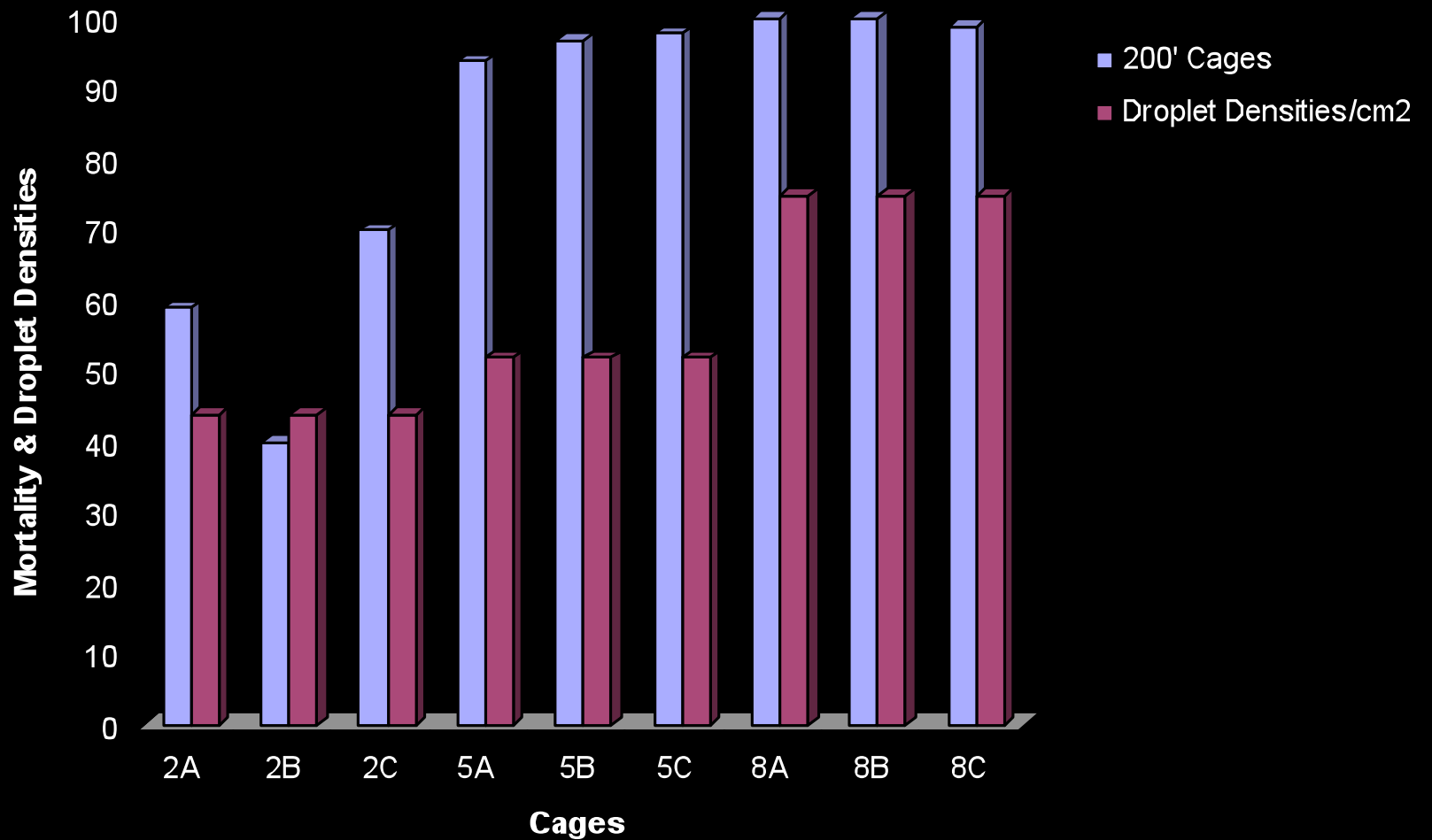
Chesapeake Mosquito Control Commission
September 18, 2008

Droplet Densities /cm² 100' Cages



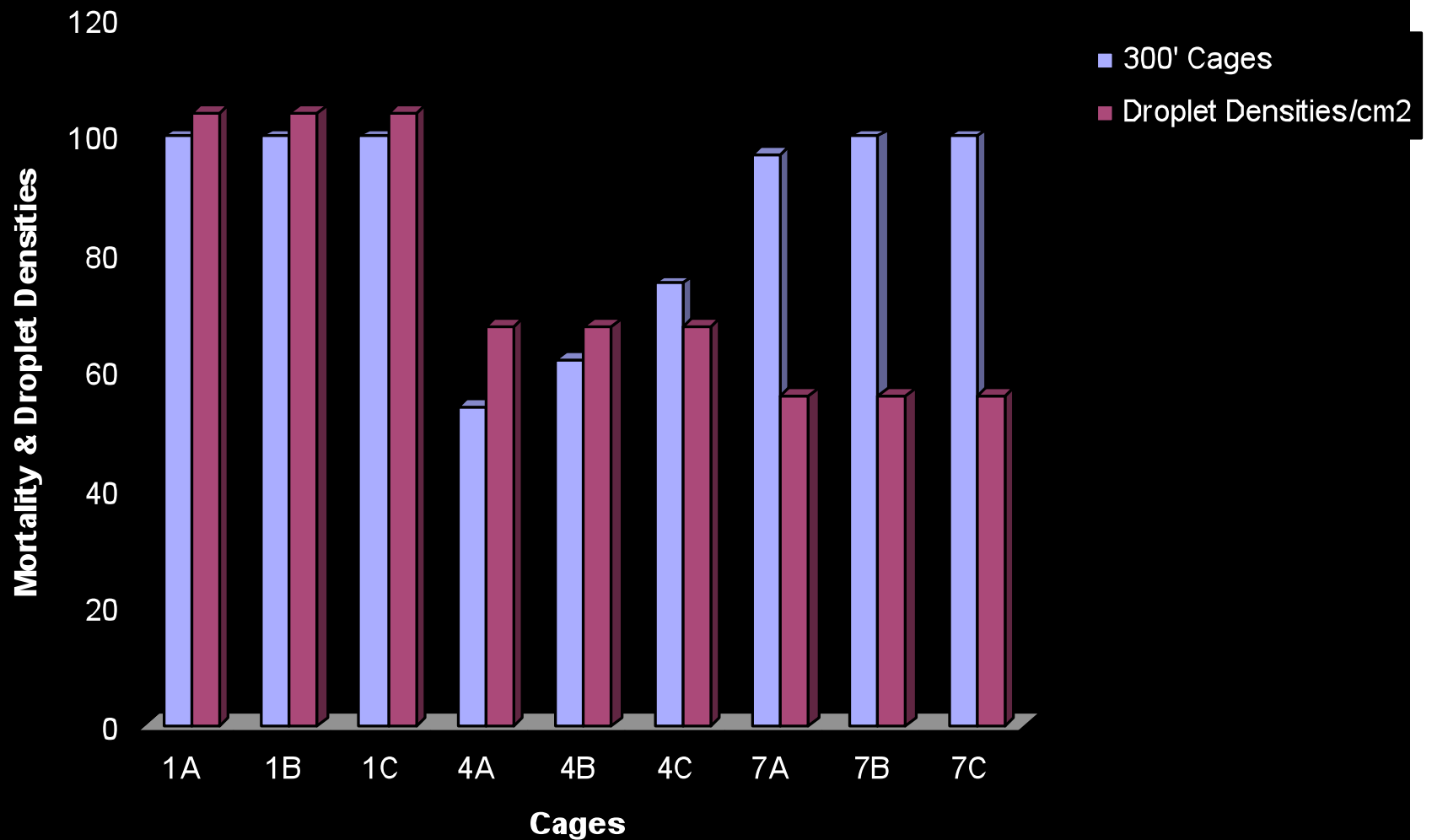
Chesapeake Mosquito Control Commission
September 18, 2008

Droplet Densities /cm² 200' Cages



Chesapeake Mosquito Control Commission
September 18, 2008

Droplet Densities /cm² 300' Cages



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

Ochlerotatus taeniorhynchus

Zenivex Conclusion

- ◆ Zenivex is a proven addition to the toolbox for control of adult mosquitoes
 - Excellent control across the rate range
 - Effective on all mosquito species tested so far
- ◆ Low toxicity profile
- ◆ No PBO synergist required
- ◆ Quick, permanent knockdown
- ◆ No odor
- ◆ No aquatic set-backs
- ◆ For use aerially and by ground
- ◆ Proven performance used neat or diluted

Special thanks to:

- ◆ **Georgetown County Mosquito Control, SC.**
- ◆ **Mosquito Research & Control Unit, Grand Cayman**
- ◆ **Manatee County Mosquito Control, FL.**
- ◆ **Orange County Mosquito Control, FL.**
- ◆ **Cascade County Mosquito Control, MT.**
- ◆ **Salt Lake City Mosquito Abatement, UT.**
- ◆ **Churchill County Mosquito Control, NV.**
- ◆ **Gem County Mosquito Abatement District, ID.**
- ◆ **Chesapeake Mosquito Control Commission, VA.**

◆ www.Altosid.com

 **CENTRAL** *Life Sciences*