

# Field Adulticide Efficacy Studies of Duet and Zenivex

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Commission



# ADULTICIDE TESTS 2008

- Chesapeake Mosquito Control helped test two different adulticides for two different companies.
- Central Life Sciences: ZENIVEX E20 (Etofenprox 20%)
- Clarke Mosquito Products: DUET (Prallethrin 1%, Sumethrin 5%, PBO 5%)
- We are simply reporting the results, not advocating any products...

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# Methods

- Both tests conducted at same location
- Open field standard nine point grid @ 100' intervals
- Same methods
- Control populations
- Truck-mounted ULV @ 10 mph with variable flow control



# Methods



# Methods



# ZENEVEX E20 (Etofenprox 20%)

- Open field test with standard nine point grid in southern Chesapeake on September 18, 2008
- Nine posts (3 – 100', 3 – 200', 3 – 300')
- Three test cages per grid post (2 lab-reared *Culex* and 1 local mix)
- Spinning Impingers with 1" teflon coated slides at each post



# ZENIVEX E20 (Etofenprox 20%)

- Control Mosquitoes: 4 cages of *Culex quinquefasciatus* (118) and 2 cages of mixed local species (83).
- Test Mosquitoes: 18 cages of *Culex quinquefasciatus* (provided by Wellmark) and 9 cages of mixed local species
- Local species: 362 *Anopheles*, 35 *Culiseta melanura*, 33 *Culex*, 25 *Ochlerotatus infirmatus*, and 23 *Psorophora ferox*.



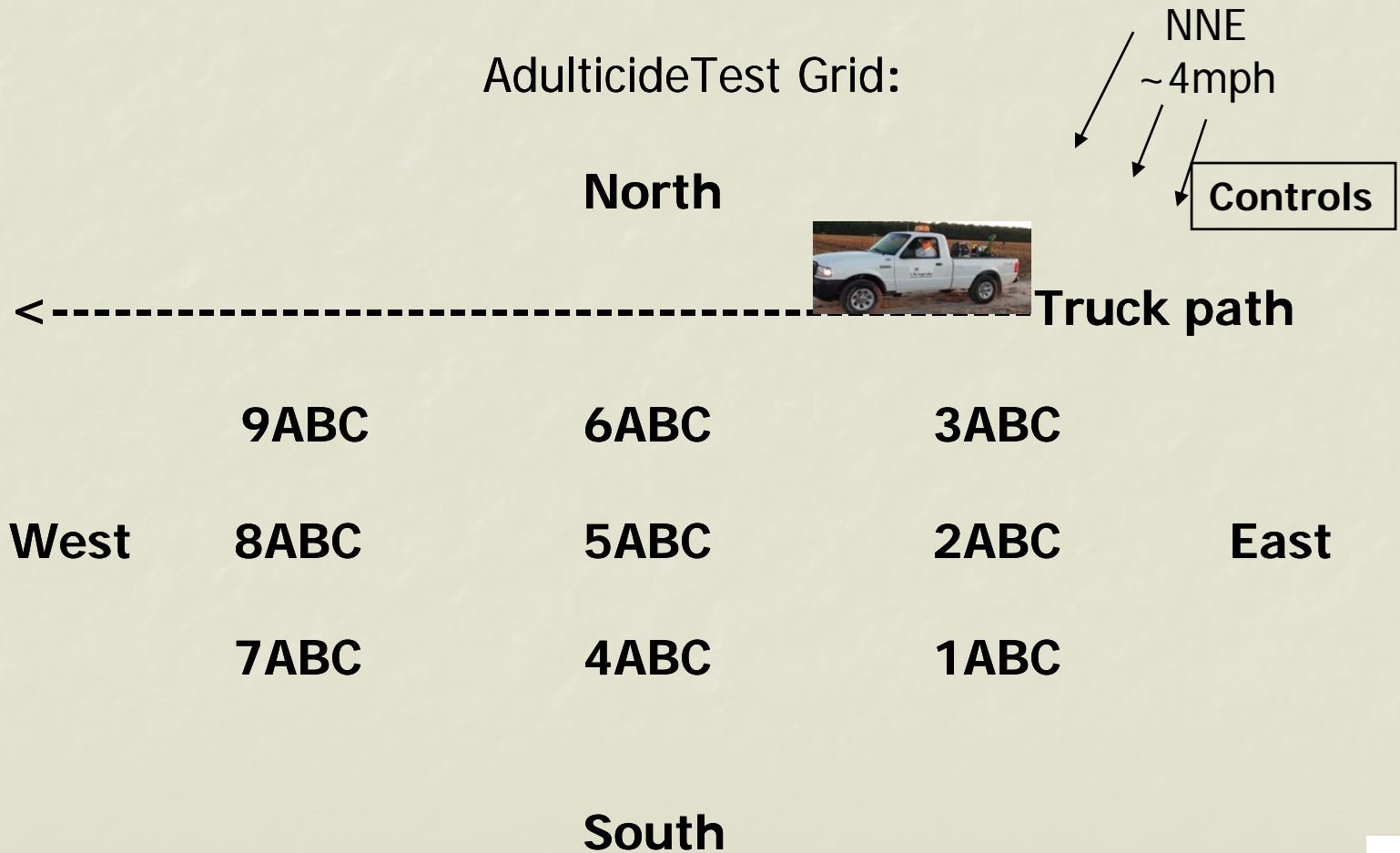
# ZENIVEX E20 (Etofenprox 20%)

- Single A.I. - Etofenprox (20%)
- Mixture: two parts BVA oil to one Etofenprox.
- Flow rate 5.48 oz. per minute @10mph
- Weather: Temperature was 68° and wind was 4 mph (variable) out of the NNE.
- The ULV Cloud, due to the wind, had a swirl or rolling effect ...may have partially missed some of the test cages and/or impingers.

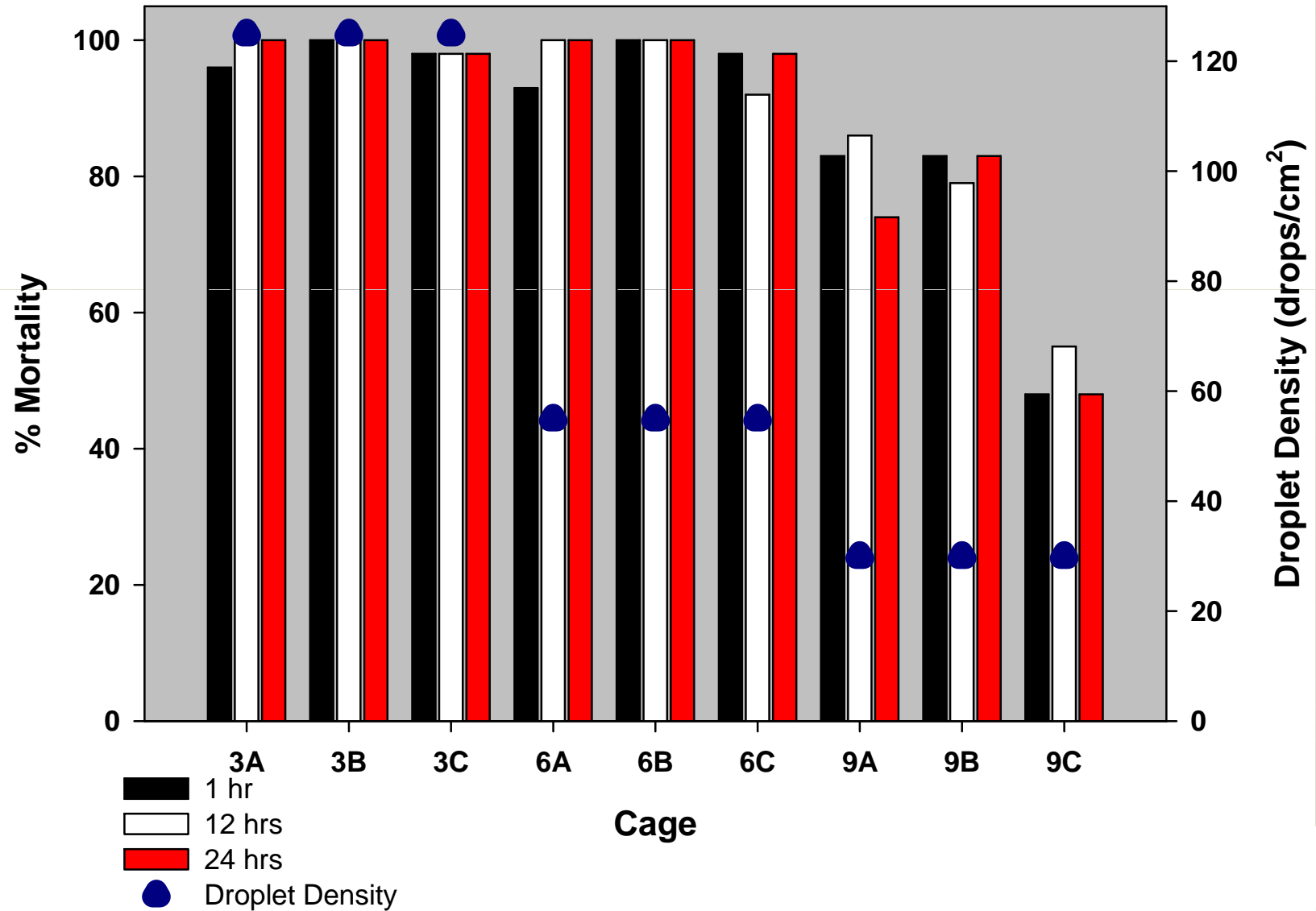


# Methods

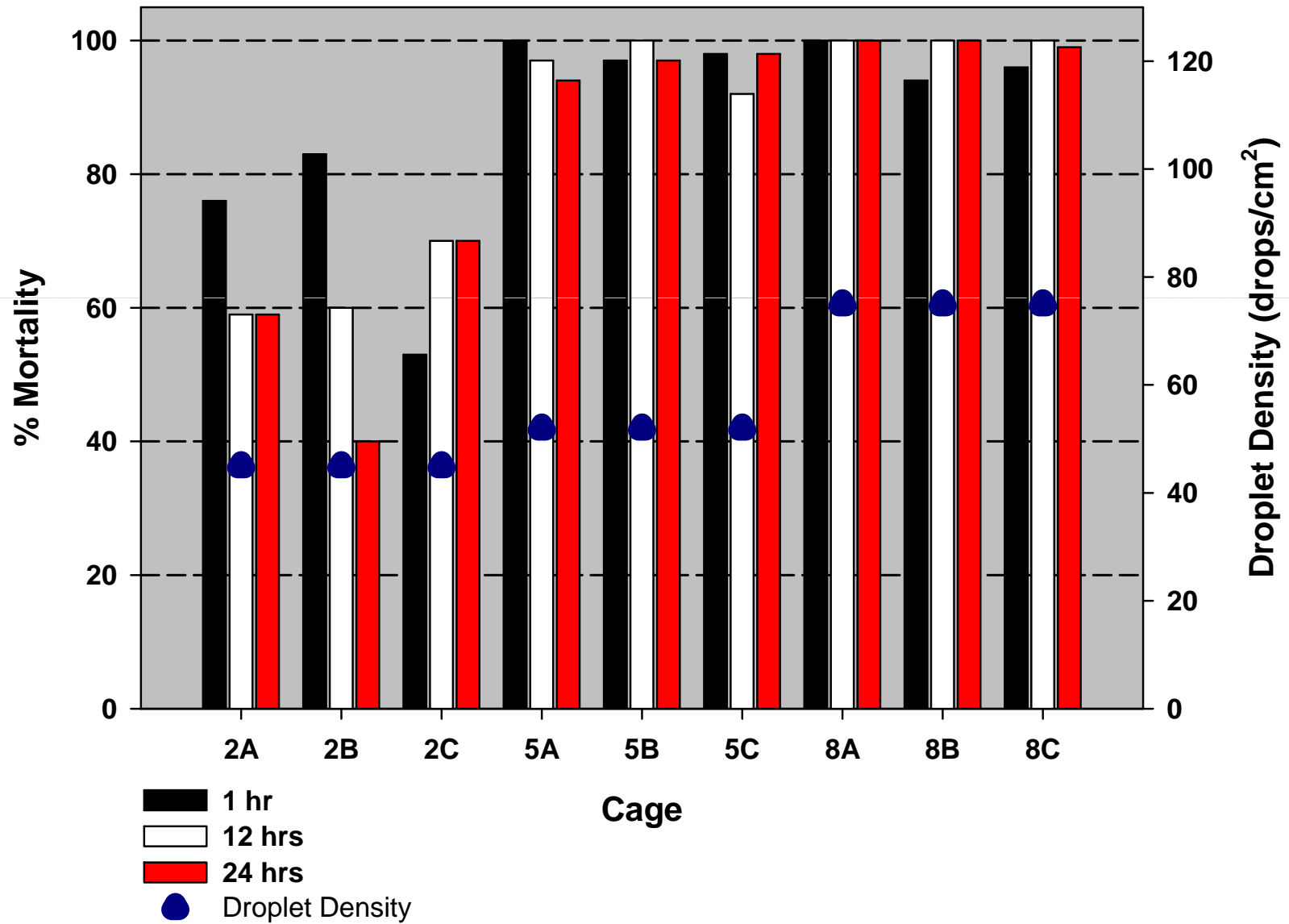
Adulticide Test Grid:



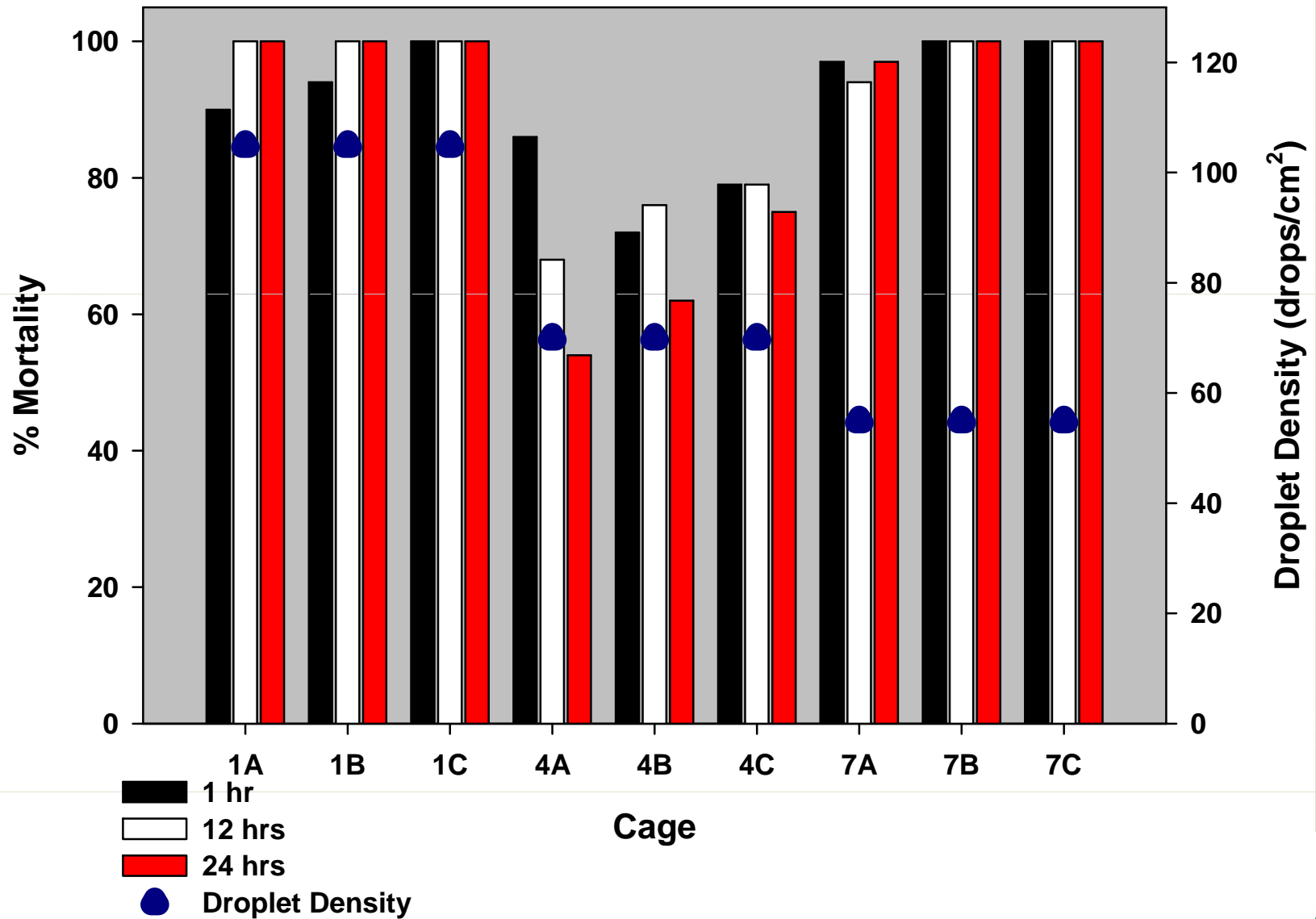
# Zenivex Test 100' Cages 1, 12, and 24 Hour Mortality



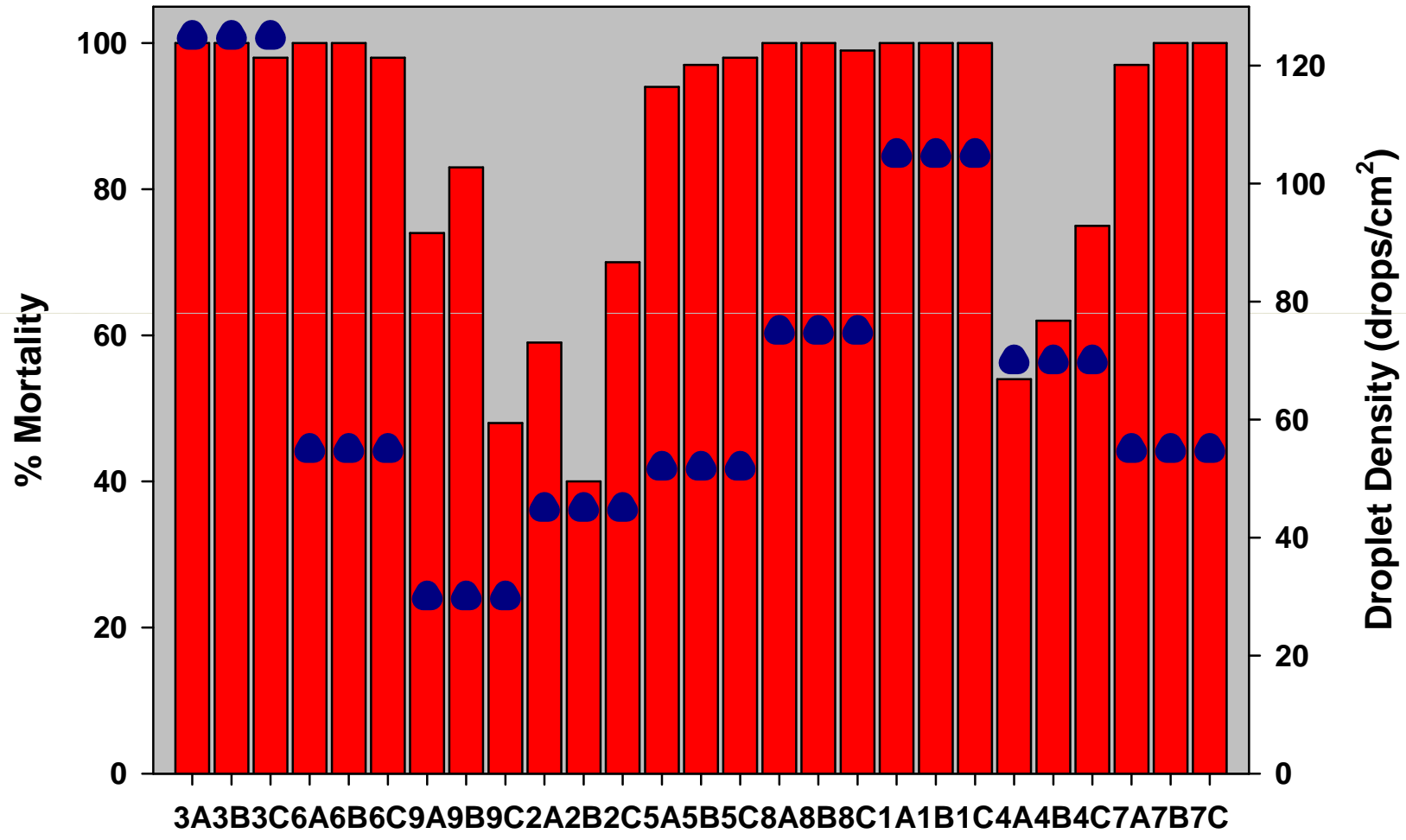
# Zenivex Test 200' Cages 1,12, and 24 Hour Mortality



# Zenivex Test 300' Cages 1, 12, and 24 Hour Mortality



# Zenivex Test All Cages 24 Hour Mortality



█ 24 hrs  
● Droplet Density



# DUET

(Prallethrin 1%, Sumethrin 5%, PBO 5% )

- Open field test with standard nine point grid in southern Chesapeake on September 23, 2008
- Nine posts (3 – 100', 3 – 200', 3 – 300')
- Two test cages per grid post (1 *Aedes albopictus* and 1 local species mix)
- Spinning Impingers with 1"-teflon coated slides at sites 1, 3, 5, 7, and 9



# DUET

(Prallethrin 1%, Sumethrin 5%, PBO 5% )

- Control Mosquitoes: 2 cages of *Ae. albopictus* (40) and two cages of mixed local species (53).
- Test Mosquitoes: 9 cages of *Aedes albopictus* (173) and 9 cages of mixed local species (204).
- The *Ae. albopictus* were provided by Dr. Charles Apperson of N.C. State University.
- Local Species: 2 *Ae. albopictus*, 12 *Ae. vexans*, 86 *Anopheles*, 95 *Cx. salinarius*, 3 *Oc. atlanticus*, 2 *Oc. infirmatus*, and 2 *Ps. ferox*.



# DUET

- Duet concentrate.
- The active ingredients are Prallethrin (1%), Sumithrin (5%), and Piperonyl Butoxide (5%).
- Flow rate: 3.6 oz. per minute.
- Temperature was 63° and the wind was out of the NNE at 7 to 11 mph during application.



# Methods

Adulticide Test Grid:

North

NNE 7-11

mph

Controls



Truck path



7AB

4AB

1AB

West

8AB

5AB

2AB

East

9AB

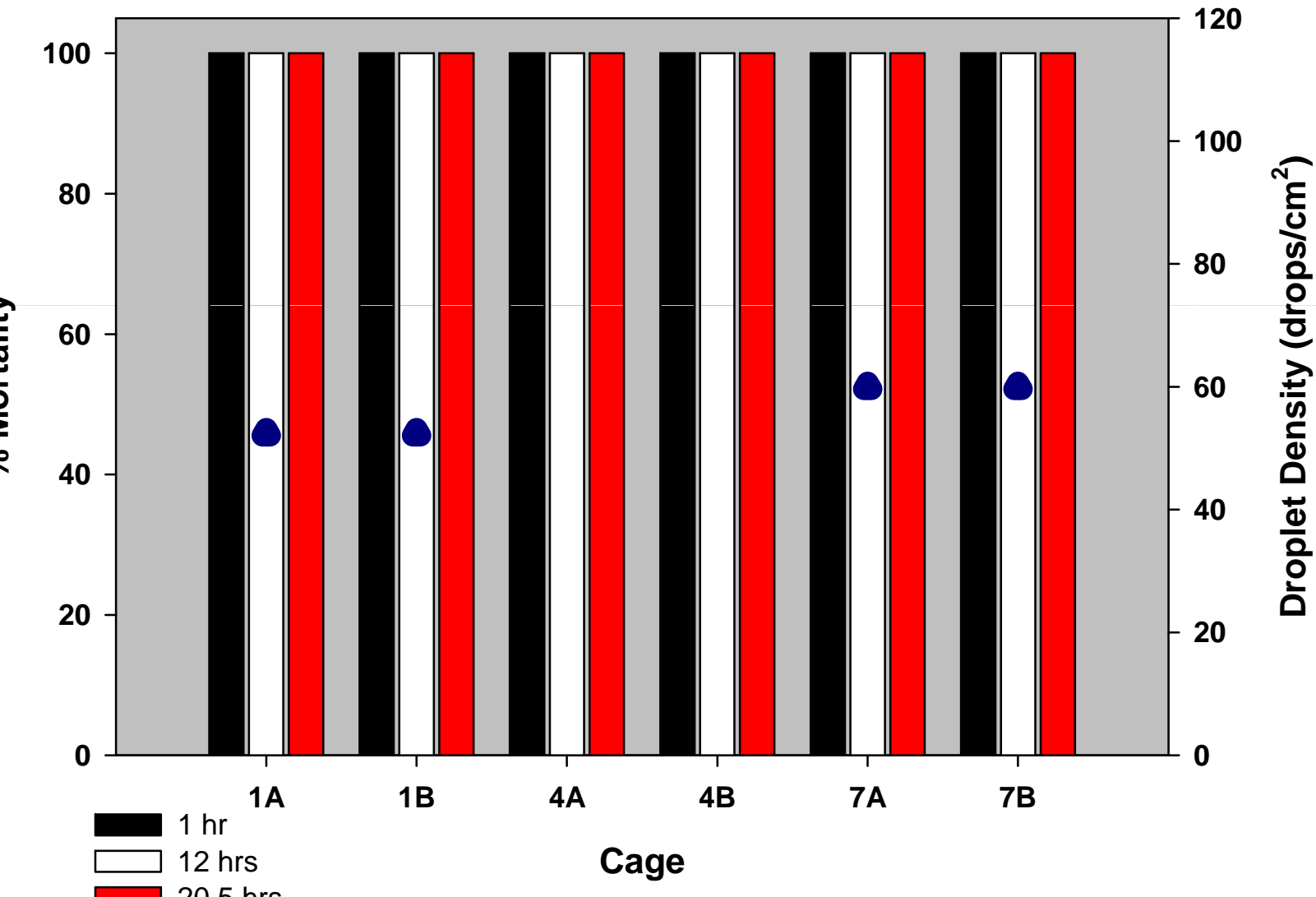
6AB

3AB

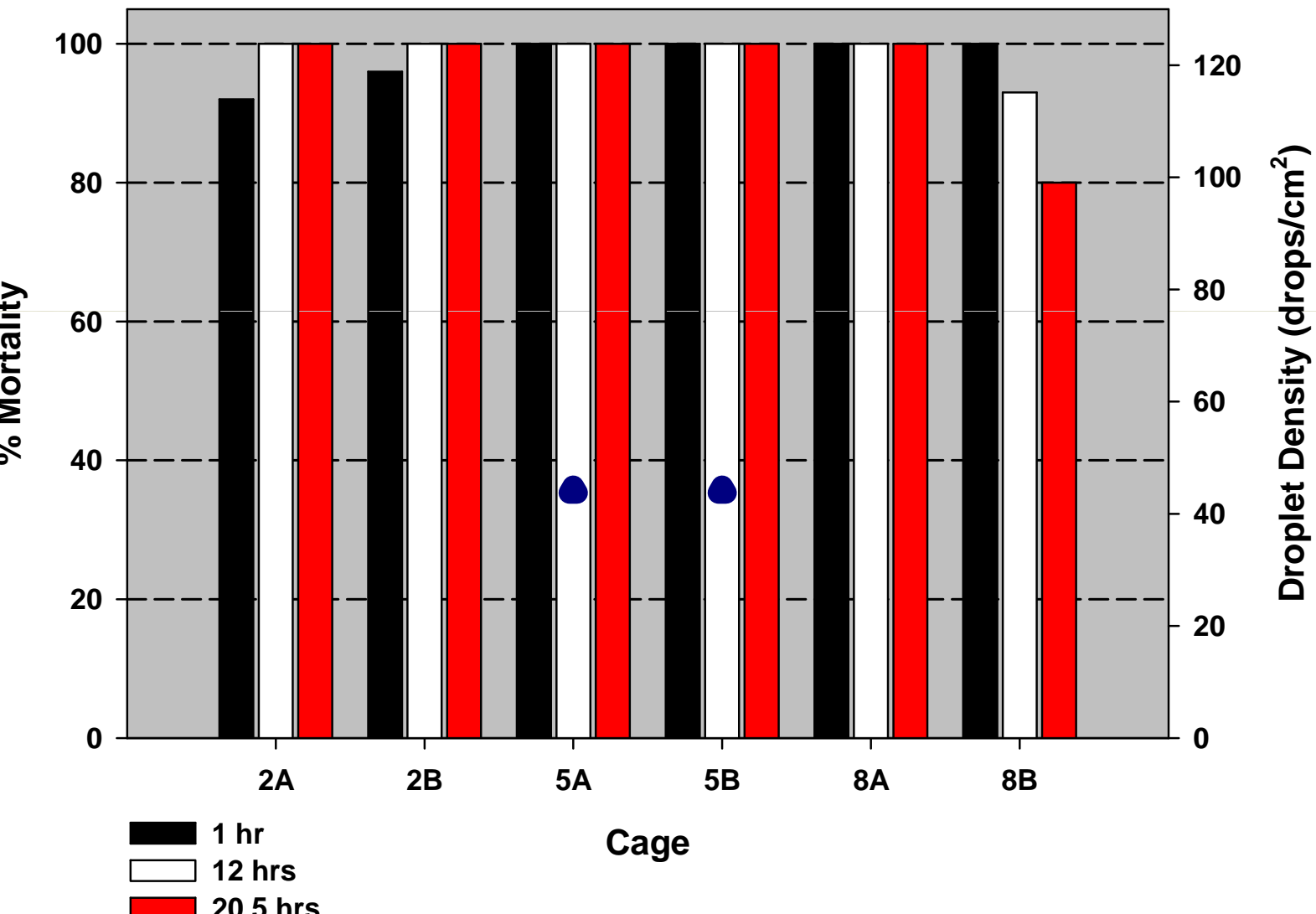
South



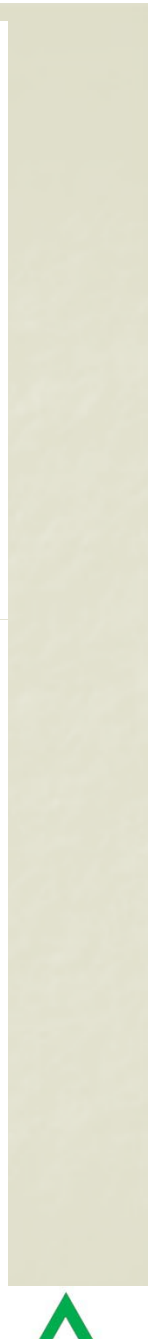
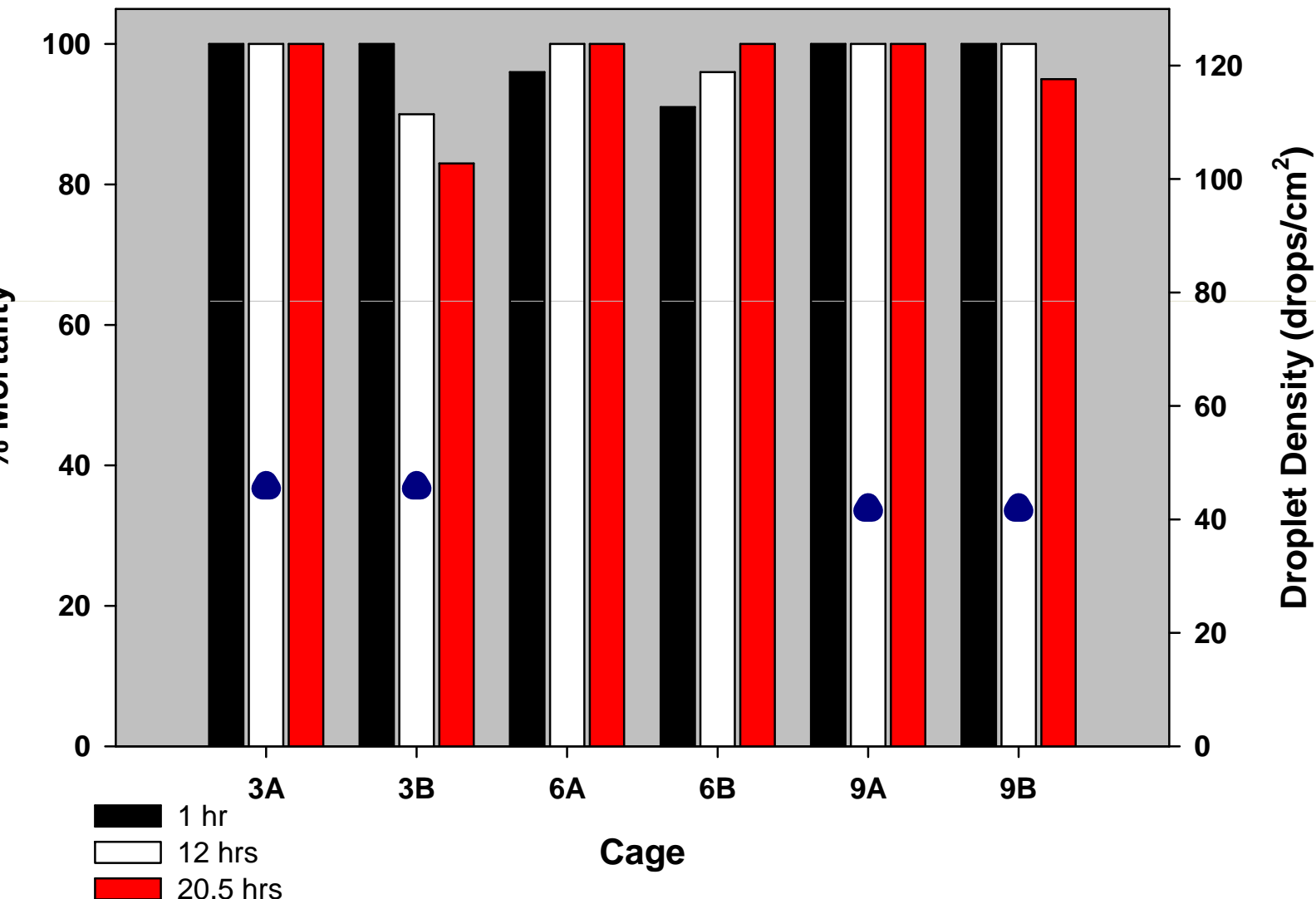
# Duet Test 100' Cages 1, 12, and 20.5 Hour Mortality



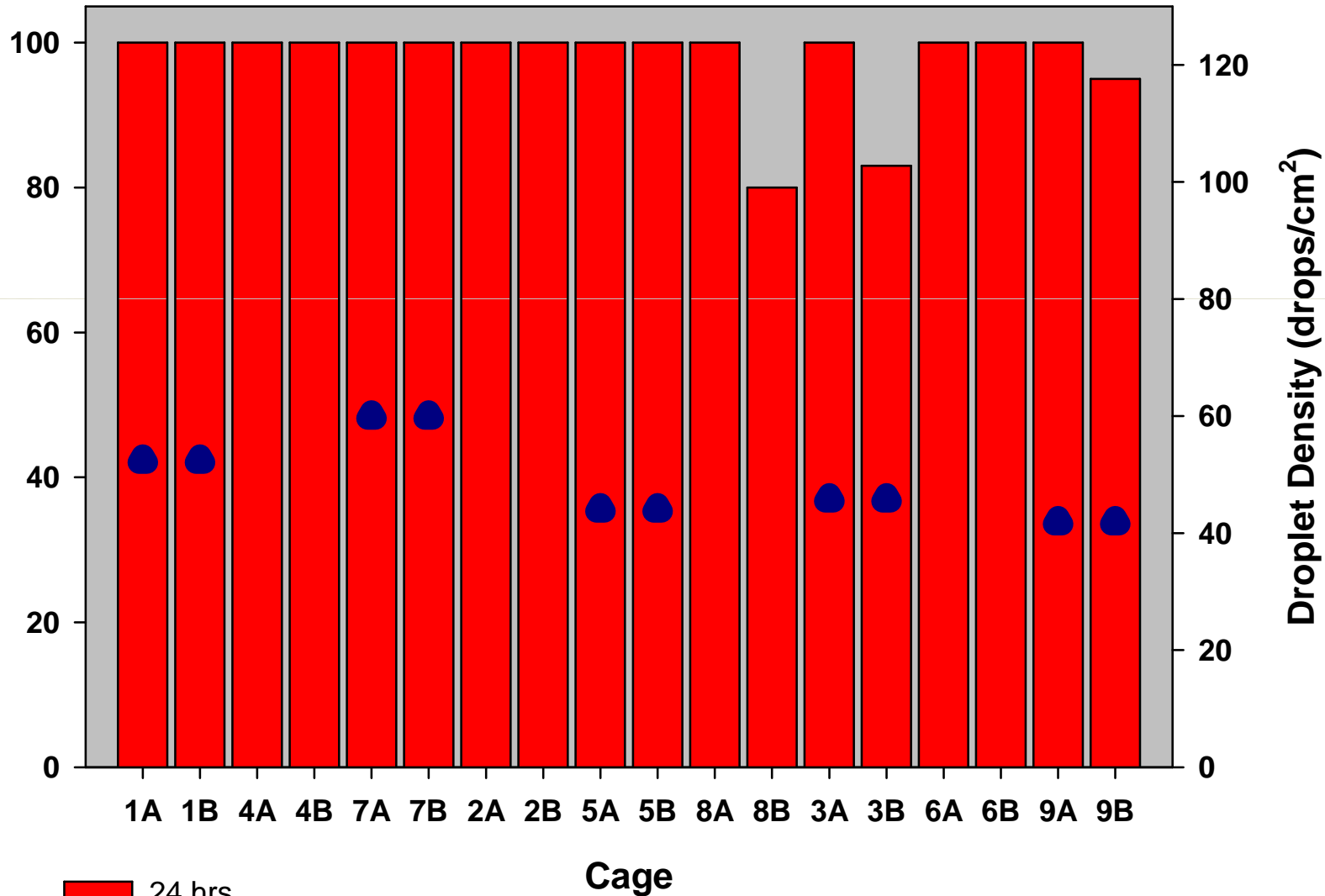
# Duet Test 200' Cages 1, 12, and 20.5 Hour Mortality



# Duet Test 300' Cages 1,12, and 20.5 Hour Mortality



# Duet Test All Cages 20.5 Hour Mortality



## Results

Both adulticides were highly effective.



## **...and Thanks**

**Thanks to everyone that helped organize, provided technical service, or actually conducted the tests.**

**Thanks to Charles Pate, Keith Haas, Bill Reynolds, Jim McNelly, Jeff Hottenstein, Danny , Joe Simmons, Jason Williams, Gene Payne, Louis DeMarco, Jason Pevear, Connie Gregg, Leroy Bohn, Bobby Whitaker, Tanya Hodges, Jessica Wood, Dr. Charles Apperson, Johnny Tyndell, and Kirby Foley.**

