

EXAMINING THE EFFICACY OF PMP RESIDENTIAL MOSQUITO TREATMENTS: PART II



Retrieved from: http://www.bugs.com/pest_control_services/mosquito_control.asp

Retrieved from: <http://www.deershack.com/cgifts/roadsigns/1964.html>

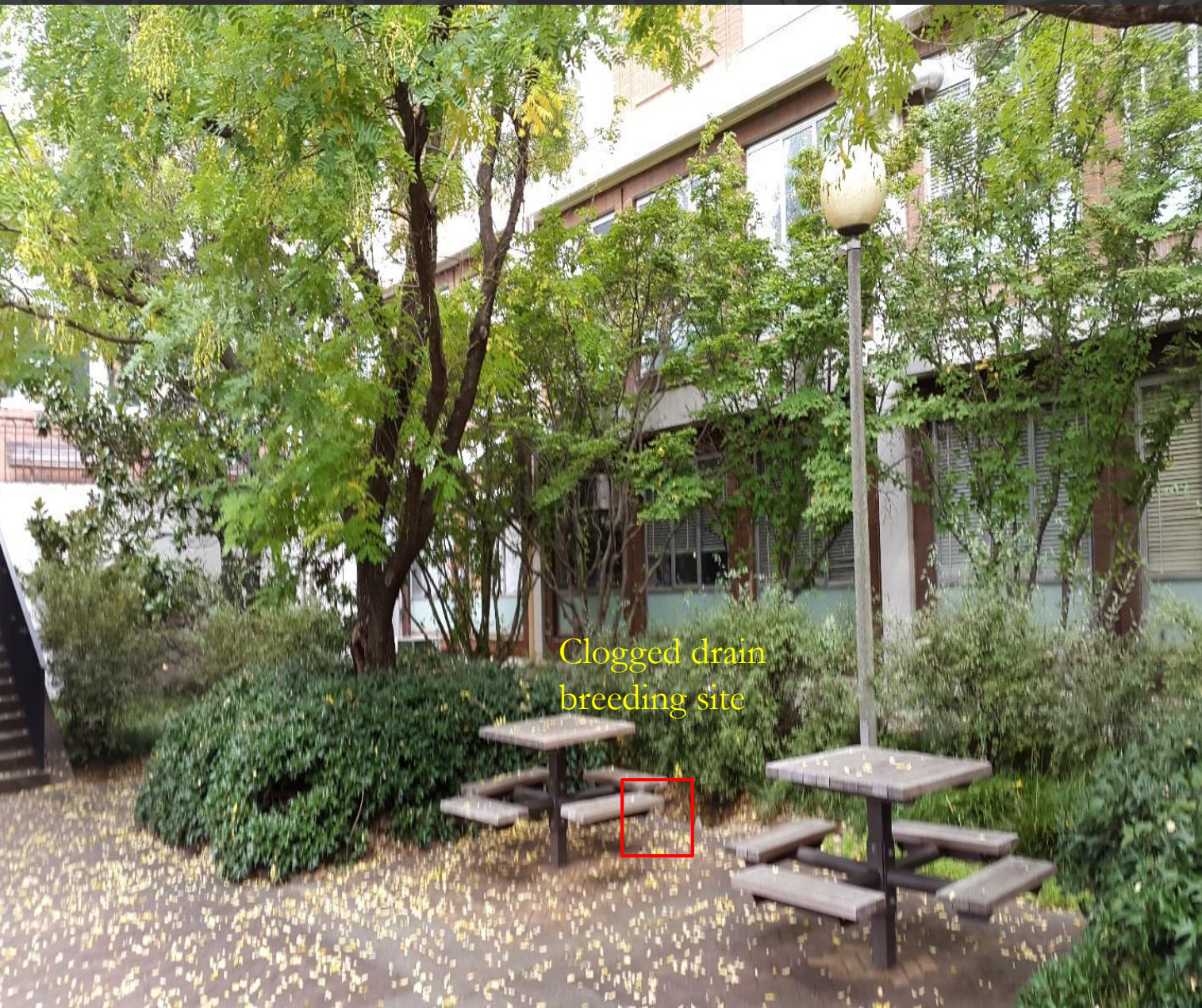
Tiffany Nguyen
UGA Entomology

OUTLINE

- Mosquito Surveillance Techniques
 - On campus study
- Mosquito Control efficacy
 - On campus treatments by HSERP
 - Nonresidential
 - » Bioassay study: Residual Efficacy
 - Residential
 - Followed 2 PC Companies

*I will not be listing any product or company names because this is an ongoing study and some of this data is proprietary.

MOSQUITO SURVEILLANCE AT UGA



- CDC light traps w/ & w/ out CO₂
- Gravid traps with hay infusion
- Insect sweep nets
- Vacuum sampling device

MOSQUITO SURVEILLANCE AT UGA



MOSQUITOES CAUGHT 2014 AND 2015



Aedes albopictus (n=7128 / 394)

Ochlerotatus japonicus (123 / 87)

Culex restuans (84 / 34)

Aedes vexans (62 / 14)

Anopheles punctipennis (53 / 4)

Culex quinquefasciatus (45 / 9)

Psorophora ferox (4 / 1)



MOSQUITO CONTROL EFFICACY STUDIES

Materials & Methods

Non-residential wildland
edge habitat

Treatment with backpack
mist blower (1000 ft²) per
treatment area

2 Treatments & 1
Control area (2014)

4 Treatments & 2
Control areas (2015)

Weekly pre-treatment and
post-treatment mosquito
sampling with vacuuming
sampling device



Mosquito Curtains Inc

SITE 1



SITE 2



SITE 3



MOSQUITO CONTROL EFFICACY STUDIES: BIOASSAY CAGE STUDY

Materials & Methods

Plant cuttings from each site (20 cm tall) with vials of water

Privet

Chinese Bush Honeysuckle

Mesh insect Bugdorm (™) cages (25 x 25 cm) from MegaView Science Co., Ltd.

Polystyrene square weigh boats (4.25 x 4.25 cm) from VWR International LLC

Ten one-day old mosquitoes per cage:

Aedes albopictus

Culex restuans

Culex quinquefasciatus

10% sucrose solution

Daily mortality counts



PERCENT MORTALITY OF *Aedes albopictus* EXPOSED FOR TWO DAYS TO CUT FOLIAGE BY WEEK AFTER TREATMENT AND SPECIES

2014

Percent Mortality

Post-Trt Week

Trt A

Trt B

Controls

1

98

30

0

3

68

20

0

5

34

9

0

7

10

4

0

Percent Mortality

2015

Post-Trt

Week

Trt A

Trt B

Trt C

Trt D

Controls

1

99

17

0

0

0

3

89

12

0

0

0

5

88

7

0

0

0

7

94

4

0

0

0

RESIDENTIAL MOSQUITO CONTROL EFFICACY STUDIES



Materials & Methods

- 15 Houses (3 houses per Trt)
- Treated by our laboratory using backpack mist blowers
- Vacuuming sampling device
- Mosquito sampling @ 2 week intervals after Treatment.

RESIDENTIAL MOSQUITO CONTROL EFFICACY STUDIES

Materials & Methods

2 Pest Control companies in different GA cities

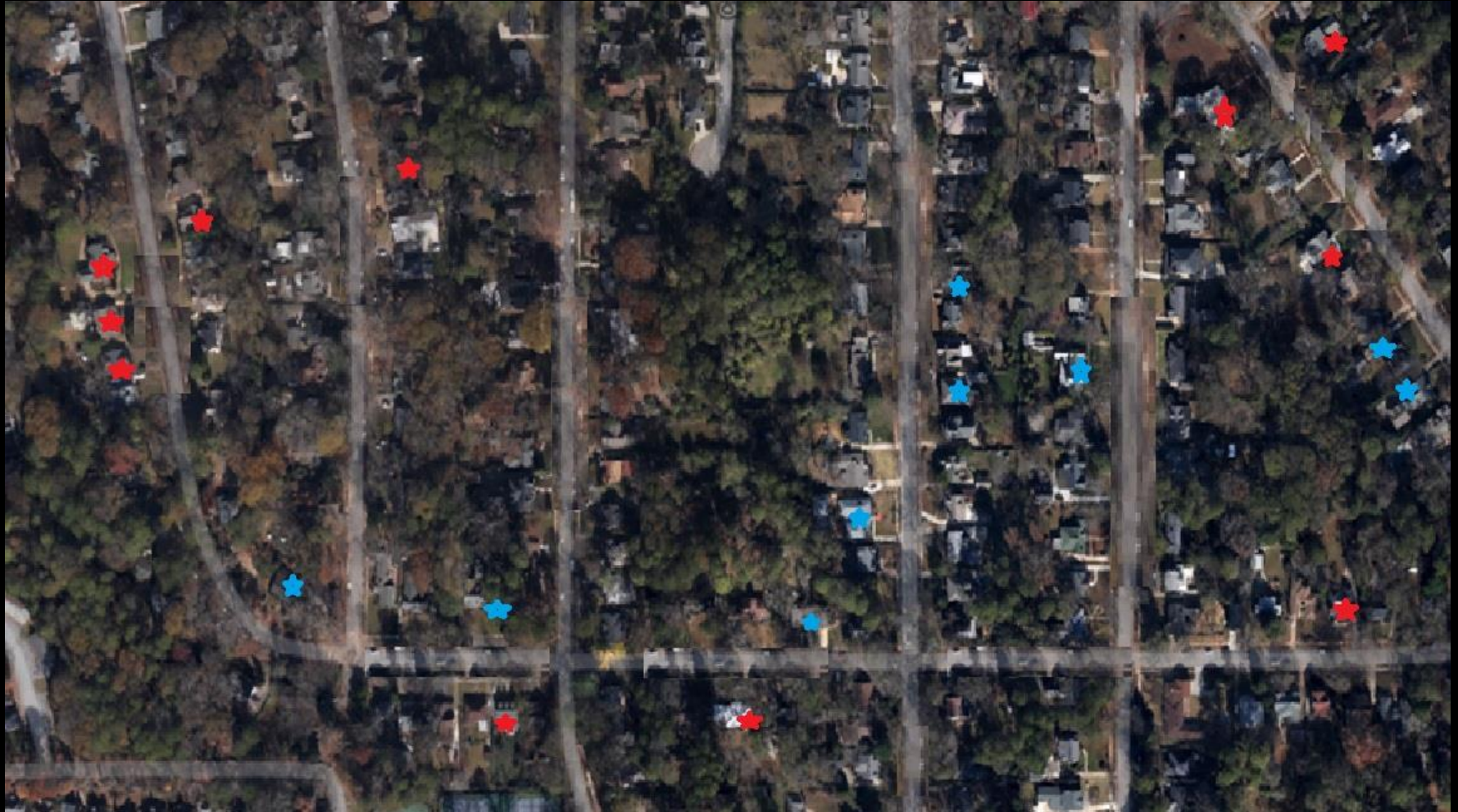
30 total Trt houses & 23 total control houses

PC technician treatment 1x/month with
backpack mist blower

Mosquito sampling 2x/month (July – Oct)

Vacuum sampling device

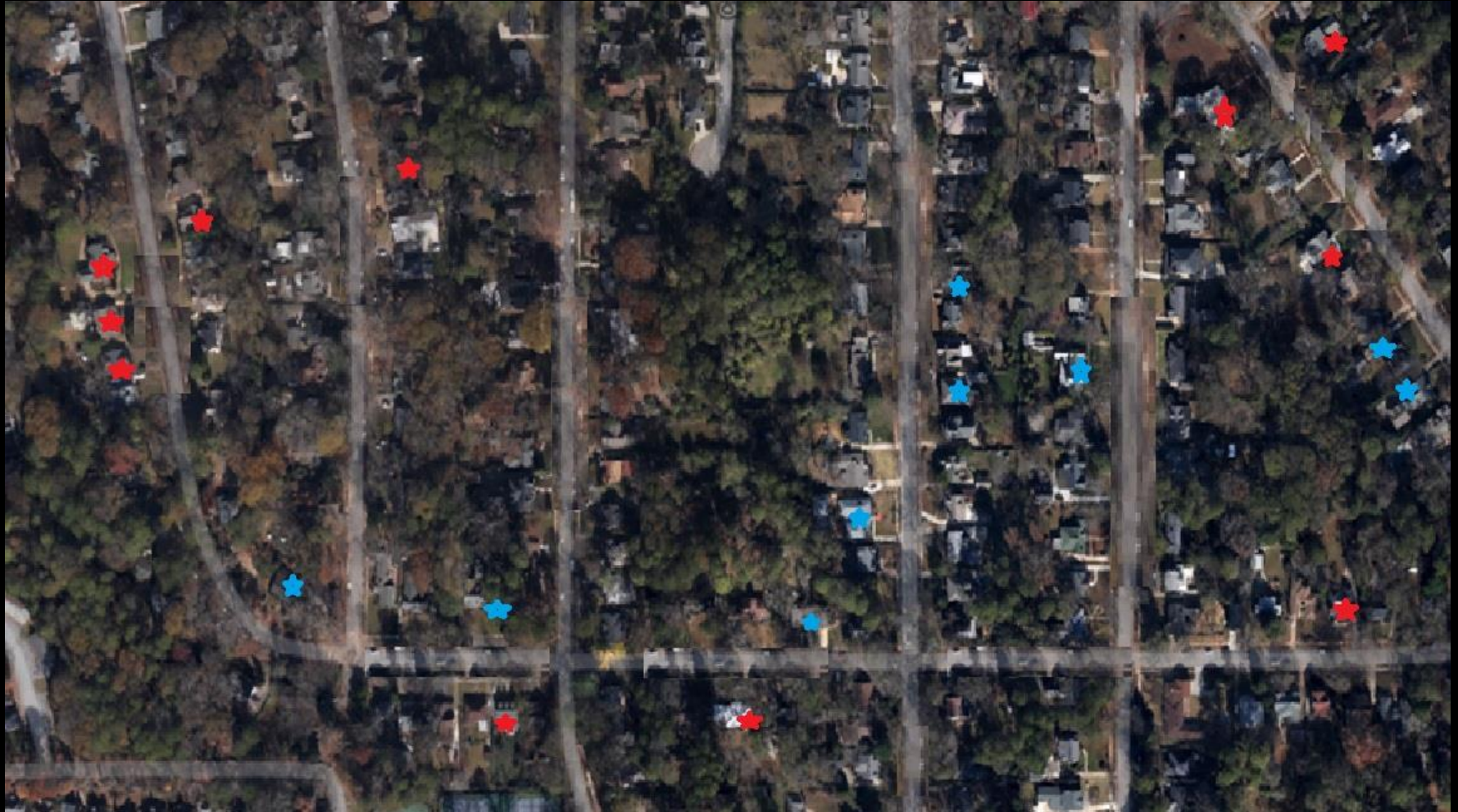
RESIDENTIAL MOSQUITO CONTROL EFFICACY STUDIES (2014)



Treatment Homes 71%(10/14)

Control Homes 46%(23/50)

RESIDENTIAL MOSQUITO CONTROL EFFICACY STUDIES (2015)



Treatment Homes 0%(0/0)

Control Homes 70%(21/30)

SUMMARY

Mosquito Control efficacy on campus

- Wildland residual spray
- Bioassay study: Residual Efficacy
 - Treatment A had higher average mortality
- Residential

SUMMARY

Mosquito Control efficacy

Residential: PC applied treatments

THANK YOU FOR YOUR TIME!

Acknowledgments:

GMCA

Dr. Rosmarie Kelly

Dr. Brian Forschler

Mr. Elmer Gray

Dr. Donald Champagne

Dr. Daniel Mead

Tae Young Lee

Yi-An Chen

Alice Mello

Travis Redmond

UGA Physical Plant

PC Companies in the study

Homeowners in the study

Mosquito Curtains Inc.