Zika Webinar Series - Webinar No. 2

TAKING THE BITE OUT OF ZIKA
Practicing Effective Mosquito Controls

Friday, February 5th, 2016  11:00 AM (EST)
WELCOME

MODERATOR
Denaye Hinds
Director of Sustainability, OBM International
Director of CHTA’s Caribbean Alliance for Sustainable Tourism (CAST)

Practicing Professional Advice Aimed at:
• Mitigation and Vector Control
• Education and Public Relations
• Coordination and Collaboration
ZIKA: THE FACTS

PRESENTER
Dr. Karen Polson-Edwards
Medical Entomologist
Caribbean Public Health Agency (CARPHA)

- About CARPHA
- Zika Defined
  - Transmission
    - What’s Known
    - What’s Speculative
  - Symptoms and Treatment
Countries Covered by CARPHA

CARICOM Member States: Antigua and Barbuda; The Bahamas; Barbados; Belize; Dominica; Grenada; Guyana; Haiti; Jamaica; Montserrat; Saint Lucia; St. Kitts and Nevis; St. Vincent and the Grenadines; Suriname; Trinidad and Tobago;

Dutch territories: Aruba, Curacao, Saba, St Eustatius, St Maarten,

CARICOM Associate Members: Anguilla; Bermuda; British Virgin Islands; Cayman Islands; Turks and Caicos Islands.
Current Status in CARPHA Member States and Surrounding Territories

*Data as at 1 February, 2016

CARPHA Member States: Anguilla, Antigua and Barbuda, Aruba, The Bahamas, Barbados, Belize, Bermuda, British Virgin Is, Cayman Is., Curacao, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, St. Lucia, St. Kitts & Nevis, St. Vincent & the Grenadines, Suriname, Trinidad & Tobago and Turks and Caicos Is.,
Profile: Matters Being Reported

Microcephaly and Other Abnormalities

Guillain-Barre Syndrome

Transmission Through Sex
Preventative Measures

Personal Preventive Measures

Advice for Pregnant Women
Looking Ahead

CARPHA’s Ongoing Role

A Engagement with CARICOM, National Health Agencies,

CTO, CHTA
Integrated Mosquito Management
Mitigation and Control Best Practices

PRESENTER
Christopher Lubin, FDL Pest Control Solutions from St. Lucia
Raoul Persaud, Univar
Adelle Garbutt, Calabash Resort

• About the Aedes Mosquito
  Lifecycle, Breeding, Behaviors

• Fogging and Misting – Techniques
Aedes Aegypti

- Small dark, white lyre shaped marking on thorax & banded legs
- Container Breeder
- Prefer dark colored containers
- Natural Locations – Tree holes, Axils
- Skip Ovi-position Behavior
- Egg to Adult in 7-8 days
- Egg production sites in close proximity to households
- Eggs are resistant to desiccation and can remain viable for 6 months or more
- Eggs produced depends on blood meal size
- Female can lay about 5 batches of 100 to 200 eggs in her lifetime.
Aedes Aegypti

• Lifespan of adults approx. 3 weeks
• Found in open septic tanks, storm drains, wells, water meters
• Can breed in as little as a teaspoon of water

BITING BEHAVIOUR

• Day Biters
• Species active approx. 2 hrs. after sunrise and several hrs. before sunset.
• Approaches humans from behind and bites ankles & elbows
• Bites dogs and other domestic animals – mostly mammals
Aedes Aegypti

- Egg raft
- Eggs laid in groups

Larvae in the water.

Pupae in the water.

Emerging adult mosquito.

Female mosquito after biting a person.
Life Cycle
Complete Metamorphosis

**Aedes aegypti**

- **Female mosquitoes lay eggs inside containers holding water.**
- **Eggs** are ready to hatch from a few days to several months after being laid. Eggs hatch when submerged in water.
- **Larvae** are aquatic and develop into pupae in as little as 5 days.
- **Pupae** develop into adult flying mosquitoes in 2-3 days.

The Aedes mosquitoes have 4 life stages: egg, larva, pupa and adult. Mosquitoes can live and reproduce inside and outside the home. The entire life cycle, from an egg to an adult, takes approximately 8-10 days.
**PRESENTER**
Adelle Garbutt, Calabash Resort

**5 MIN GUIDE:**

**MOSQUITO PREVENTION, CONTROL & REPELLENT AWARENESS GUIDE**

- Complete a full inspection of potential breeding areas for mosquitoes.
- Investigate & clean areas for potential breeding.
- Ensure netting and gauze are in good condition.
- Close windows and doors before dark.
- Remove trash frequently & secure containers.
- Empty all cans/bottles of liquids prior to discard.

- Remove all standing water.
  - Tires
  - Watering cans
  - Clean gutters & pipes
  - Cover all drums, barrels, buckets

- Repair leaks in and around hotel.
  - Secure all water sources & containers.
  - Ensure areas around all treatment & desalination plants do not contain water.
  - Pour salt in all potential pockets of water.
  - Place small fish in water features/ponds (guppies, goldfish, killifish, tilapia)

- Fill depression areas with soil.
  - To avoid creating standing water.
  - Drain all low places.
  - Keep grass cut short.
  - Screen all tanks.
  - Seal all tanks (water/septic).
  - Clear coconut shells & containers.

**CAST**
Caribbean Alliance for Sustainable Tourism
Commonly overlooked breeding places – Tires, Tarps & Tanks

Look up – frequently check your gutters

Check odd places – like small spaces, brick work on the top of walls and in plants that hold water like Bromeliads
Eliminating Breeding Grounds

- The best thing to do is to get rid of the water. Permanently.
- When you can’t eg drains— pour salt into the water
- Or add fish to the water, like guppies
Good Ground Keeping Practices

• **Assessment of Grounds** - to determine all possible breeding sources – scheduled walks

• **Source Reduction**
  - **Drainage** - scheduled cleaning of drains on the property
  - **Leaf Litter** removal in storm drains and guttering
  - **Exclusion** - proper sealing of man holes, water tanks and other receptacles that hold water
  - **Cleaning of Guttering and Roofs** (a good time is before the start of the rainy season)
  - **Treatment of Crab Holes and Tree Holes** with a mono molecular film
  - **Pruning Deciduous Tree Branches** - breeding sites in storm drains and guttering
  - **Clippings in Drains** – guards on weed eaters to reduce the spread of clippings.
  - **Removal of Matter** and unwanted items that can serve as sources on property
Fogging

PRESENTER
Christopher Lubin, FDL Pest Control Solutions
ULV Application
Barrier Treatments
CARIBBEAN HÔTEL & TOURISM ASSOCIATION
CARIBBEAN TOURISM ORGANIZATION
Caribbean Public Health Agency
CARPHA

REPELLENT GUIDE

Greater chance of being bitten during the day.

Re-apply repellent as directed by instructions

Use citronella candles & oil lamps in outdoor spaces.

Spray on feet and ankles. It is believed the mosquito bites low.

12 Caribbean Countries have reported cases of Zika virus (as of 2.1.16)

EPA-REGISTERED REPELLENTS TO CONTAIN:
- PICARIDIN
- OIL OF LEMON EUCALYPTUS (OLE)
- IR3535
- NEEM
- DEET

CLOTHING & APPLICATION
- LOOSE LONG SLEEVES & PANTS
- LIMIT SPANDEX
- CLOSED IN SHOES
- SPRAY CLOTHING W/ DEET REPELLENT
- USE PERMETHRIN-TREATED CLOTHING

*do not apply permethrin directly to skin

*PREGNANT / ASSUMED PREGNANT WOMEN ARE URGED TO TAKE EXTRA PRECAUTION. WOMEN IN AFFECTED AREAS, CONSULT DOCTOR ABOUT PREGNANCY

CAST
Environmental Sanitation
(Habitat Modification)

• **Mechanical Control Measures** (exclusion)
  - Netting
  - Dressing for Protection

• **Repellants**
  - Citronella Candles
  - Lanterns
  - Coils
  - Bug Shields
Environmental Sanitation

(Habitat Modification)

• Larviciding
  o Chemical Larvicides
  o Biological Larvicides
  o Monomolecular films & Oils

• Growth Regulators
  o Repellants

• Chemical Control
  o Barrier Spraying (residual pesticides)
  o Space Spraying
Innovations In Mosquito Control

Gravid female attracted to trap

Larvae (pupae) killed

Flies out carrying bioactives

Infection stops, virus replication

Grows contaminated on the floater

Contaminates surrounding sites with larvicide powder

Larvae (pupae) killed

Mosquito killed

Dies within a few days, before transmitting disease

www.in2care.org

In2Care®
Aquatain AMF – How it Works

- Forms a thin fast spreading physical barrier over the water surface
- Pupae and larvae are killed as they find it more difficult to attach to the surface to breathe
- Discourages females from laying eggs
Added Tips

Keep your drains clear and flowing

Scrub water containers to get rid of the eggs

Create a “Zone of Safety” around your property
Institutionalizing Procedures and Practices

Development of an integrated mosquito management protocol at resorts

- **Form a Grounds Management Action Group** to include staff from:
  - Maintenance
  - Landscaping
  - Management

- **Fortnightly Meetings** to report on daily walks and action taken to deal with breeding sources found
Institutionalizing Procedures and Practices

• **Installation of an Integrated Mosquito Control Program** to include use of the following methods:
  - Larviciding
  - Monomolecular films & Oils

• **Growth Regulators**

• **Repellents**

• **Chemical and Non Chemical Controls**
  - Barrier Spraying (residual pesticides)
  - Space Spraying

• **Mosquito Traps** as part of an overall surveillance program
• Getting It Right on the Inside First
  o Employee Awareness and Training
    ▪ General Information About Vector Control in the workplace and at home
    ▪ Inter-Departmental Communications
    ▪ Health and Safety Guidelines for Suspected Cases
    ▪ Effective Communications with Guests and Potential Guests
      - CARPHA Tips for Guests
      - CTO/CHTA FAQs
Help Control Mosquitoes that Spread Dengue, Chikungunya, and Zika Viruses

Protect Yourself, Your Family, and Community from Mosquitoes

1. Eliminate standing water in and around your home...
2. If you have a septic tank, follow these steps....
3. Keep mosquitoes out of your home...
4. Prevent mosquito bites...

For more information visit:
http://carpha.org/Media-Centre/Health- Topics
CHTA Zika Resource Center:
Education and Public Relations

PRESENTERS
Johnson Johnrose, Communications Specialist, Caribbean Tourism Organization
Frank Comito, CEO, CHTA

- Public Awareness About Zika Preventative Measures
  - Employees Are Your Best Reach to the Extended Community
  - Media and Communication Tools You Can Use
  - Enlisting Media Support
  - Collaboration Works
Coordination and Collaboration

**PRESENTERS**
Karolin Troubetzkoy, President, CHTA  
Frank Comito, CEO, CHTA

- Engagement with the Community Surrounding Your Property
- Community Clean-Up Campaigns
- Working with National Hotel and Tourism Associations, Ministries/Boards of Tourism, Health Departments/Ministries
- Regional Resources: CARPHA; CTO; CHTA
ZIKA ADVICE

FOR HOTELIERS
GIVE GUESTS FACTS & RESOURCES
REMOVE STANDING WATER

FOR COMMUNITIES
ENGAGE IN ISLAND-WIDE CLEAN-UPS OF BREEDING HABITATS

FOR GOVERNMENTS
DUTY-FREE PRODUCTS
ISLAND-WIDE MISTING

FOR PR/MEDIA
COMMUNICATE MITIGATION & PREVENTION MEASURES
Q&A

For Additional Information Visit:
CARPHA
http://carpha.org/Media-Centre/Health-Topics

CHTA Zika Resource Center: