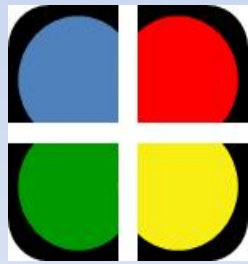


Entobac - A New Bti Pesticide for Larval and Adult Mosquito Control

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MEVLABS, Inc., ProVector LLC



MEVLABS
Helping People Help Their World™

A Disabled Veteran Owned Small Business

Introduction

- Describe Entobac and Entobac D pesticides
- Delivery
- Laboratory and Field Trials
- Future Path



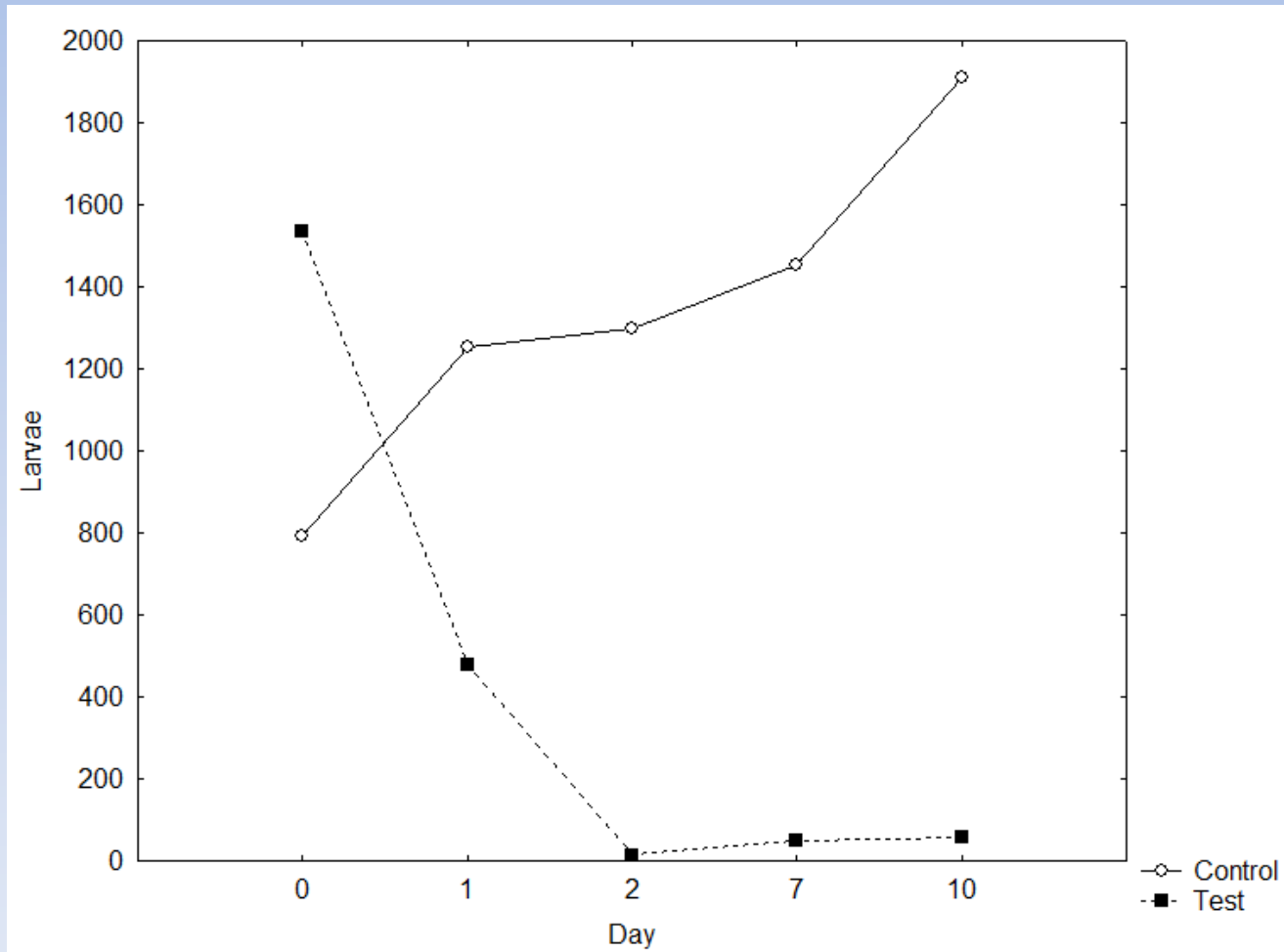
Entobac as Larvicide

- Kills Larval Mosquitoes
- Used as spray or pellet
- Used with the ProVector™
- Active ingredient is *Bti* 10%
- Uses micro- technology to disperse Bti
- Effective in water - high organic content
- Pellet treats 25 sq ft lasts up to 1 month

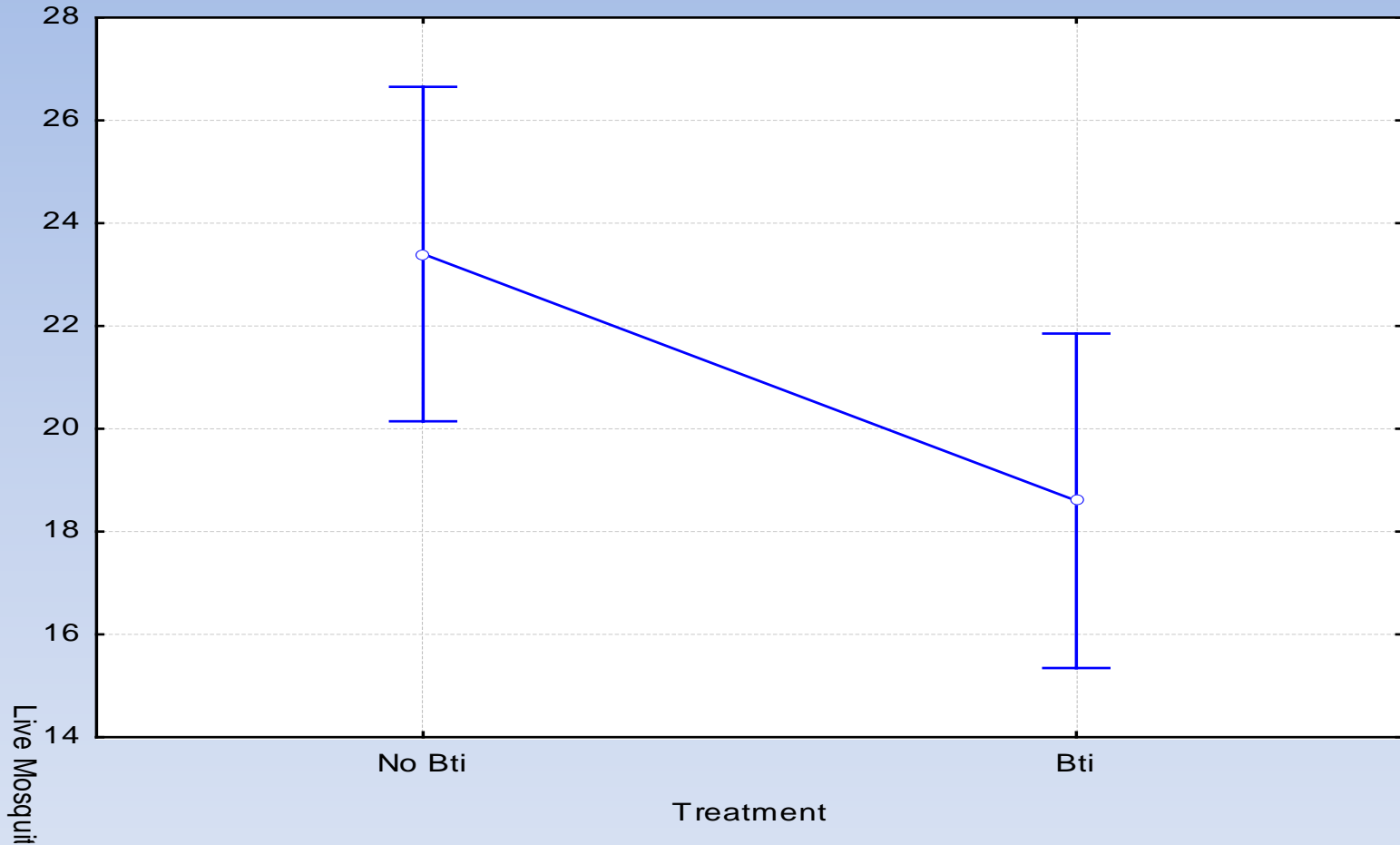
Outdoor

Mean Number of Larvae in Live Stock Water Tanks
(Control verses Entobac)

Current effect: $F(1, 18) = 10.909, p < 0.005$

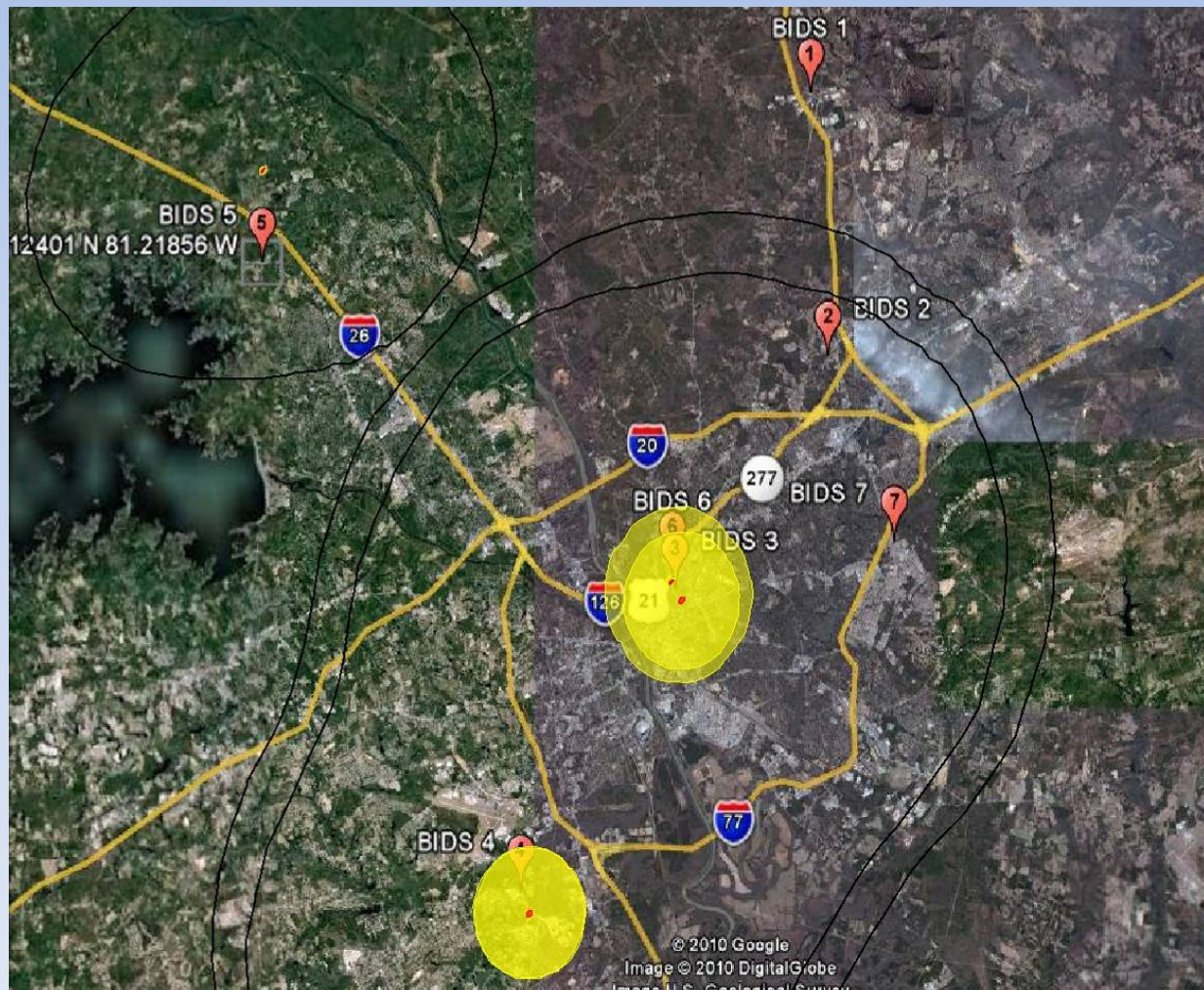


Deposition of Bti by adult mosquitoes killed by Entobac will also kill mosquito larvae (*Aedes aegypti*)



Survival after an average of 3 adult mosquitoes killed by Entobac (contains Bti) were placed into 100 ml water containing 30 larvae ($p \leq 0.05$)

Biological Integrated Detection System Detected Re-Aerosolized Bti during the 72 hour study



Surface Deposition

19-Jun-10 16:32:52Z (42.000 hr)

kg/m²



Bti

1.0E-12
1.0E-13
1.0E-14
1.0E-15
1.0E-16
1.0E-17

Entobac Pellets can be delivered by hand, paint ball gun, and possibly artillery

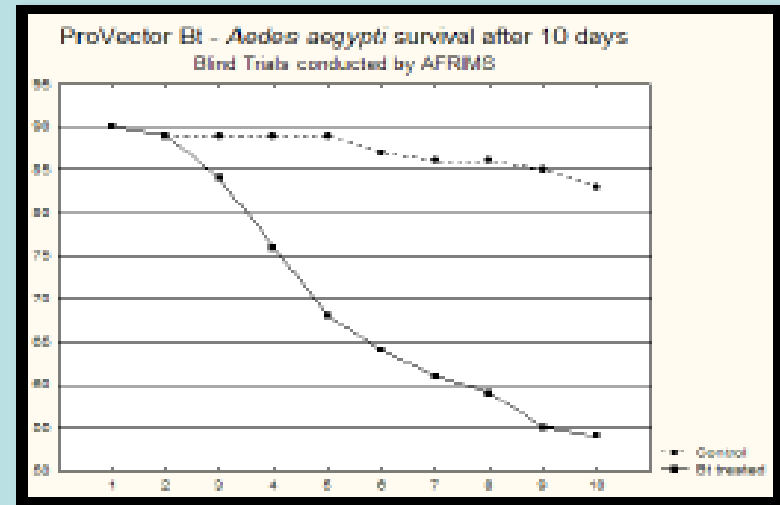
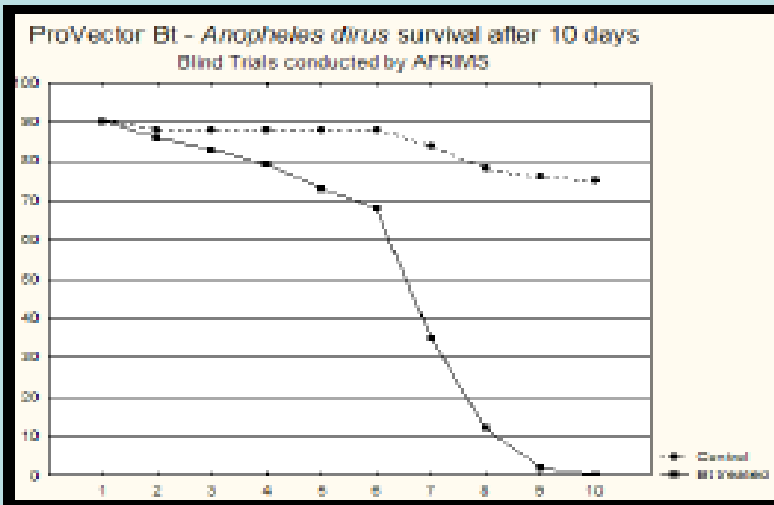
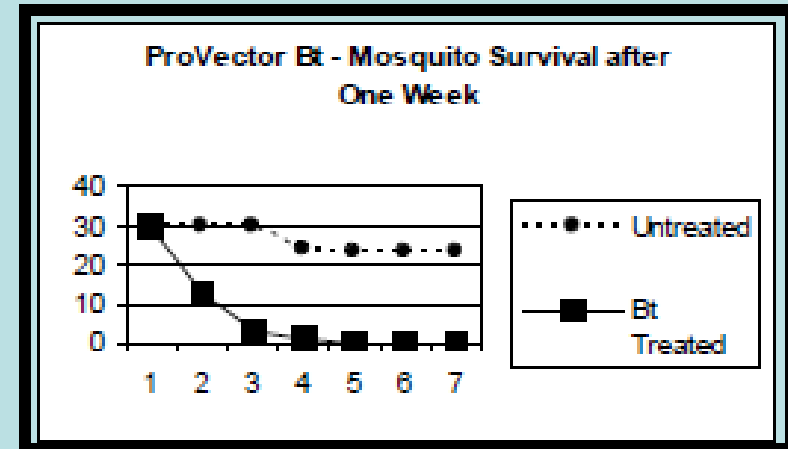
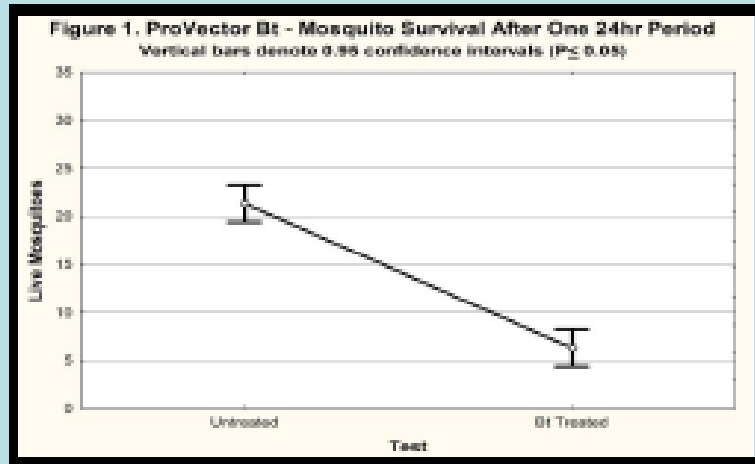


Entobac as Adulticide

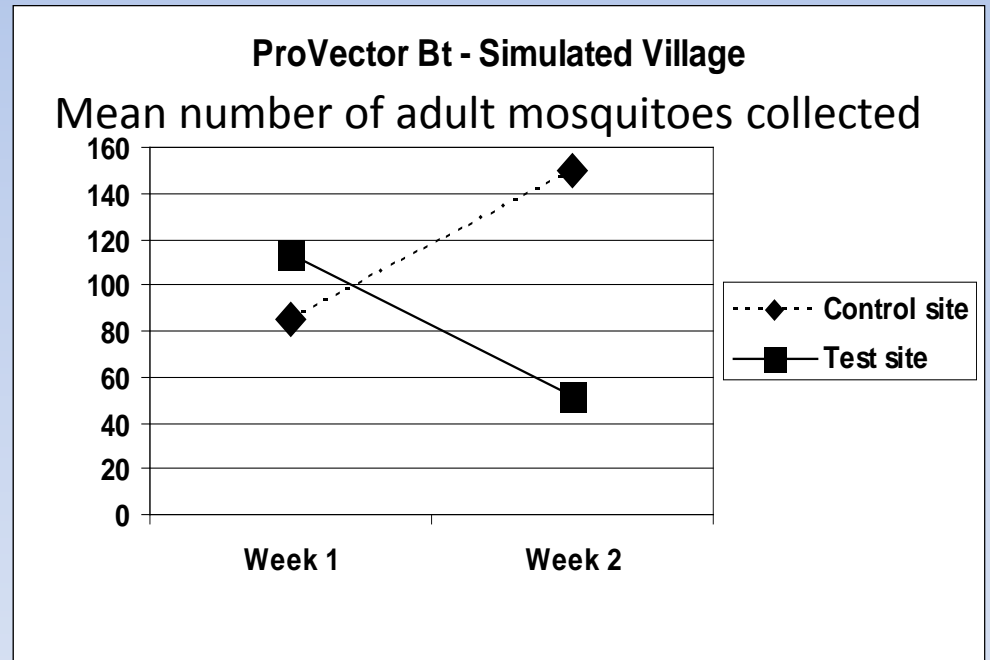
- Kills Adult Mosquitoes
- Entobac™ Bait Pad used with ProVector and BFT Bug Fighter
- Used with the ProVector™
- Active ingredient is *Bti* 6.5%
- Mosquito Attractant Bait (MAB)
- Bait Pad lasts about 6 months



Laboratory Trials of ProVector Bti Adulticide Formulation conducted BDIDL-Georgia Southern University (top) and AFRIMS-Walter Reed Army Institute of Research



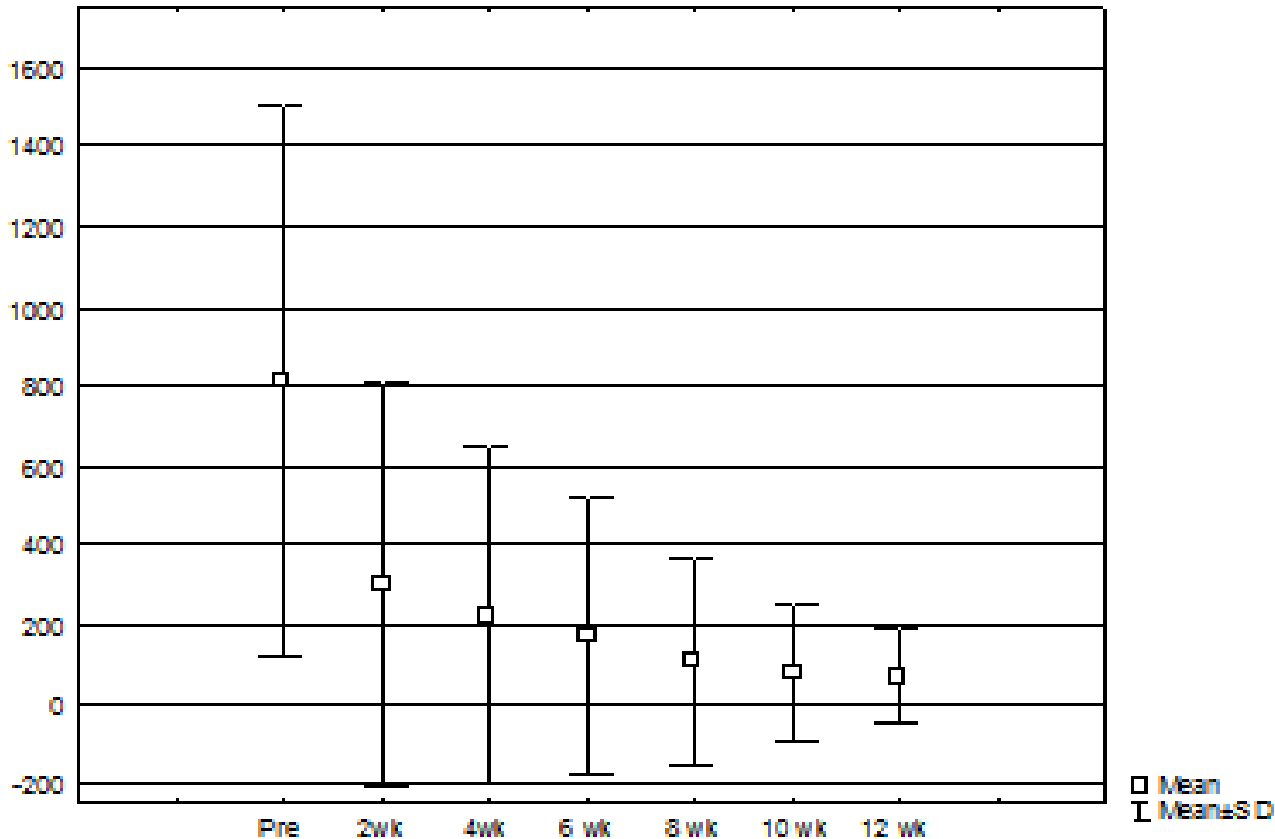
Simulated Village, Brooklet, Georgia



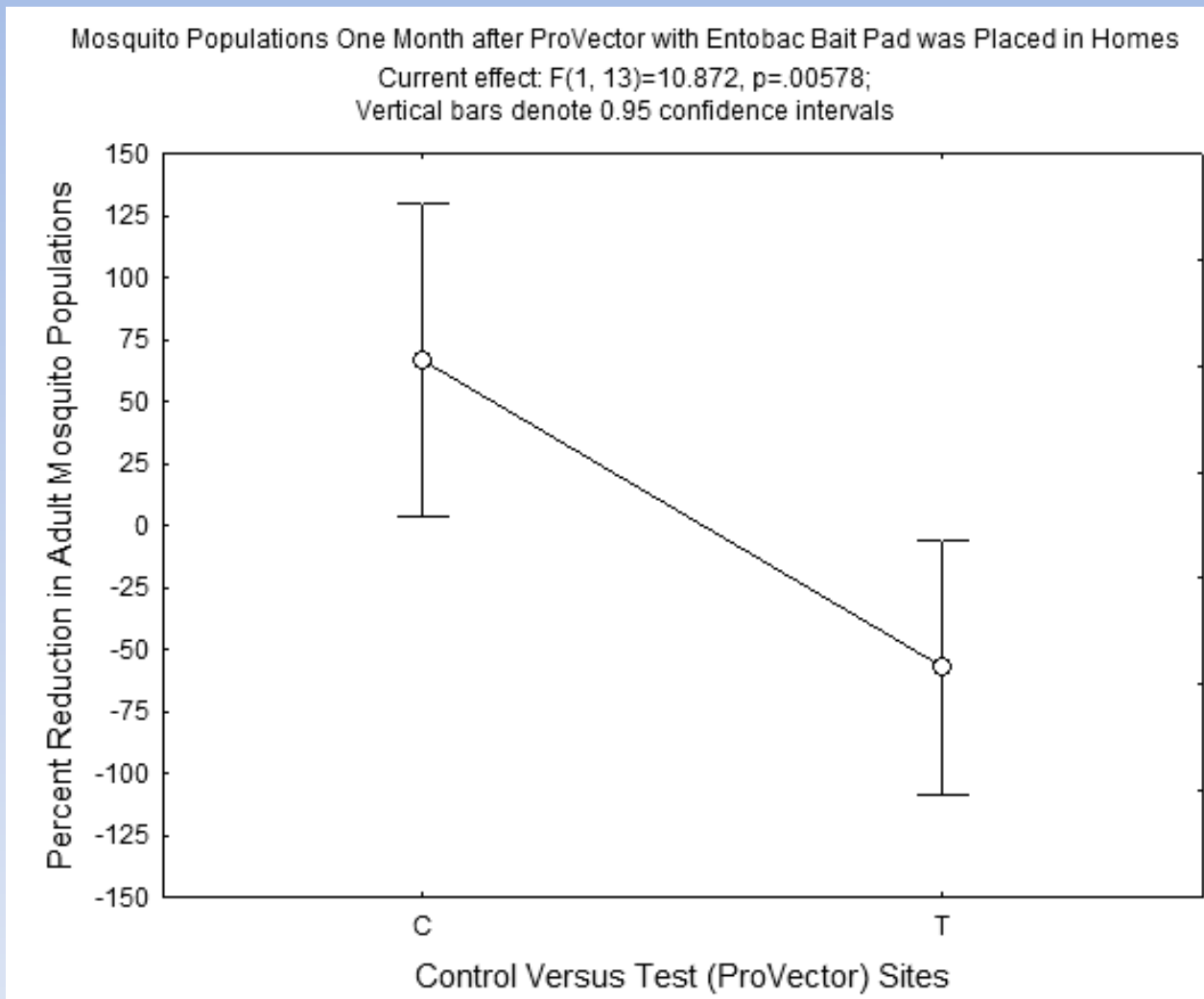
Sierra Leone, Roll Back Malaria, WHO

Sierra Leone, collected survey data from heads of family for estimates of adult mosquito number

(based on Boolean logic of descriptors)



Reduction in Mosquito Populations in Ahero and Nyalenda, Kenya



Independent Data Collected by US Army Medical Research Unit, Walter Reed Army Institute of Research and Kenya Medical Research Institute)

Ahero/Nyalenda Study



1) After one month,

- a. significant reduction of mosquitoes in the 9 homes with ProVector over the 7 control homes (Chi-square=9.35, $p < 0.05$).
- b. The mosquito population was reduced by $>60\%$ outside homes with ProVectors in them.

2) Mosquitoes returned to normal populations once the bait pads were used up within 5 months.

- a. significant difference between the mean percent growth of the ProVector homes vs. control homes (ANOVA: $F(1,13)=10.9$, $p < 0.05$).
- b. 135% lower number of mosquitoes around homes with the ProVector™ with Entobac™ than homes without

Feedback has been positive from NGO collaborators of ProVector Community Projects



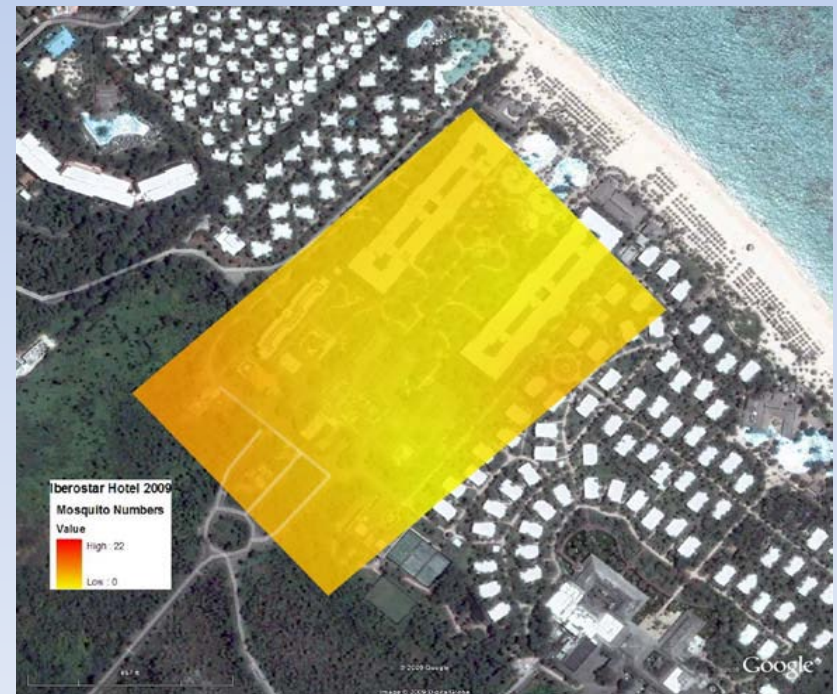
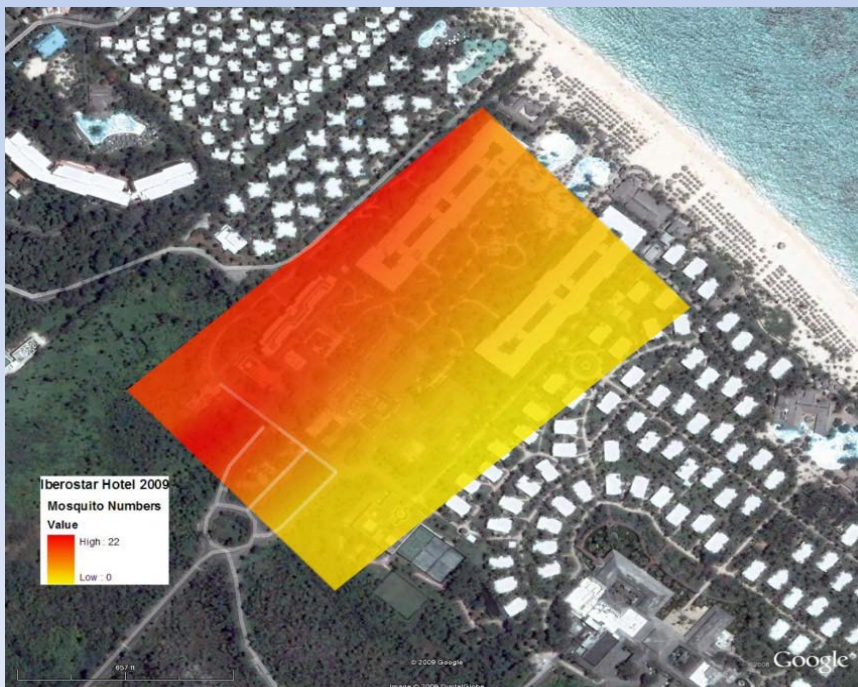
Entebbe, Uganda

Photos by: Dr. Louis Mukwaya, Uganda Virus Institute

Reduction of Adult Mosquitoes on Hotel Property in Dominican Republic

Mosquito numbers were significantly reduced after one month of placing ProVector Flower with Entobac on balconies in a hotel complex.

- 1) Red indicates high and yellow indicates low numbers of mosquitoes in mosquito traps.
- 2) Hotel staff and management also reported lower numbers of mosquito bites.



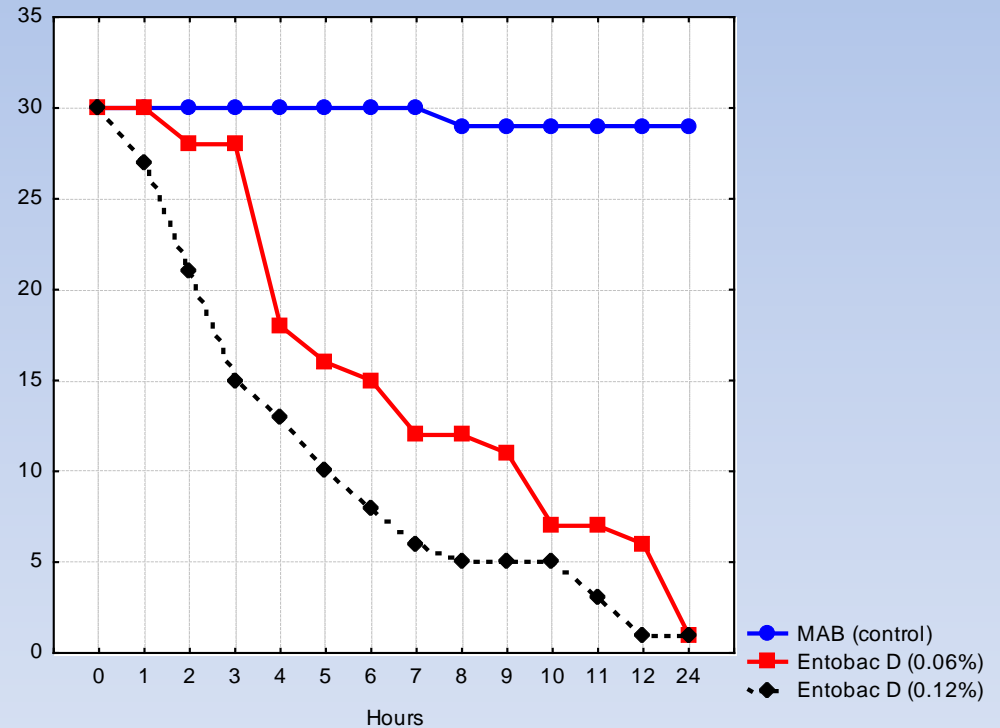
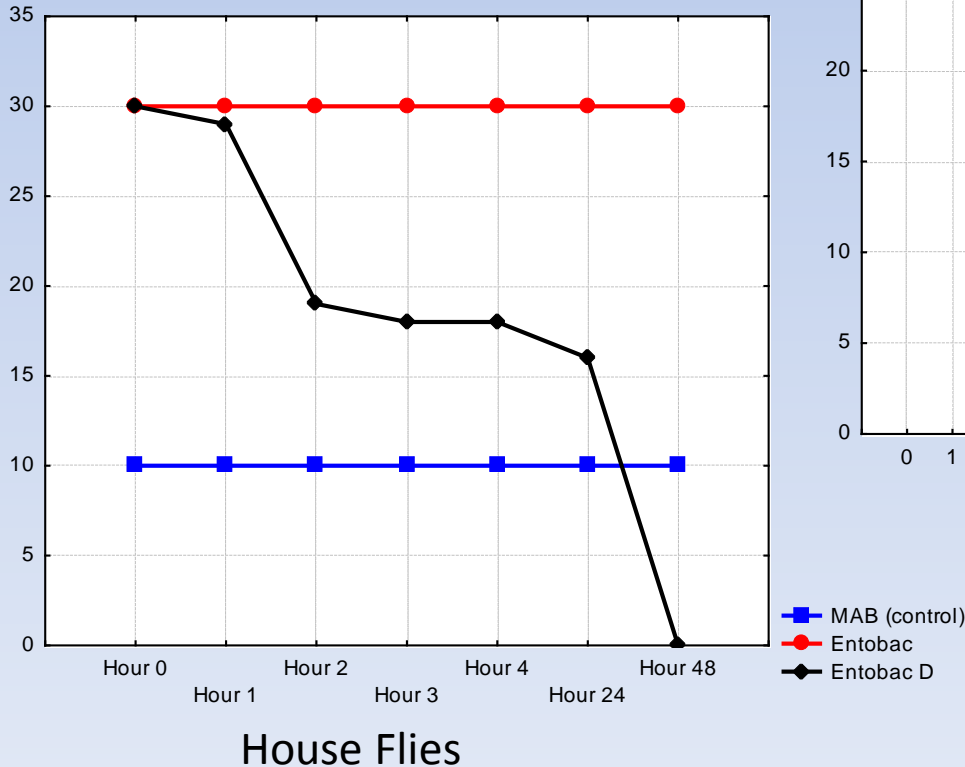
Entobac D Adulticide

- Kills Adult Mosquitoes and Flies
- AI - *Bti* 6.5% & Deltamethrin 0.1%
- Entobac™ D Bait Pad - BFT Bug Fighter™
- Applied to Netty Bible Tract
- Super Netty
- Bait Pad lasts 2 to 3 months



Comparison between Control, Entobac and Entobac D on survival of adult flies (*Musca domestica*) and adult Mosquitoes (*Aedes aegypti*)

Chi Square = 27.8, $p \leq 0.05$



Mosquitoes

Outdoor Prototype of ProVector™ with Entobac D

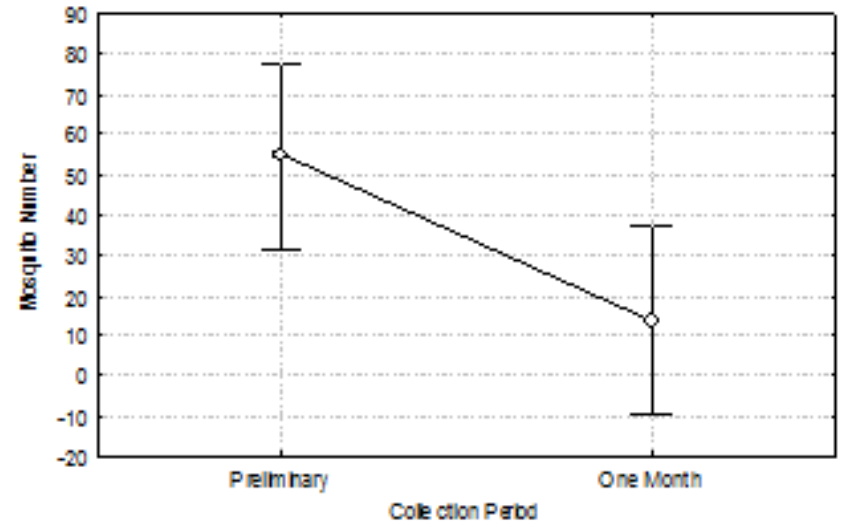
Reduced mosquito populations within one month in southeast Georgia



There was a significant reduction in mosquitoes at the Georgia test site within one month

Current effect: $F(1, 14)=7.0882, p=.01858$

Vertical bars denote 0.95 confidence intervals



The Netty Bible Tract uses colors to attract mosquitoes while providing an opportunity to tell the Wordless Gospel

Black and Red – *Anopheles*

Black and White – *Aedes*

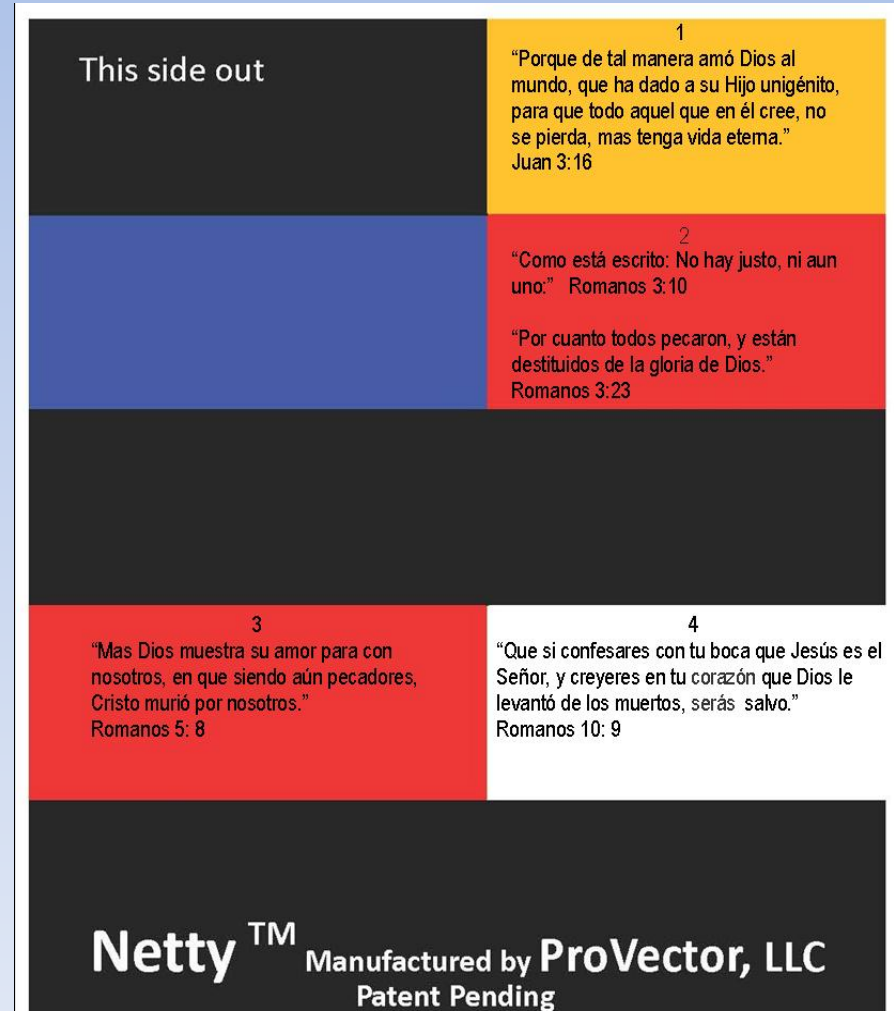
Yellow – *Culex*

Blue - Various fly species

**Black represents sin and separation from God
Red represents the blood of Jesus Christ shed
for our sins**

**White represents repentance and the
forgiveness of sins**

**“That if thou shalt confess with thy mouth the
Lord Jesus, and shalt believe in thine heart
that God hath raised him from the dead, thou
shalt be saved. For with the heart man
believeth unto righteousness; and with the
mouth confession is made unto salvation.”
Romans 10: 9-10**



Medical Missions

“If a brother or sister be naked, and destitute of daily food, And one of you say unto them, Depart in peace, be ye warmed and filled; notwithstanding ye give them not those things which are needful to the body; what doth it profit?” James 2: 15-16

**200 to 300 Children
come into the
Freetown Childrens
Hospital
per Day**

**We were able to
distribute 7,500
Netty Bible Tracts
in Sierra Leone**



Providing Netty Bible Tracts to Schools in Central America



The Future

- Expanding Vector Control Community Project (> 45 countries)
- Rebuilding after terminating exclusive licensee of the ProVector Flower
- EPA registration
- Add to current foreign registrations (Nigeria, Nicaragua)
- Assisting communities with microbusinesses
- Expanding medical missions support
- New Bed Bug trap/IGR formulation
- New Flea trap/formulation
- Outdoor ProVector



Thanks to:

- AFRIMS Thailand
- MOH, KEMRI and USAMRU-Kenya
- Virology Institute, Uganda
- Afro European Medical and Research Network
- Roll Back Malaria, Sierra Leone
- Children of the Nations
- Faith Multipliers International Ministries,
Nicaragua
- And many other NGO's serving around the world