



BIODIVERSITY STUDY  
Metofluthrin

Understanding the impact of our Metofluthrin products on insects other than mosquitoes.



In 2023, Thermacell Repellents ran a study to learn the effects of Metofluthrin products on insects other than mosquitoes to better understand the environmental impacts of the product in the treated area. The test was developed to evaluate whether other insects that venture into the protection zone are killed.

Do Thermacell Metofluthrin products kill insects other than mosquitoes?

“No, our products target mosquitoes with a minute dose of Metofluthrin that affects their sensors without having the same mortality effects on other insects. We found almost no dead non-mosquito insects in our study and no difference between the Thermacell treated areas and untreated, control areas, suggesting that Thermacell has **no effect on non-mosquito insects**.” – Dr. John Hainze, VP of Science & Research at Thermacell

VIEW DATA

The Test

Methodology:

Four testing plots were set up consisting of one white tarp with a CO<sub>2</sub> emitting source placed in the center. Two plots included an active Thermacell device with a Metofluthrin refill. Samples were taken at regular intervals while running and after running the device **to measure the rate of mortality among insects other than mosquitoes**.

Study Location:



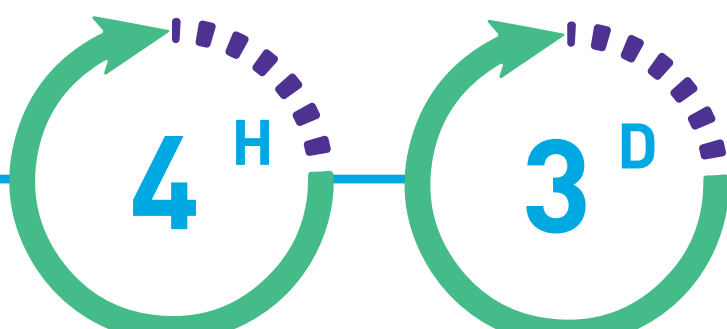
Gainesville, Florida  
(High Mosquito Density Area)

Species Assessed:



Local Non-Target  
Insect Species

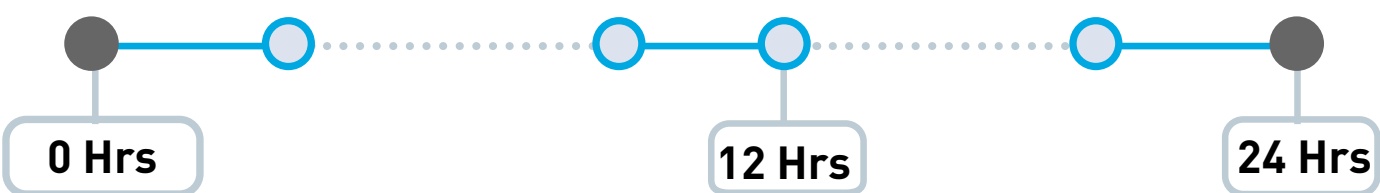
Testing Timeline:



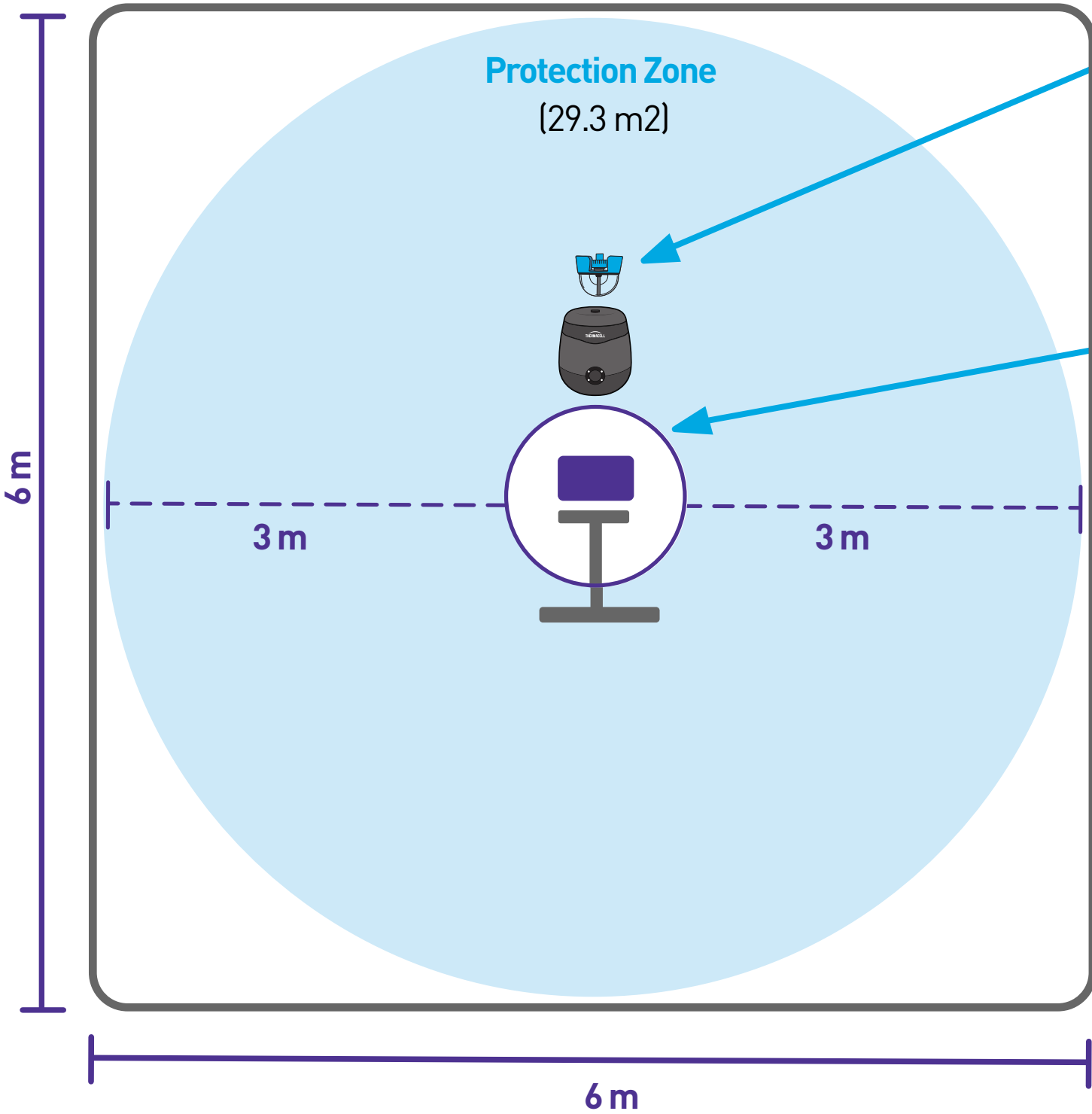
The Metofluthrin exposure periods ran  
at 4-hour intervals over 3 days.

Post-Exposure Assessment:

Rates of mortality among the collected insects were assessed  
at 0 hours, 12 hours, and 24 hours after the exposure period.



Aerial Station View:



**Metofluthrin Cartridge**  
Weight: 9.75 ml  
Active Ingredient Dose: 5.5% w/w

**Mosquito Attractant**  
Attractant emitting CO<sub>2</sub> at a rate  
mimicking human breathing  
(approximately 400-600 mL/min)

**Tarp**  
6 m x 6 m  
Collects fallen insect samples  
within the testing plot

Control Plots:

Two control testing plots  
were set-up without any  
Thermacell mosquito  
control device to confirm  
that Metofluthrin  
exposure responses  
could be accurately  
estimated.

Verification Plots:

Used collection data  
from BG-Sentinel traps  
outside of treatment  
zone to determine the  
background abundance  
of mosquitoes.

THE RESULTS

Conclusion:

The study concludes that Thermacell devices containing Metofluthrin **showed no significant difference in the rate of mortality to insects other than mosquitoes** within the Thermacell protection zone when compared to control plots.



All insects other than mosquitoes were collected from control and treatment-exposed tarps at nearly an identical rate (0.66 individuals and 1.00 individual per day, respectively; P > 0.05).

**This indicates that there is no significant impact on local insect populations other than mosquitoes by operating a Thermacell device using the 5.5% Metofluthrin formulation under environmental conditions.**

Study Reference  
McMillan, B. (2023), Impact of Thermacell Radius Zone Repellent VI (5.5% Metofluthrin) on Naturally Occurring Arthropod Populations, Thermacell Repellents, Inc., 26 Crosby Drive, Bedford, MA, 01730, GLP Study Number: TRI-BIO-005, February 24, 2023

