

STERILE INSECT TECHNIQUE

Frequently Asked Questions

What is Sterile Insect Technique or SIT?

The Sterile Insect Technique is a method of insect control where sterile male insects are released to mate with the local population of females of the same species. Once the males mate with the local females, the resulting eggs will not hatch.

Are there different types of SIT?

Yes, there are different types of SIT, depending on the species of insect and other factors. A common technique is the release of male insects that have *Wolbachia* in areas where the local female insects do not have *Wolbachia*. These matings result in “cytoplasmic incompatibility” and embryos do not develop. This technique is also referred to as Incompatible Insect Technique (IIT).

What is *Wolbachia*?

Wolbachia is a naturally occurring bacterium found inside the cells of many different kinds of insects, including butterflies, dragonflies and many species of mosquitoes. *Wolbachia* is transmitted maternally from a female insect through her eggs to her offspring.

How does SIT using *Wolbachia* work?

If a female insect that does not have *Wolbachia* mates with a male insect that has *Wolbachia*, her eggs will not develop or hatch, producing no offspring. The release of male *Aedes aegypti* mosquitoes with *Wolbachia* will increase the likelihood of incompatible matings and thus reduce the local population of *Aedes aegypti* mosquitoes.

Can *Wolbachia* be transmitted to humans?

Wolbachia is an intracellular bacterium found in over half of insect species (bees, butterflies, etc.) and is transmitted from the mother insect to her offspring. It is not found in humans, and it cannot be transmitted through an insect bite or contact.

Does this mean I can stop taking the same precautions against mosquito bites?

No. Continue to take the same precautions as you otherwise would to prevent mosquito bites.

Why are only male mosquitoes released?

Only male mosquitoes are released because male mosquitoes **DO NOT** bite and cannot transmit diseases to humans. Also, since male mosquitoes seek out females with which to mate, they can be used in SIT.

If I see more mosquitoes in my neighborhood - is this harmful to me and my family?

If you live in an area where sterile male mosquitoes are released, you may notice an increase in mosquitoes. Non-biting male mosquitoes are attracted to people as they seek female mosquitoes with which to mate. Released male mosquitoes cannot bite; however, you may have local female mosquitoes in your neighborhood. Female mosquitoes do bite and you and your family should continue to take precautions to prevent mosquito bites.

Why SIT and not another technology?

The newly invasive *Aedes aegypti* mosquito is extremely difficult to control using conventional methods, including chemical insecticides. We have an interest in exploring innovative mosquito control strategies that could be incorporated into our existing integrated mosquito management program, and we believe that the SIT approach has potential and should be evaluated.

How can I help the program?

Everyone can help in the control of mosquitoes by doing their part to eliminate mosquito production sites around their residences and businesses by regularly emptying containers that hold water, such as flowerpots, old tires, kiddie pools, outside toys, pet water bowls, etc. These serve as breeding habitat for mosquitoes.

Will reducing the mosquito population harm bats and birds (e.g., food deprivation)?

Aedes aegypti is an invasive insect and is not an essential part of the natural ecosystem. Reducing the population of this mosquito will not harm native insect-eating animals.