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Sterile Insect Technique (SIT) FAQs

What is SIT?
The sterile insect technique (SIT) is a method that is used to reduce insect populations. It involves releasing lab-reared sterilized insects to mate with the wild population to reduce or eliminate the targeted species.

Has SIT been used before?
Yes! SIT is not new technology. In fact, its first use in the United States occurred on Sanibel Island in 1951 to eliminate the screwworm fly. Recently, sterile screwworm flies were released to successfully control a localized outbreak in the Florida Keys. Currently, SIT is used to control various agricultural pests, including the Mediterranean fruit fly, along with medically important insects, such as the Tsetse fly which spreads sleeping sickness parasites to cattle and humans in Africa.

How does SIT work at LCMCD?
At LCMCD, we lab-rear *Aedes aegypti* mosquitoes which are commonly found in urban neighborhoods such as yours. Once at the pupae life stage, we X-ray the males which causes sterilization. These sterile adult male mosquitoes are then released into the environment to mate with wild females. The eggs laid by female mosquitoes will not hatch which will reduce the mosquito population. For population reduction LCMCD releases sterile male mosquitoes which do not bite. Only the female mosquito bites!

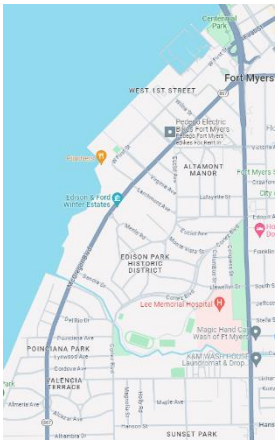
Is there any genetic modification with this method of control?
NO! Sterilization is achieved through X-ray irradiation and requires no genetic manipulation of the organism. The X-rays used are the same as those used in medical practices.

Which mosquito does LCMCD target with SIT?
Aedes aegypti, an exotic invasive mosquito, will be targeted. This species of mosquito can carry many viruses, including yellow fever, dengue, chikungunya, and Zika. It is an urban mosquito which means it breeds around homes and prefers to feed on humans. They are difficult to control by conventional methods (insecticide application and source reduction) due to their use of containers and daytime biting habits.

Will any female mosquitoes be released?
Male mosquitoes are separated out from females prior to their release. However, an exceedingly small number of females may be released with males. These females are no different from the local population except that they are sterile. There will not be an overall increase in biting mosquitoes due to releases.

What should I expect in my neighborhood after a release?
You might experience an increased number of mosquitoes right after a release. While it may be an annoyance (mosquitoes are pests!), LCMCD releases male mosquitoes which do not bite.

Where do you plan to release sterile mosquitoes?
Sterile male *Aedes aegypti* will be released near Centennial Park (downtown) to south of Fort Myers High School. Neighborhoods where releases are planned include West 1st Street, Altamont Manor, Edison Park, Poinciana Park, Valencia Terrace, and Sunset Park. This area is subject to change.



How often are the scheduled releases?
Generally, releases will occur twice per week. We plan on releasing Tuesdays and Fridays, but this schedule may change based on weather or other complicating factors.

How are you monitoring the effectiveness of the SIT program?
The SIT program follows rigorous documentation for quality and effectiveness. Released mosquitoes are dusted with fluorescent powder. Traps for adult mosquitoes and for eggs are strategically mapped and placed around the neighborhood. The mosquitoes and eggs collected in the traps are analyzed and recorded which helps us determine our impact on the population of *Aedes aegypti*.

Who do I contact if I have any questions?
You may email the Communications Director, **Jenifer McBride**, at mcbride@lcmcd.org or call 239-694-2174.

Under the Microscope!

Click HERE or Scan the QR code to learn more about Rachel Morreale, the scientist spearheading the SIT program!

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