Polynesian Mosquito

Pests and Diseases of American Samoa

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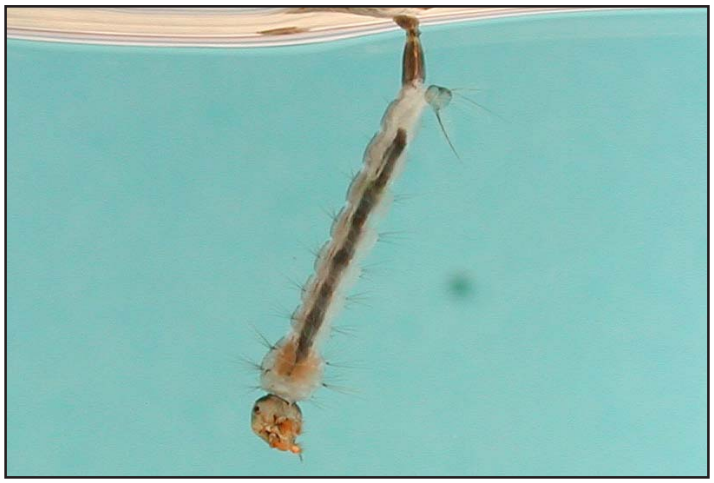
Introduction. The Polynesian mosquito, *Aedes polynesiensis*, is an important vector of dengue and filariasis and is found in abundance on all the Samoan Islands. It is a native of the South Pacific, occurring also in portions of the Cook Islands, Fiji, French Polynesia, Pitcairn, Tuvalu, and Wallis and Futuna. This mosquito is primarily a daytime feeder, with peak biting times in the early morning and late afternoon. It can also carry heartworm of dogs.

Adult female

Life cycle. Females deposit their tiny, brown, elongate-oval eggs individually just above the water line in natural or artificial containers, including discarded tires, buckets, metal drums, coconut shells, fallen leaves, tin cans, cups, tree holes, and crab holes. The eggs hatch when rain falls, raising the water level and submerging the eggs. The larvae develop in the stagnant water, feeding on decaying organic matter and associated microorganisms. After about 7 days the full grown larvae turn into pupae. Like the larvae, the pupae can swim, but they do not feed. The pupal stage lasts 2-3 days, after which the adult mosquito emerges. Both male and female adults feed on nectar and other plant fluids to obtain energy. Females must feed on blood in order to form eggs, but males do not feed on blood. Hosts for the females include humans, pigs, dogs, horses, birds, and other animals. Adults prefer to rest in dark, humid places, such as dense vegetation or crevices in stone walls. Most biting occurs during daytime, especially in the morning and early evening.

Dengue transmission. Dengue is caused by a virus. When a mosquito feeds on the blood of an infected person, it ingests the virus. The virus multiplies inside the mosquito and eventually spreads to the salivary glands. After 8-10 days, the mosquito can infect another person when it injects its saliva during feeding.

Eggs



Larva

Pupa

Filariasis transmission. Filariasis is caused by tiny worms. A mosquito feeding on an infected person ingests the worms from the person's blood. The worms develop inside the mosquito and after about 14 days migrate to the mosquito's mouthparts from which they can enter another person when the mosquito feeds again. Once inside the person, the worms travel to the lymphatic vessels, where they mate and, after 6-12 months, produce offspring which enter the blood, ready to be ingested by a feeding mosquito, thus repeating the cycle.

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Management. The most effective method to control the Polynesian mosquito is to eliminate the places where it breeds. Because these mosquitoes generally do not fly far, eliminating breeding sites around homes, schools, and places of work can greatly reduce abundance of mosquitoes in those places where they threaten people. It only takes a small volume of stagnant water to provide a home for larval mosquitoes. Breeding places can be eliminated by doing the following.

- dispose of old buckets, cans, cups, and plastic and styrofoam containers in trash barrels or bins
- break up, bury, burn, or compost old coconut shells
- properly dispose of old tires, puncture them, fill them with soil, or store them under a roof, so they cannot fill with water
- use sand or soil to fill tree holes and hollow stumps
- cap fence post pipes
- empty and clean animal water dishes and flower vases at least weekly
- turn small boats upside down, so they do not accumulate standing water
- clear clogged gutters and drainage ditches, so water drains freely

In addition to eliminating breeding sites, installing screens on doors and windows and keeping doors closed can help keep mosquitoes out of houses. Clearing dense vegetation around houses can help keep mosquitoes away. When entering areas with lots of mosquitoes, wearing long-sleeved shirts, long pants, and shoes and using mosquito repellent can help prevent bites.

Breeding sites

Breeding sites

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