

New World Screwworms

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New World screwworms (*Cochliomyia hominivorax*) are fly larvae (maggots) that can infest livestock and other warm-blooded animals, including people. They most often enter an animal through an open wound or, in the case of newborns, the navel. They feed on the animal's living flesh and, if not treated, infestations can be fatal. While New World screw worms have not been widely present in the United States since the 1960s, they are still found in most of South America and in five Caribbean countries.

The adult screwworm fly is the size of a common housefly, or slightly larger, but different in color and appearance. The screwworm fly has orange eyes and a metallic dark blue to blue-green or gray body. It also has three dark stripes running down its back, with the middle stripe shorter than the outer two. A female screwworm fly typically mates once in her lifetime and lays her eggs on or near an open wound or the mucous membranes of an animal's nose, mouth or ears. In her lifespan, the screwworm fly can produce thousands of offspring. The eggs hatch into larvae within a day and then feed on the animal's tissue for five to seven days before maturing. The mature larvae then tunnel into the ground and emerge as adults, ready to mate and continue the cycle.

While they can fly much farther under ideal conditions, adult flies generally do not travel more than a couple of miles if there are suitable host animals in the area. New World screwworms are more likely to spread long distances when infested animals move to new areas and carry the pest.

History

In the 1950s, The United States Department of Agriculture's (USDA) Research Service developed a new method to eradicate the pest using a form of biological control called the sterile insect technique. Infertile male flies are released in infested areas. When they mate with local females, no offspring result. With fewer fertile mates available in each succeeding generation, the fly breeds itself out of existence.

The USDA began using this technique in Florida in 1957 and eradicated the flies from the entire southeastern U.S. by 1959. The technique was next applied to the more extensively infested Southwest in 1962. By 1966, self-sustaining screwworm populations were eliminated from the United States. However, there were still infestations in Mexico, and animals crossing the border were causing some re-infestations in the United States. The USDA worked with Mexican officials to reduce the flies in that country. After 1982, there were no more re-infestations in the U.S., and Mexico was officially declared free of screwworms in 1991. The USDA then partnered with the countries of Central America to eradicate New World screwworms.

Today, the USDA and its partners maintain a permanent sterile fly barrier at the Darien Gap between Panama and Colombia to prevent the establishment of any screwworm flies that enter from South America.

Screwworms in Monroe County, Florida

Screwworms have been identified in Key deer on Big Pine Key in Monroe County, Florida. There have also been a few reported cases of pets that have had screwworm myiasis.

There was an agricultural emergency declared in Florida due to the detection of this screwworm infestation. Florida is working closely with the USDA and other partners on control and response efforts to eradicate the screwworm.

Signs of Myiasis

Screwworms are typically found on warm-blooded animals that have a draining or enlarging wound. Almost any type of wound can become infested with screwworm larvae, including those caused by feeding ticks, castration, dehorning, branding, shearing, barbed wire fences, and even shedding of antler velvet in deer. The navels of newborn mammals can also become infested.

It can be very difficult to see the early stages of screwworm larvae feeding in a wound. The most obvious sign is a change in the wound's appearance; as larvae feed, the wound gradually enlarges and deepens. An infested wound also gives off an odor and some bloody discharge.

Even if the actual wound on the skin is small, it could have extensive pockets of screwworm larvae beneath it. Infested livestock usually show signs of discomfort or experience a drop in production. Typically, these animals will separate themselves from the rest of the flock or herd and seek shady or secluded areas to lie down. Infested animals that are not treated in seven to 14 days may die. While human cases of New World screwworm are rare, they have occurred. People infested with screwworm usually have discomfort or itching at the wound site.

Guidance for Human Health

While the occurrence of screwworms in humans is less common than in livestock or other mammals, people are urged to keep wounds clean and closely monitor open cuts and wounds for the presence of maggots. Anyone who suspects the presence of screwworms should contact a physician immediately.

Guidance for Animal Health

Carefully inspect animal wounds and hides for signs of screwworm. Screwworm eggs are creamy, white and deposited in a shingle-like manner on or near the edges of superficial wounds. The larvae are cylindrical with one pointed end and one blunt end and rings of dark brown spines around the body. Female screwworm flies are larger than a housefly with a dark blue to blue-green body and reddish-orange head.

Animal Treatment

Screwworm infestation is treated by cleaning the site and topical application of a pesticide. Treated wounds should be inspected daily until completely healed. The examining veterinarian will remove larvae from the wound with tweezers, place them in alcohol, and submit them to the Louisiana Department of Agriculture and Forestry Veterinary Health Division (225) 925-3980.

Report Suspected Cases

Anyone who suspects the presence of screwworms, or has questions or concerns can contact the Louisiana State Public Health Veterinarian, Dr. Gary Balsamo at the Infectious Disease Epidemiology Section (800) 256-2748.

This document was prepared using the latest information available to the Infectious Disease Epidemiology Section and the State Public Health Veterinarian. Should any of this information be outdated or incorrect, please inform the State Public Health Veterinarian so updates and corrections can be made as soon as possible.