

New World Screwworm (*Cochliomyia hominivorax*) in the U.S., 2000

This is an example of how prompt actions taken by veterinary practitioners prevented the introduction and spread of screwworm myiasis, a devastating disease. In the U.S. Screwworms were once endemic throughout the southern United States, but were eradicated by a program that involved the release of sterile male flies. The New World screwworm still exists in parts of the Caribbean and South America and could be re-introduced to the U.S. at any time.

On February 27, 2000, a shipment of 17 horses from Argentina arrived at a quarantine facility in Miami, Florida. Two days later, 16 of the 17 horses were released from quarantine. On March 1, the one remaining horse, a four-year-old chestnut thoroughbred gelding, was also released. The next day, a private practitioner performed a physical examination on this horse and found minor discharge from the prepuce, no swelling, and a bad odor – and, on closer examination, a number of insect larvae in the penis. The practitioner collected 50–100 larvae from the distal penis of the horse and contacted federal authorities. On March 3, a USDA APHIS foreign animal disease diagnostician (FADD) submitted samples of larvae from the horse to the USDA National Veterinary Services Laboratories (NVSL) in Ames, Iowa, and appropriately treated the horse and premises. On March 4, the NVSL confirmed that the samples from the horse were screwworm larvae in the third instar stage. The horse received a second treatment on March 6 and remained in quarantine until its wound was completely healed. It was released from quarantine on March 15, after being examined by a federal veterinarian. The other 16 horses in the February 27 shipment were traced and each horse was examined twice by a FADD, at three to five day intervals. No evidence of disease was found in any of these horses. APHIS Veterinary Services began intensive screwworm surveillance in Florida and sentinel animals were placed in the West Palm Beach area from March 10 to April 17. Screwworms were not found.

Another screwworm incident occurred in December 2000 in Dade County, Florida, in a pet cat that had traveled with a U.S. military employee from the Guantanamo Bay military base in Cuba to the U.S. In Cuba, a veterinarian had treated an abscess on the foot of the cat with Ivermectin for five consecutive days before departure. Throughout the treatment, the veterinarian removed several dead larvae from the wound, which was healing over. When the owner arrived in Florida, he took the cat to a private practitioner, who removed one larva from the partially healed abscess. The practitioner shipped the larva to the NVSL where the diagnostician identified a mature *Cochliomyia hominivorax* larva in the third instar stage. The cat was treated and the disease did not spread.

What are screwworms?

Screwworm myiasis is a devastating parasitic disease that has long been a leading cause of livestock losses in tropical areas of the Western Hemisphere. The larvae of the New World screwworm fly, *Cochliomyia hominivorax*, feed on the open wounds of warm-blooded animals, including humans. Unlike ordinary maggots that subsist on debris and dead tissue, screwworm larvae attack living flesh, causing debilitation and sometimes even death. Wounds prone to screwworm infestation include those caused by feeding ticks, the bites of vampire bats, castration, dehorning, branding, shearing, wire cuts, sore mouth in sheep, and shedding of the velvet in deer. The navels of newborn mammals are also common sites of infestation.

New World screwworms were once found throughout the tropical and subtropical regions of North, Central, and South America, but have been eradicated from many countries by a series of cooperative programs involving the release of sterile male flies. This approach, conducted and sustained by the USDA APHIS, has systematically eliminated screwworms from the U.S., Mexico and most of Central America over the last five decades. In late 1998, the USDA and Panama began the final phase of the Screwworm Eradication Program in that southernmost Central American country. Because there is no screwworm control plan for South America, sterile fly releases across eastern Panama will continue to be necessary even after Panama becomes screwworm-free. The sterile flies will create and maintain a biological barrier in Panama's Darien Gap, halting the pest's northward migration at the Panama-Colombia border. In addition to South America, screwworm is endemic on a few islands in the Caribbean, including Hispanola, Cuba, and Jamaica.

Sources of Information

Emergency reports submitted to the OIE by the USDA in 2000.

www.oie.int

USDA APHIS Factsheet: <http://www.aphis.usda.gov/oa/pubs/fsscworm.html>

Screwworm containment in Panama during final military withdrawal by Cpt. Todd M. Thomas, US Army Veterinary Corps:

http://www.aphis.usda.gov:80/vs/training/ss_2000/pdf/pan-can-shutdown.pdf

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