TEXAS A&M AGRILIFE RESEARCH
TEXAS A&M AGRILIFE EXTENSION
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New World screwworm

Phillip Kaufman[1], Sonja L. Swiger[1], Andy Herring[2]

Background

The New World screwworm (NWS, *Cochliomyia hominivorax*) is a parasitic fly native to the Western Hemisphere. It lays eggs in the living tissue of fresh wounds in warm-blooded animals. The larvae (maggots) feed on the host's flesh, causing severe wounds and often death if untreated. The pest was eradicated in the U.S. in the 1960s. Since then, it occasionally reemerges and has resurfaced in Central America and Mexico. They are controlled only through the release of sterile males, known as the sterile insect technique (SIT). This approach, along with regular active surveillance and livestock inspections, has proven highly successful. As of May 2025, renewed attention to this parasite is crucial, as it may pose future risks to livestock and wildlife.

Signs of New World screwworm in animals

The name screwworm refers to the feeding behavior exhibited by the maggots as they burrow (screw) into the wound. These maggots and their feeding cause extensive damage by tearing at the hosts' tissue with sharp mouth hooks. The wound will become larger and deeper as more and more eggs hatch and larvae feed on the living tissue. This results in serious and often deadly damage to the animal if not discovered and treated.

Figure 1. Screwworm infestation in dog

Continual and regular monitoring and evaluation of all livestock are important for herd and flock biosecurity and health considerations. Producers should be alert for possible signs associated with potential infestation including:

- Foul-smelling wounds with visible maggots
- Animals biting or licking at wounds
- Lesions in navels, ears, dehorning or branding sites
- Unusual restlessness or lethargy

Figure 2. Screwworm larva

In the New World screwworm, the larval stage (Figure 2) is responsible for inflicting significant injury and economic loss. These larvae inhabit the wounds of living animals, where they cause extensive tissue damage. Mature larvae can reach 17 mm in length (2/3 of an inch) and have spines that protrude from the body and wrap around in a spiral giving them the name screwworm. Official identification of larvae is based largely on the presence or absence of dual internal breathing tubes. Confirmation of the fly identity can be determined only by a trained individual. Specimens must be submitted to Texas Animal Health Commission.

Suspicious cases must be reported

Immediately isolate any suspected animals and contact:

- Your local *veterinarian* or *wildlife biologist*
- Texas Animal Health Commission: (800) 550-8242
- U.S. Department of Agriculture Veterinary Services: (512) 383-2400

To prevent unintentional spread, avoid transporting any suspected animals until advised.

[1]Professor, Department of Entomology, College of Agriculture and Life Sciences, Texas A&M University, Texas A&M AgriLife
[2]Professor, Department of Animal Science, College of Agriculture and Life Sciences, Texas A&M University, Texas A&M AgriLife

Identifying screwworm flies

Adult New World screwworms, *Cochliomyia hominivorax*, (Figure 3) are metallic blue blow flies with three distinct stripes that run down the top (thorax) of the fly just behind the head with large orange eyes.

This fly resembles the closely related secondary screwworm, *Cochliomyia macellaria*, which is also a metallic blue blow fly with three distinct stripes, but the stripes all begin at the same point behind the head. Adult secondary screwworms do not deposit eggs on living animals, and their larvae do not infest them. Therefore, they do not pose a threat to animal health.

Adult flies of interest can be photographed. Please send pictures to the Texas A&M AgriLife Extension Service:

screwworm@ag.tamu.edu

Report any mammals or birds (wild or domesticated) with signs of irritated behavior or head shaking, those that express a smell of decay but are alive, or those that show evidence of fly strike and/or the presence of fly larvae (maggots) in wounds.

Potential control products for use in the U.S.

U.S. producers have not treated livestock for NWS in more than 40 years. Although this health threat has not been experienced in several decades, several treatment strategies exist today and should always be used in consultation with your local veterinarian. Treatments could include:

- Preventive measures: treat wounds promptly and maintain sanitation
- After infestation: topical larvicides (e.g., coumaphos, permethrin), cleaning and removal of larvae

Visit the U.S. Department of Agriculture Animal and Plant Health Inspection Service (USDA-APHIS) list of potential pesticides against New World screwworm
https://www.aphis.usda.gov/sites/default/files/pesticides-for-nws.pdf

Figure 3. Adult New World screwworm fly

Screwworm in the new world

Screwworm infestations occur in Jamaica, Cuba and across South America. Increasing detections of this fly north of its containment barrier, the Darien Gap in Panama, were noted in 2023. Typical insecticide suppression of the New World screwworm is less effective than with other insect pests due to its wide host range and occurrence on wildlife.

Online resources

Texas A&M AgriLife screwworm webpage
https://agrilifeextension.tamu.edu/new-world-screwworm/

USDA-APHIS screwworm website
https://www.aphis.usda.gov/livestock-poultry-disease/cattle/ticks/screwworm

Texas Animal Health Commission New World screwworm emergency management guide
https://www.tahc.texas.gov/animal_health/feverticks-pests/EMGuide-NewWorldScrewworm.pdf

Texas A&M Veterinary Medical Diagnostic Laboratory
https://tvmdl.tamu.edu/

History of the screwworm in the U.S.
https://www.nal.usda.gov/exhibits/speccoll/exhibits/show/stop-screwworms--selections-fr/introduction

New World screwworm and other bot flies in animals
https://www.merckvetmanual.com/integumentary-system/flies/obligatory-myiasis-producing-flies-of-animals

Biosecurity and herd health considerations
https://www.aphis.usda.gov/livestock-poultry-disease