

2(ee) Recommendations and the US New World Screwworm Response



New World screwworm –
What is it?
Where have we been?
Where are we now?



EXAMPLE HEADLINES - WHAT'S IN THE NEWS:



FDA issues emergency use authorization for ivermectin solution to prevent screwworm in horses

[Link](#)



Are New World screwworm cases in Texas slowing down? Latest count, map

[Link](#)



Summer heat could pave way for New World screwworm to make its way to Oklahoma

[Link](#)



Drug Earns FDA Approval for Treating New World Screwworm in Horses

[Link](#)



Starr County confirms first New World Screwworm case in the Rio Grande Valley

[Link](#)



Missouri's animal movement regulations updated in response to New World screwworm

[Link](#)



FDA authorizes ivermectin to protect horses from New World screwworm

[Link](#)



Timeline of New World Screwworm Cases and Response in the U.S.

[Link](#)



Wisconsin Tightens Animal Import Rules as Part of New World Screwworm Mitigation Efforts

[Link](#)

New World screwworm (NWS, *Cochliomyia hominivorax*)



The adult screwworm fly is about the size of a common housefly (or slightly larger) with orange eyes, metallic blue or green body, and three dark stripes along the back. The term screwworm refers to the screw-like shape of the larvae that feed on the host animal. These are aggressive larvae which burrow into living flesh causing serious, potentially fatal damage.



Life Cycle of New World Screwworm¹

Adult female screwworm fly is attracted to the smell of an open wound on warm-blooded animals and lays her eggs on the edges of the wound.



Within a few hours the eggs hatch into worms, which burrow into the wound to feed. This destructive process worsens the wound and attracts more flies, which lay more eggs causing further damage.



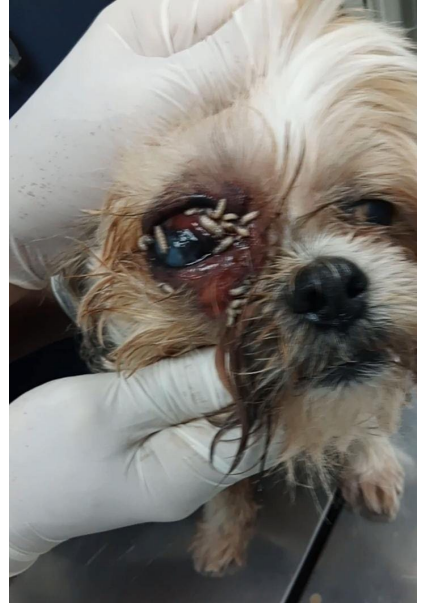
The worms feed for approximately a week and then fall off and burrow into the ground to pupate.



After at least 7 days an adult fly emerges.



¹ Photo source: USDA APHIS. STOP Screwworms: Selections from the Screwworm Eradication Collection, Special Collections, National Agricultural Library. <http://specialcollections.nal.usda.gov/screwworm/index>.



If you see maggots on an animal, contact your veterinarian. Visit [USDA's website](#) for more information about NWS in animals. Veterinarians should report any suspicious cases immediately to their [state animal health official](#) and [APHIS office](#).

Disease Transmission

- Female fly deposits eggs around a wound or mucous membrane opening
 - Umbilicus, genitalia, eyes, ears
 - Wounds as small as a tick bite
- Larvae enter wound to feed on living tissue
- Compound/mixed infestations in one wound are common
 - Other species of blowflies
- This disease is not transmitted animal to animal, animal to human, or vice versa

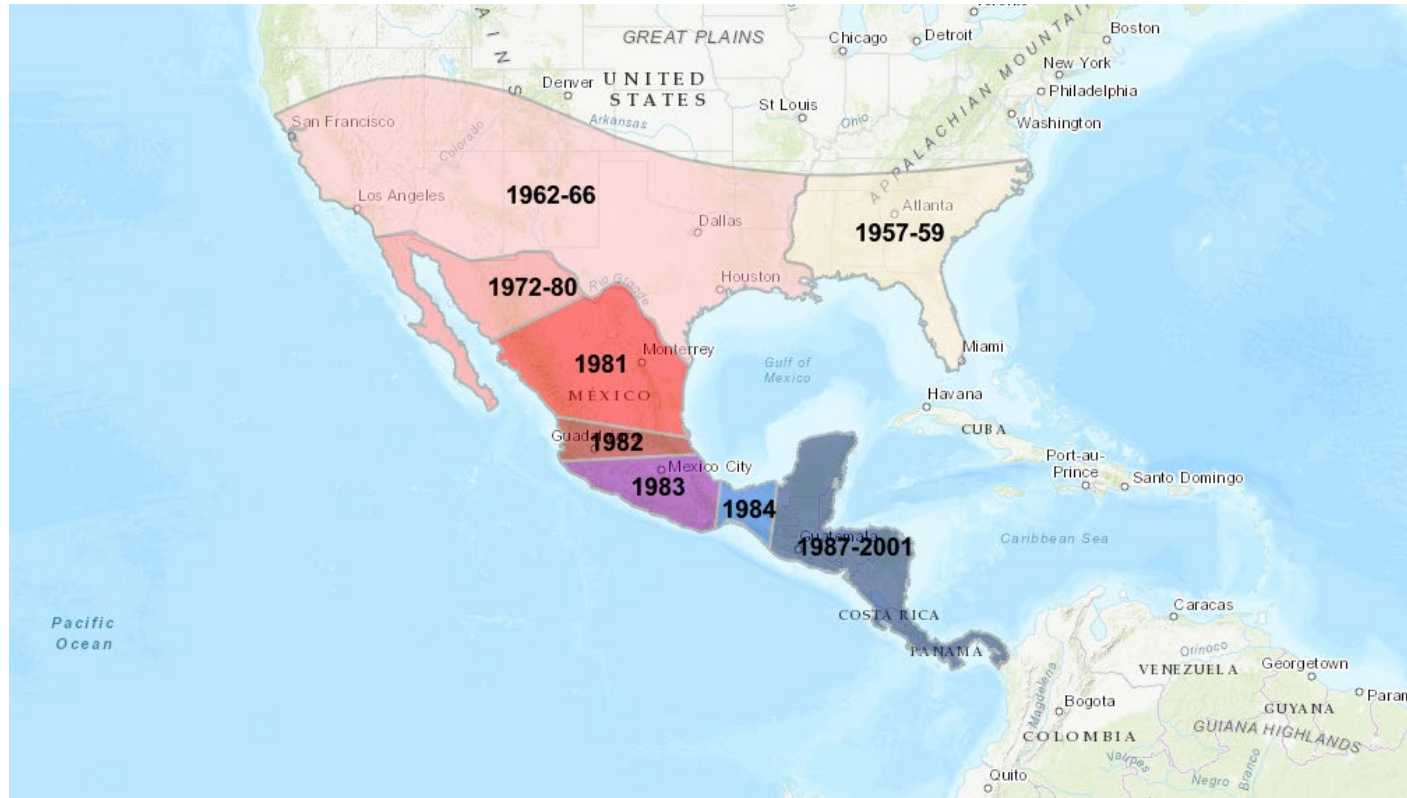
Clinical Signs

- Can be subtle – off feed, isolating from others in herd, and depression
- Larvae in wound usually visible by day 3 of infestation
 - Wound may appear small on outside; however, the larvae will burrow deep into pockets under the skin
- Bloody discharge, foul odor
- Secondary bacterial infections
- Mortality
 - If untreated, can be fatal in 7-14 days
 - Near 100% mortality possible in umbilical infections of neonates

Treatment

- Parasiticides successful if administered early in the disease process
- Topical approach likely less effective
 - NWS flies are attracted to wounds systemic treatments are more efficacious
- Residual action needed
 - Lasting prevention (of infestation/reinfestation once the initial infestation is diagnosed and treated)
- Larvae are generally deep in wound pockets requiring penetration/contact or systemic distribution of the product

History of Eradication



An eradication program to remove the screwworm from the United States was started in 1957 using sterilization of flies developed by USDA's Agricultural Research Service. NWS was effectively eradicated from the United States in 1966.

An outbreak in the Florida Keys (October 2016) was successfully eradicated by March 2017 using this same method to eliminate New World screwworm from the United States once again.¹

Since 1984, Mexico and several countries in Central America had been declared free of screwworm... until recently.

¹<https://www.aphis.usda.gov/livestock-poultry-disease/cattle/ticks/screwworm/new-world-screwworm-story-map>

Current Situation

- Until June 2023, Panama was considered the biological barrier against this pest for the rest of Central and North America, through the dispersal of sterile flies from Lake Bayano to 20 nautical miles into Colombia.
- Currently, the screwworm (GBG) is present in all Central American countries and Mexico—most of which had been free of the pest for over 20 years.¹
- June 3, 2027 - First NWS case confirmed by USDA.
- As of August 6, there are currently 45 cases recorded, 5 of which are active.²

¹ <https://www.copeg.org/en/situacion-actual/>

² https://publicdashboards.dl.usda.gov/t/MRP_PUB/views/NewWorldScrewwormPublicReporting_17805168329840/SummaryDashboard?%3Aembed=y&%3AisGuestRedirectFromVizportal=y

What can we do?
What are we doing?



Sterile Fly Release Program

- Female screwworm flies mate one time in their 21-day life span. As more sterile screwworm flies are released, the population of fertile screwworm flies decreases until the population dies out.¹
- COPEG: The Panama–United States Commission for the Eradication and Prevention of Screwworm Infestation in Livestock (COPEG)
 - Previous to the current outbreak, COPEG was producing 20-40 million eggs per week in order to keep suppression at the Darien Gap (capacity was/is 100 million/week)
- Efforts are underway to increase production via efforts in Mexico and the US.

¹ <https://www.aphis.usda.gov/livestock-poultry-disease/cattle/ticks/screwworm/new-world-screwworm-story-map>

Options for Prevention and Treatment

- Drugs (FDA) –
 - Emergency Use Authorization
 - Conditional Approval
- Pesticides (EPA/states) –
 - Section 18
 - 2(ee) Recommendation

FDA's Recommendations

The chart to the right shows extra-label product consideration for veterinarians. The products may be used under established Veterinary - Client - Patient - Relationships.

New World Screwworm: Information Veterinarians May Find Useful in Making Extra-Label Use Decisions

(see footnotes below table)

FDA-Approved Product 1 2	FDA-Approved Route of Administration 3	FDA-Approved Dosage Form	FDA-Approved Species 4	Scientific literature investigating potential efficacy for prevention or treatment of NWS myiasis 5
Doramectin 1%	Subcutaneous (cattle) and Intramuscular (cattle and swine) Injection	Solution	Cattle, swine	Cattle (Anziani et al., 2000; de Aquino et al., 2022; Moya-Borja et al., 1997; Moya-Borja et al., 1993; Muchiut et al., 2025; Muniz et al., 1995; Silva et al., 2015) No published research available in swine.
Ivermectin 1%	Subcutaneous Injection	Solution	Cattle, swine, reindeer, bison, fox	Cattle (Anziani et al., 2000; Anziani & Loreficce, 1993; Benitez Usher et al., 1997; de Aquino et al., 2022; Moya-Borja et al., 1997) No published research available in swine, reindeer, bison or fox
Nitenpyram	Oral	Tablet	Dog, cat	Dogs (Correia et al., 2010; Han, Toh, et al., 2018) Cats (de Souza et al., 2010)
Afoxolaner	Oral	Tablet	Dog	Dogs (Cutolo et al., 2021; Han, Toh, et al., 2018)
Lotilaner	Oral	Chewable tablet	Dog, cat	Dogs (do Vale et al., 2023)
Sarolaner	Oral	Chewable tablet	Dog	Dogs (Oliveira et al., 2019)
Milbemycin oxime	Oral	Tablet	Dog, cat	Dogs (Han, Chen, et al., 2018)
Milbemycin oxime and spinosad	Oral	Chewable tablet	Dog	Dogs (Han, Chen, et al., 2018)
Spinosad	Oral	Chewable tablet	Dog, cat	Dogs (Han, Chen, et al., 2018; Oliveira et al., 2018)

USDA's Recommendations

Table 2. Examples of federally registered products labeled for control of blow flies.

Product Name*	EPA Registration Number	Registrant	Active Ingredient(s)	Applicable Labeled Use Site(s)
ULD® BP-50 Insecticide <i>Alternate brand name:</i> ULD® BP-50 Contact Insecticide Formula 1	1021-2836	McLaughlin Gormley King Company, D/B/A MGK®	Pyrethrins Piperonyl butoxide	Cattle and horses; Inside stables, livestock and poultry housing, loafing sheds, milk rooms, rabbit houses, research animal areas, and zoos
Ecto B715 Insecticide	67505-10	Ecto Development Company	Permethrin Piperonyl butoxide	Cattle, sheep, goats, and swine
Permethrin 10 EWC <i>Alternate brand name:</i> Martin's Permethrin 10% Multi-Purpose Insecticide Permethrin Martin's Horse & Stable Spray Vector-Ban Misting Insecticide for Residential Systems & Barns	53883-72	Control Solutions, Inc	Permethrin	Swine

Product Name*	EPA Registration Number	Registrant	Active Ingredient(s)	Applicable Labeled Use Site(s)
Tempo® SC Insecticide <i>Alternate brand name:</i> Tempo® SC Ultra Insecticide	101563-86 (transferred from 432-1363)	Environmental Science U.S., LLC	Beta-cyfluthrin	Inside and outside livestock and poultry housing and pet kennels
Pestie Home Barrier E1	100947-2	Pestie, Inc	Esfenvalerate Prallethrin Piperonyl butoxide	Inside and outside livestock and poultry housing
F7180-13 Insecticide	279-3635	Environmental Science U.S., LLC (Sold by FMC Corporation)	Acetamiprid	Inside stables, livestock and poultry housing, loafing sheds, milk rooms, rabbit houses, research animal areas, animal transport vehicles, slaughterhouses, aviaries, and zoos
PT® Alpine® II Pressurized Fly Bait	7969-429	BASF Agricultural Solutions US LLC	Dinotefuran	Inside livestock and poultry housing
DeltaGard Fly Insecticide <i>Alternate brand names:</i> DeltaGard Fly Space Spray DeltaGard Space Spray DeltaGard ULV	432-1602	Environmental Science U.S., LLC	Deltamethrin	In and around livestock and poultry housing and ranges, animal quarters, and zoos

* This Section 3 product list was obtained from EPA's APPRIL database and is a small sample of the products registered for blow flies. The full list of products registered for controlling, trapping, and repelling blow flies may be found using EPA's APPRIL database: [https://ordspub.epa.gov/ords/pesticides/f?p=APPRIL_PUBLIC:2:::~: This list also does not include supplemental distributor products and the distributor product names. Screwworms are not specifically listed as target species on these labels; however, blow flies are listed.](https://ordspub.epa.gov/ords/pesticides/f?p=APPRIL_PUBLIC:2:::)

Products authorized for NWS in the US

- **EPA Registered**

- Catron IV

- **EPA Section 18 registrations**

- **Farm:**

- Tanidil

- **FDA Conditional Approvals**

- **Farm:**

- Dectomax
- Exzolt Cattle

- **Pet:**

- Credelio Quattro

- **FDA Emergency Use Authorization (EUA)**

- **Farm:**

- Negasunt
- F10 Antiseptic Wound Spray
Insecticide
- F10 Antiseptic Barrier Ointment with
Insecticide
- Ivermectin Liquid for Horses
(ivermectin oral solution)
- Ivomec
- CLiK Extra

- **Pet:**

- Credelio DOG, Credelio CAT
- NexGard, NexGard Combo (cats)
- Nitenpyram Tablets

FIFRA Section 2(ee) recommendations



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- A 2(ee) recommendation cannot be used to increase the dosage, concentration or frequency of an application, nor can it be used to decrease the preharvest (withdrawal) interval.
- As related to NWS, this includes:
 - Applying a pesticide against any target pest (e.g., NWS) not specified on the labeling, to a registered animal or site on the label unless the label only allows use for control of labeled pests.
 - Employing any method of application not prohibited by the labeling, unless the label states that the product may be applied only by the methods specified on the label.

EPA Perspectives

- EPA does not review 2(ee) recommendations
- A recommendation does not change the product registration
- Recommendations may be made by any “knowledgeable expert”
- Recommendations should acknowledge the invocation of FIFRA 2(ee)

State Perspectives

- Some states may have additional data requirements prior to allowing a 2(ee) use or may not allow 2(ee) uses in their jurisdictions under any circumstances
- Examples:
 - [Texas](#)
 - [California](#)
- Indiana?

FOR DISTRIBUTION AND USE ONLY WITHIN THE STATES OF

FIFRA Section 2(ee) Recommendation

This recommendation is made as permitted under FIFRA Section 2(ee) and has not been submitted to or accepted by the U.S. Environmental Protection Agency.

It is a violation of federal law to use this product in a manner inconsistent with its label.

This product bulletin must be in the possession of the user at the time of pesticide application.

All applicable directions, restrictions, Worker Protection Standard requirements, and precautions on the EPA registered label must be followed.

This product has not been tested specifically for efficacy against New World screwworm (NWS, adults or larvae); however, applied as part of an integrated pest management plan, it may have preventative action against adult NWS (flies).

No single therapy should be assumed to be 100% effective. Implementation of a multi-faceted program is considered critical.

APPLICATION DIRECTIONS

2(ee) Bulletins for Elanco Products

- Co-Ral Fly & Tick Spray
- Clean Up II
- CyLence Pour-On
- Permethrin CDS Pour-On
- Permethrin Dust
- Elector PSP
- Vapona
- CyLence Ultra (32 & 240ML)
- Permethrin II
- Co-Ral Flowable (restricted)

Elanco Resource Page

<https://farmanimal.elanco.com/us/resources-new-world-screwworm>

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Resources for New World Screwworm

What You Need to Know

What It Is

- New World screwworm (NWS) or *Cochliomyia hominivorax*: A parasitic fly endemic to Cuba, Haiti, the Dominican Republic, South America,

What Is the Life Cycle?

- Egg to Larva: Adults emerge from pupae and mate; females breed only once. The female lays eggs in open wounds or mucous membranes,

What It Does to Animals

- Feeding Habits: Larvae consume the living tissue and mucous membranes of warm-blooded animals.
- Impact: Infestation can cause severe

How It Spreads

- Flight Range: Fertile females can travel up to 12 miles throughout their lifespan (typically averaging less than 2 miles per day), actively



Questions?

