



Foreign Animal Disease Investigation Guide: New World Screwworm

This guide is for foreign animal disease (FAD) diagnosticians and other Federal and State officials. It is a supplement to the [Foreign Animal Disease Investigation \(FADI\) Manual](#) and [Veterinary Services Guidance 12001.5: Policy for Investigating a Foreign Animal Disease/Emerging Disease Incident](#).

In the Event of a Suspect New World Screwworm Myiasis Report

When a suspect case of New World screwworm (*Cochliomyia hominivorax*) myiasis is reported by an animal owner, veterinarian, or another Federal or State agency, immediately contact the State Animal Health Official (SAHO) or U.S. Department of Agriculture (USDA) Area Veterinarian in Charge (AVIC). The SAHO or AVIC will initiate an FAD investigation, if warranted. The National Veterinary Services Laboratories (NVSL) will communicate results to the SAHO.

Collect and Submit a Sample (FAD Diagnostician or Submitter)

Ensure that the sample is properly collected and packaged per the [FADI Manual](#). Call NVSL at (515) 337-7953 if you're unsure or have additional questions.

Special Equipment and Supplies

- ✓ Shatterproof vials with screw top or tight-fitting lids
- ✓ 70% ethanol or isopropyl alcohol

Collection

- ✓ Use forceps to collect multiple larvae of different sizes from different parts of the wound
- ✓ Place in the shatterproof vial with 70% ethanol or isopropyl alcohol (**not water or formalin**)
- ✓ Make sure the alcohol covers specimens completely
- ✓ Secure the screw top or tight-fitting lid
- ✓ If flies are present, collect adults in a dry vial
- ✓ If possible, take clear photos of larvae and wounds but **do not** delay submitting samples for the purpose of obtaining images

Submission

- ✓ Complete [VS Form 5-38](#) for diagnostic submission
- ✓ Put the FAD number in block 31
- ✓ Include case history information such as:
 - Type of host animal, if animal is alive or dead, the animal's location (GPS coordinates if possible)
 - A description of the wound (maggot presence, wound depth, odor) and whether maggots were pried from the lesion with forceps
 - Movement or travel history
- ✓ Follow standard packaging guidelines outlined in the [FADI Manual](#)
- ✓ Ship overnight to:
Sample Processing
USDA/NVSL/LRU
1920 Dayton Ave
Ames, IA 50010
- ✓ Email NVSL.Parasitology@usda.gov and your State AVIC when you ship the specimen to notify them that a suspect screwworm myiasis sample is in transit

Initiate an FAD Investigation (AVIC or SAHO)

- ✓ Assign and dispatch an FAD diagnostician to begin an NWS FAD investigation if the suspect case is at a premises.
- ✓ Assign an FAD referral control number and provide it to the FAD diagnostician or the submitter, if the suspect case is from a veterinary clinic, laboratory, or another Federal or State agency.
- ✓ Assign an FAD investigation coordinator to manage the investigation.
- ✓ Ensure the case history is transmitted to the FAD diagnostician or the FAD investigation coordinator.
- ✓ Consult with the FAD diagnostician or FAD investigation coordinator to ensure the diagnostic sample was properly taken and submitted using VS Form 5-38 to NVSL in Ames, IA.
- ✓ Determine diagnostic sample submission priority (see chart below).
- ✓ Follow FAD investigation protocols in the [FADI Manual](#).

Notifications and Communication

- ✓ AVIC, SAHO, epidemiologist, or FAD coordinator will email NVSL.parasitology@usda.gov with a cc: to Veterinary Services Field Operations (VS FiOps) District Director (see below) and VS.SP.NPIC.All@usda.gov. Be sure to include:
 - “Suspected Screwworm” in subject line
 - FAD referral control number
 - Tracking number
 - Estimated time of arrival
 - Investigation priority
 - Copy of the VS 5-38 form
- ✓ District Director upon notification will contact VS FiOps leadership.
- ✓ VS FiOps leadership will contact the VS Deputy Administrator.
- ✓ FAD coordinator will enter the FAD investigation into the Emergency Management Response System as soon as possible. The system will automatically generate a notification email to appropriate personnel.

High Suspicion	Intermediate Suspicion		Low Suspicion
PRIORITY 1	PRIORITY 2	PRIORITY A	PRIORITY 3
Testing conducted immediately upon arrival	Testing conducted immediately upon arrival	Testing prioritized due to impact on animal movements or commerce	Testing conducted in accession order
Rapid sample collection methods, may consider extraordinary transport methods	Rapid sample collection methods, transport via commercial carrier		Routine sample collection methods and transport
Host animal is alive or very recently deceased Maggots are boring into fresh tissue	Maggots were pried from lesion with forceps Dark tracheal tubes are present in maggots		Animal is dead (long dead carrion) or sample comes from a non-mammalian species

VS Unit	Contact Name or Office	Contact Number	Contact Email
NVSL	Gleeson Murphy	(515) 337-7953	NVSL.Parasitology@usda.gov
National Preparedness and Incident Coordination	Lindsey Holmstrom	(970) 294-2879	VS.SP.NPIC.All@usda.gov
Cattle Fever Tick Eradication Program	Don Herriott	(970) 556-8039	feverticks@usda.gov
FiOps District 1 Director	Kendra Stauffer	(352) 824-3449	Kendra.Stauffer@usda.gov
FiOps District 2 Director	Paul Kunde	(608) 444 1745	paul.w.kunde@usda.gov
FiOps District 3 Director	Paul Kunde (Acting)	(608) 444 1745	paul.w.kunde@usda.gov
FiOps District 4 Director	Kendra Stauffer (Acting)	(352) 824-3449	Kendra.Stauffer@usda.gov

Basic Identification Guide

Larvae



- ☑ Usually light cream/tan colored, cylindrical, tapered shape, blunt on one end rather than tapered on both as other species of maggots
- ☑ Usually found deep in the wound, feeding on living tissue



Female fly in wound with egg packet on margin of wound and larvae inside wound.

Adult Flies



- ☑ Resemble houseflies but are larger (approximately 8-10 mm)
- ☑ Have three dark vertical stripes on their back (thorax) from behind the head to the abdomen, with metallic blue-green body and reddish-orange eyes
- ☑ Lay eggs near open wounds or membranes



Dog with infested neck wound with horizontally and vertically oriented larvae (extreme case).

Health and Safety

- ☑ Wear appropriate personal protective equipment (PPE); refer to the [FADI Manual](#).
- ☑ Keep open wounds (including cuts and scratches) clean and covered.
- ☑ If you see or feel maggots (larvae) in or on a wound or other area of your body, contact your healthcare provider immediately and report the potential infestation to your supervisor.

Quarantine and Treat Animals

- ☑ Hold animal(s) in quarantine until you obtain an official parasite identification and start treatment.
- ☑ See [Standard Operating Procedure for Possible Detections of NWS in Animals](#) for treatment and disinfection information.

Resources

[Disease Response Strategy NWS Myiasis](#)
[EMRS Quick Reference Guide to NWS](#)
[FAD Investigations](#) (authorized users only)

Parasite Submission Form VS 5-38
(QR code)

