



United States Department of Agriculture

Animal and Plant Health
Inspection Service

Sample Collection

Andy Fabian
Diagnostic Services Section
Foreign Animal Disease Diagnostic
Laboratory



Best practices in sample collection and submission

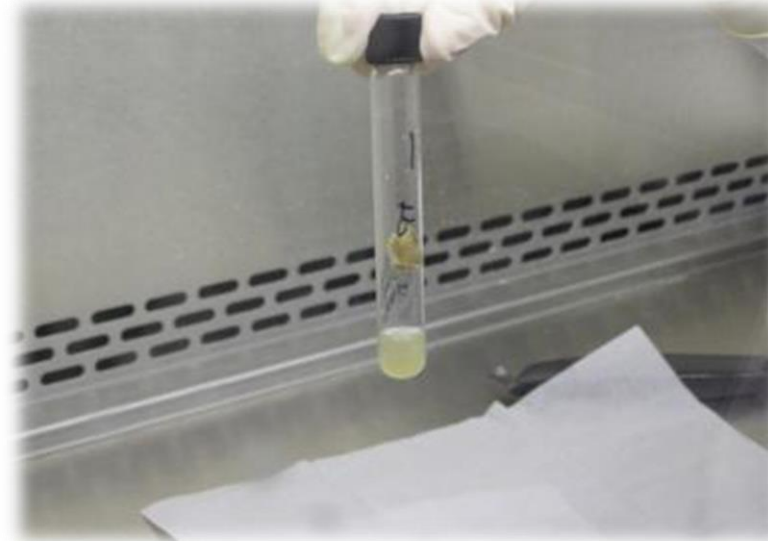
Take-home Message

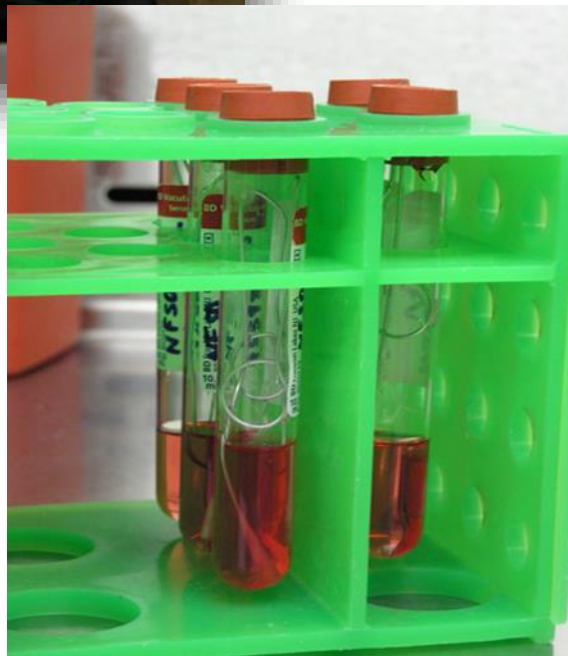
1. If you have questions regarding sample collection prior to investigation, call us!
2. Periodically review FADD kit supplies
 - Expiration dates
 - Containers
3. Key supplies:
 - Synthetic (Dacron) swabs
 - 3 ml BHI media (avian)
 - 3 ml TBTB media (vesicular swabs)
 - 5 ml TBTB media tissue/probang
 - Ice packs
 - Formalin
 - Shipping coolers

Best practices in sample collection and submission

Take-home Message

4. Fresh/Wet tissues
 - Separate organs
 - Histopath (1:10 – tissue:formalin)
5. Complete 10-4 form
6. Sample IDs
 - Matching ID on 10-4 form
7. EMRS
8. Collect 2 sets of samples – **DON'T SPLIT the SAMPLES**
 - NVSL (Ames) / FADDL
 - NAHLN (further testing domestics rule outs)
9. Distinguish CSF surveillance vs swine FAD





- Bovine viral diarrhea
- Bovine ephemeral fever
- Bovine herpes mammillitis
- Brucellosis
- Contagious bovine pleuropneumonia
- Infectious bovine rhinotracheitis/infectious pustular vulvovaginitis
- Lumpy skin disease

Cattle



- Contagious agalactia
- Contagious caprine pleuropneumonia
- Peste des petits ruminants
- Sheep pox and goat pox

Sheep & Goat



- Rabbit hemorrhagic disease

Lagomorph



- **African swine fever**
- **Classical swine fever**
- **Swine vesicular disease**
- Teschens

Swine



- African horse sickness
- Contagious equine metritis

Equine



- Akabane
- Schmallenberg
- Bluetongue
- Epizootic haemorrhagic disease
- **Foot and mouth disease**
- Heartwater
- Japanese encephalitis
- Malignant Catarrhal Fever
- Parapox
- Rift Valley fever
- Rinderpest
- Trypanosomiasis
- **Vesicular stomatitis**
- Vesicular Exanthema

Multiple Species





FY 2014 FAD Investigations & Surveillance

Priority Level	Accessions	Final Diagnosis						FAD ruled out / Domestic Disease Diagnosis	FAD ruled out / Dx Undetermined
		SVV	EHD	BPS	MCF	VSV	BT		
1/A	2	-	-	1	1	-	-	2	0
2	53	1	2	13	1	9	3	29	24
3	125	1	27	23	3	8	2	64	61
Total*	180	2	29	37	5	17	5	95	85

* Does not include testing of imports (safety tests) and reference submissions

CSF Surveillance

Accessions

2236

Samples

7661



FY 2015 FAD Investigations & Surveillance

Priority Level	Accessions	Final Diagnosis						Domestic Disease Diagnosis	FAD ruled out / Dx Undetermined
		SVV	EHD	PPox	MCF	VSV	BT		
1	2	1	-	-	-	-	-	1	1
A	4	2	-	1	-	1	-	4	-
2	118	20	4	4	1	36	-	65	53
3	152	13	5	9	2	22	-	51	101
Total	276	36	9	14	3	59	-	121	155 (23 of which were swine vesicular cases)

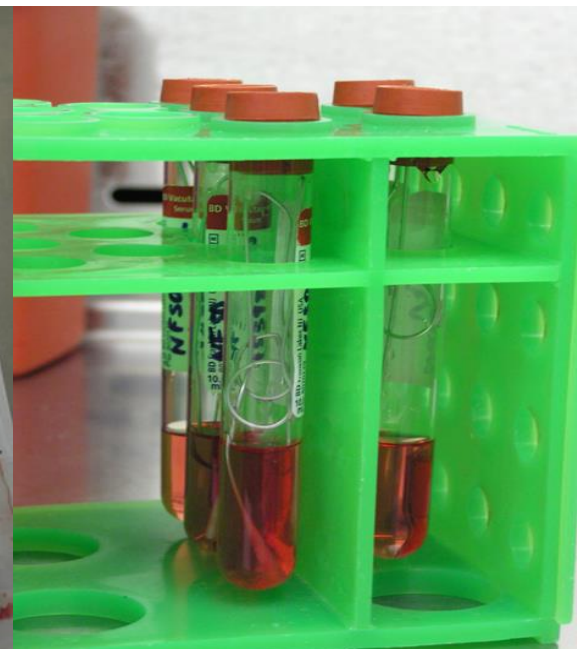
CSF Surveillance

Accessions	Samples	Assays
1892	6436	6449

The Dx Laboratory

- Key factors impacting your results:
 - Sample type and quality (right sample for assay)
 - Performance characteristic of assay (validation process-se/sp)
 - Laboratory performance (QA/QC, tech staff)

ISO Accreditation



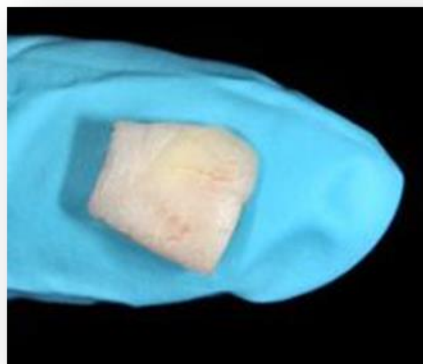
Diagnostic Specimens

- **Swabs**
 - Dacron
 - 3 ml transport media (pH 7.0)
 - Brain heart infusion (BHI)
 - Tris-buffered tryptose broth (TBTB)



Diagnostic Specimens

- Fresh tissues
 - Quarter sized pieces in whirlpak bags
or
 - Tissue covered in media (BHI or TBTB)
- Formalin tissues
 - Tissue in buffered-formalin (1:10)
- Probang
 - Esophageal-pharyngeal fluid in TBTB media



Diagnostic Specimens

Foot-and-mouth disease			
Bovine Swine Ovine Caprine Camelids Cervid (including cloven-hoofed zoo animals and wildlife)	Serum	Red top tube (10 ml)	NVSL FADDL
	Whole blood	Green top tube (10 ml) Purple top tube (10 ml)	
	Vesicular tissue (vesicular epithelium - as large as practical)	Whirl-pak® bags with no media or Tube with 3 ml TBTB	
	Vesicular fluid	Sterile tube or red top tube (undiluted) or TBTB (50:50)	
	Dacron® swabs: lesion, nasal, oral	TBTB (3 ml)	
	Esophageal-pharyngeal fluid (collected by probang for identification of FMD-seropositive carriers)	TBTB (50:50)	
	Crusts/scabs	Tube or Whirl-pak® bags, no media	
	Fresh tissue (esp. lymph node)	Separate Whirl-pak® bags	
	Set of tissues	Formalin (10:1)	

Diagnostic Specimens

Classical swine fever			
Swine	Serum	Red top tube (10 ml)	NVSL FADDL
	Whole blood	Green top tube (10 ml) Purple top tube (10 ml)	
	Dacron® swab: nasal	TBTB (3 ml)	
	Tonsil scraping (with teaspoon)	TBTB (3 ml)	
	Fresh tissue: tonsil, mandibular LN, mesenteric LN, spleen, kidney, distal ileum	Separate Whirl-pak® bag per tissue type	
	Set of tissues including brain	Formalin (10:1)	

FADD Kit

- Sterile Whirl-pak bags for tissue collection
- Swabs (**Dacron**)
- Broth for swab- 2-3ml Tris buffered tryptose broth (TBTB) or Brain Heart Infusion (BHI) media
- Probang cup(s) and Tris buffered tryptose broth (TBTB) tube (1:1)
- Sterile instruments (scissors, forceps, scalpel)





Submission Form: VS Form 10-4

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0579-0090, 0101, and 0212. The time required to complete this information collection is estimated to average .5 hours per response for 0579-0090, 1 hour per response for 0579-0101, and .333 hours per response for 0579-0212, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

OMB Approved
0579-0090, 0579-0101,
and 0579-0212

UNITED STATES DEPARTMENT OF AGRICULTURE ANIMAL AND PLANT HEALTH INSPECTION SERVICE NATIONAL VETERINARY SERVICES LABORATORIES P.O. BOX 844, 1920 DAYTON AVENUE, AMES, IA 60010 (515) 937-7614	SPECIMEN SUBMISSION	PAGE OF
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INSTRUCTIONS: Use a separate form for each species and each owner/broker. See *Instructions for Completing VS Form 10-4* for definitions.

1. SUBMITTER NAME (including Business Name)		2. NVSL SUBMITTER ID	3. NAME OF OWNER <input type="checkbox"/> Check if wildlife (no owner)
EMAIL ADDRESS		OWNER CITY	STATE/COUNTRY
PHONE NO.	FAX NO.	4. LOCATION OF ANIMALS	
MAILING ADDRESS (Street, City, State, ZIP Code)		PREMISES ID	
		COUNTY	STATE/COUNTRY

6. PAYMENT METHOD		
<input type="checkbox"/> USER FEE ACCOUNT NO.	<input type="checkbox"/> CHECK/MONEY ORDER (Enclosed, payable to USDA in US dollars)	<input type="checkbox"/> CREDIT CARD Number: Exp. Date:

6. HERD/FLOCK SIZE	9. EXAMINATIONS REQUESTED	10. COLLECTED BY
7. NO. IN HERD/FLOCK AFFECTED		11. DATE COLLECTED
8. NO. IN HERD/FLOCK DEAD		12. AUTHORIZED BY

13. PURPOSE OF SUBMISSION (See instructions for definitions)		14. COUNTRY OF ORIGIN/DESTINATION
<input type="checkbox"/> Interstate Movement	<input type="checkbox"/> Import <input type="checkbox"/> TB <input type="checkbox"/> Reagent Evaluation	15. REFERRAL NUMBER
<input type="checkbox"/> Export	<input type="checkbox"/> FAD/EP Diagnostic <input type="checkbox"/> General Diagnostic <input type="checkbox"/> NVSL Intralab	
<input type="checkbox"/> Pre-import	<input type="checkbox"/> Surveillance <input type="checkbox"/> Developmental Research	

16. PRESERVATION
<input type="checkbox"/> None <input type="checkbox"/> Ice Pack <input type="checkbox"/> Dry Ice <input type="checkbox"/> Formalin <input type="checkbox"/> Borax <input type="checkbox"/> Alcohol <input type="checkbox"/> Other (Specify)

17. SPECIMENS SUBMITTED (9X applicable item(s))	18. TOTAL NUMBER OF SPECIMENS SUBMITTED
<input type="checkbox"/> Blood <input type="checkbox"/> Feces <input type="checkbox"/> Parasite <input type="checkbox"/> Serum <input type="checkbox"/> Tissue (specify) <input type="checkbox"/> Whole Animal <input type="checkbox"/> Other (specify)	
<input type="checkbox"/> Culture <input type="checkbox"/> Feed <input type="checkbox"/> Plant <input type="checkbox"/> Soil <input type="checkbox"/> Urine <input type="checkbox"/> Fetus	
<input type="checkbox"/> Extract <input type="checkbox"/> Milk <input type="checkbox"/> Semen <input type="checkbox"/> Swab (specify) <input type="checkbox"/> Water <input type="checkbox"/> DNA/RNA	

19. SPECIES OR SOURCE (9X ONLY one)	20. NUMBER OF ANIMALS SAMPLED
<input type="checkbox"/> Cattle <input type="checkbox"/> Goat <input type="checkbox"/> Chicken <input type="checkbox"/> Bison <input type="checkbox"/> Fish <input type="checkbox"/> Other (specify)	
<input type="checkbox"/> Swine <input type="checkbox"/> Horse <input type="checkbox"/> Turkey <input type="checkbox"/> Deer (specify) <input type="checkbox"/> Environment	
<input type="checkbox"/> Sheep <input type="checkbox"/> Donkey <input type="checkbox"/> Other bird (specify) <input type="checkbox"/> Elk <input type="checkbox"/> Reagent	

21. IDENTIFICATION (See instructions *250 samples per form)					IDENTIFICATION				
Sample ID	Animal ID	Breed	Age	Sex	Sample ID	Animal ID	Breed	Age	Sex

22. ADDITIONAL DATA (History, clinical signs, post mortem findings, remarks, tentative diagnosis, special instructions. Use additional sheets if necessary).

23. SIGNATURE OF SUBMITTER AND DATE				NVSL USE ONLY			
X							
NVSL USE ONLY							
CONDITION	PRIORITY	DISTRIBUTION	RECEIVED BY				



Priority Designations

1	A	2	3
HIGHLY LIKELY IS A FAD/ED	“ANIMAL IN COMMERCE” BEING HELD PENDING TEST RESULTS	POSSIBLE FAD/ED	UNLIKELY FAD/ED
<ul style="list-style-type: none">✓ Notify Laboratory prior to shipping samples✓ Hand carry/ counter to counter/ priority overnight✓ Samples will be tested upon arrival	<ul style="list-style-type: none">✓ Rapid test results are in the best interest of the producer or agency✓ These include cases that may not be “highly likely” to be a FAD/ED	<ul style="list-style-type: none">✓ Samples tested immediately if they arrive during business hours✓ Samples received after hours will be tested first thing the following morning	<ul style="list-style-type: none">✓ Epidemiological factors and findings support a diagnosis of an endemic disease✓ Samples will be processed according to the accession order as received



FedEx Overnight

FedEx US Airbill
Express

FedEx Tracking Number **8986 9057 0473**

Form ID No. **0200** Sender's Copy

1 From Please print and press hard.

Date _____

C Sender's FedEx Account Number **SENDER'S FEDEX ACCOUNT NUMBER ONLY**

Sender's Name _____ Phone (____) _____

Company _____

Address _____ Dept./Floor/Box/Room _____

City _____ State _____ ZIP _____

D Your Internal Billing Reference _____ OPTIONAL

3 To

Recipient's Name **FAD Priority 1,2,3,A** Phone (**631** | **323-3256**)

A Company **USDA/APHIS/FADDL**

E HOLD Weekday
FedEx sender address
REQUIRED only available for
FedEx First Overnight

B Address **Orient Point Warehouse, 40550 Rte 25**
We cannot deliver to PO boxes or PO ZIP codes. Dept./Floor/Box/Room _____

HOLD Saturday
FedEx sender address
REQUIRED only available for
FedEx Priority Overnight and
FedEx 2Day Express Saver.

Address **579 Edwards Ave, Calverton, NY 11933**
Use this line for the FEDEX location address or for continuation of your shipping address.

City **Orient Point** State **NY** ZIP **11957**

F Express Package Service *To most locations.
NOTE: Service order has changed. Please select carefully. Packages up to 150 lbs.
No packages over 150 lbs. use the new
FedEx Express Freight US Airbill.

Next Business Day

FedEx First Overnight
Earliest next business morning. Delivery to select locations. FedEx shipments will be delivered on Mondays unless SAT/USDA/ delivers is selected.

FedEx Priority Overnight
Next business morning. *Tuesday shipments will be delivered on Monday unless SAT/USDA/ Delivery is selected.

FedEx Standard Overnight
Next business afternoon. *Secures Delivery NOT available.

2 or 3 Business Days

NEW! FedEx 2Day A.M.
Second business morning. *Secondary Delivery NOT available.

FedEx 2Day
Second business afternoon. *Thursday shipments will be delivered on Monday unless SAT/USDA/ Delivery is selected.

FedEx Express Saver
Third business day. *Secures Delivery NOT available.

5 Packaging *Declared value limit \$500

FedEx Envelope* FedEx Pak* FedEx Box FedEx Tube Other

G Special Handling and Delivery Signature Options

SATURDAY Delivery
NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver.

No Signature Required
Package may be left without obtaining a signature for delivery.

Direct Signature
Someone at recipient's address may sign for delivery. See options.

Indirect Signature
If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. See options.

Does this shipment contain dangerous goods?
See box must be checked.

No Yes (by per attached Shipper's Declaration)

This Shipper's Declaration is required.

Dry Ice (by box, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100)

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or alternate a FedEx Express Saver Box. Cargo Aircraft Only

7 Payment \$/£ Net _____ Enter FedEx Acct. No. or Credit Card No. below.

Sender (Send this invoice to all bills) Recipient Third Party Credit Card Cash/Check

Bill/Account No. _____ Date _____
Check Card No. _____

Total Packages **1** Total Weight **10** lbs. 0 oz. Total Declared Value! _____

The liability to the shipper/consignee unless you declare a higher value. See back for details. By using this Airbill you agree to the service conditions on the back unless AGED under the current FedEx Service Guide including terms that limit our liability.

612

fedex.com 1.800.fedFedEx 1.800.463.3339

RETAIN THIS COPY FOR YOUR RECORDS.

SAMPLE



FedEx Overnight Saturday Delivery

FedEx *US Airbill*
Express

FedEx Tracking Number: **8986 9057 0473**

1 From Please print and press hard.

Date _____

Sender's Name _____ Phone (____) _____

Company _____

Address _____

City _____ State _____ ZIP _____

2 Your Internal Billing Reference (OPTIONAL)
First 28 characters will appear on invoice.

3 To

Recipient's Name: **FAD Priority 1,2,3,A** Phone (**631**) **323-3256**

Company: **USDA/APHIS/FADDL**

Address: **Orient Point Warehouse, 40550 Rte 25**
City: **Orient Point** State: **NY** ZIP: **11957**

Form No. **0200** Sender's Copy

F Express Package Service *To most locations. Packages up to 150 lbs.
NOTE: Service order has changed. Please select carefully. No packages over 70 lbs. use the new FedEx Express Freight US Airbill.

Next Business Day	2 or 3 Business Days
<input type="checkbox"/> FedEx First Overnight Earliest next-business morning delivery to select locations. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.	<input type="checkbox"/> NEW FedEx 2Day A.M. Second business morning.* Secondary Delivery NOT available.
<input checked="" type="checkbox"/> FedEx Priority Overnight Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.	<input type="checkbox"/> FedEx 2Day Second business afternoon.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
<input type="checkbox"/> FedEx Standard Overnight Second business day. Secondary Delivery NOT available.	<input type="checkbox"/> FedEx Express Saver Second business day. Secondary Delivery NOT available.

5 Packaging *Inferred value limit \$500

FedEx Envelope* FedEx Pak* FedEx Box FedEx Tube Other

G Special Handling and Delivery Signature Options

SATURDAY Delivery
NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver.

No Signature Required
Package may be left without obtaining a signature for delivery.

Direct Signature
Someone at recipient's address may sign for delivery. No options.

Indirect Signature
If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. No options.

Does this shipment contain dangerous goods? (See box must be checked.)

No Yes (By per attached Shipper's Declaration) Yes (Shipper's Declaration not required) Dry Ice (Dry Ice X, 6% total _____ kg)

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or plastic in a FedEx Express Box/Box.

Cargo Aircraft Only

7 Payment Bill to: _____ Enter FedEx Acct. No. or Credit Card No. below.

Sender (Send Bill to Invoice I will bill) Recipient Third Party Credit Card Cash/Check

Total Packages: **1** Total Weight: **10** lbs. Total Declared Value†: **612**

SAMPLE

fedex.com 1.800.GoFedEx 1.800.463.3339

RETAIN THIS COPY FOR YOUR RECORDS.

*Our liability is limited to \$100 unless you declare a higher value. See back for details. By using this Airbill you agree to the service conditions on the back of this Airbill under the current FedEx Service Guide, including those that limit our liability.



FedEx. US Airbill
Express

FedEx Tracking Number **1234 5678 901C**

fedex.com 1800.GoFedEx 1800.463.3339

1 From Please print and print hard

Date _____ Sender's FedEx Account Number _____ NUMBER ONLY

Sender's Name _____ Phone _____

Company _____

Address _____ Dept./Floor/Suite/Room

City _____ State _____ ZIP _____

2 Your Internal Billing Reference First 28 characters will appear on invoice. OPTIONAL

3 To

Recipient's Name _____ Phone **631-323-3256**

Company **USDA/APHIS/FADDL**

Recipient's Address **Orient Point Warehouse, 40550 Rte 25** Dept./Floor/Suite/Room

Address **579 Edwards Ave., Calverton, NY 11933**

To request a package be held at a specific FedEx location, print FedEx address here.

City **Orient Point** State **NY** ZIP **11957**



Ship and track packages at fedex.com
Simplify your shipping. Manage your account. Access all the tools you need.



Contact Information

NVSL FADDL

- Monday – Friday, 8:30am-4:15pm EST
 - Main Office: 631-323-3256
- After Hours and Weekends
 - Diagnostic Services Section (DSS) Head:
 - 631-375-5314
 - Acting DSS Head:
 - 631-332-6814
 - Courier:
 - 631-377-9877
 - National Center for Animal Health Dispatch:
 - 515-337-7200 (if unable to reach someone listed above)

NVSL Ames

- Monday – Friday, 8:00am-4:30pm CST
 - NVSL Main Line: 515-337-7266
 - NVSL Director:
 - 515-337-7301
 - Diagnostic Virology:
 - 515-337-7551
 - Diagnostic Pathobiology:
 - 515-337-7521
 - Diagnostic Bacteriology:
 - 515-337-7526
- After Hours and Weekends
 - National Center for Animal Health Dispatch:
 - 515-337-7200 (if unable to reach someone listed above)



NATIONAL VETERINARY SERVICES LABORATORIES CONTACT INFORMATION

Updated April 2013

NVSL Ames-Main Line (515) 337-7266
(answered 24/7)

NVSL FADDL-Main Line (631) 323-3256

FADDL After Hours Emergency Contacts
(631) 375-5314 or (631) 332-6814

Director's Office (515) 337-7301

NAHLN Program Office (515) 337-7731

Case Coordinator (515) 337-7514

User Fees (515) 337-6200

USDA – APHIS – NVSL
Attn: Sample Processing Department
1920 Dayton Ave.
Ames, IA 50010
Ph: (515) 337-7514

USDA – APHIS – NVSL
Attn: Foreign Animal Disease Diagnostic Laboratory
40550 Route 25
Orient, NY 11957
Ph: (631) 323-3256

Our regular business hours are 8:00 a.m. - 4:30 p.m. CST for Ames laboratories and 8:30 a.m. - 4:15 p.m. EST for the Foreign Animal Disease Diagnostic Laboratory (FADDL). Laboratory main lines are answered during regular business hours.

DIAGNOSTIC BACTERIOLOGY LABORATORY

Laboratory Main Line: (515) 337-7568

(515) 337-7565 General Bacteriology Contagious Equine Metritis Leptospira Salmonella	(515) 337-7563 Brucella (serology) Piropasmosis Stat-Pak: Tuberculosis serology
(515) 337-7388 Brucella (culture) Johne's Mycobacterium Tuberculosis (culture)	(515) 337-7181 Brucella Reagents Johne's Reagents Tuberculosis Reagents

FOREIGN ANIMAL DISEASE DIAGNOSTIC LABORATORY

All calls to Laboratory Main Line: (631) 323-3256

African Swine Fever
Bluetongue /Epizootic Hemorrhagic Disease **
Classical Swine Fever
Foot and Mouth Disease and other vesicular diseases of livestock
Rabbit Hemorrhagic Disease

**** If suspect Foot and Mouth Disease, samples must go to FADDL. Please contact the laboratory at (631) 323-3256 prior to shipment.**

DIAGNOSTIC VIROLOGY LABORATORY

All calls to Laboratory Main Line: (515) 337-7551
(Testing + Reagents)

Aquatic animal diseases
Avian influenza
Bluetongue /Epizootic Hemorrhagic Disease **
Equine Arboviral Encephalitis
(Eastern, Western Venezuelan equine encephalomyelitis & West Nile)
Equine Infectious Anemia (EIA)
Equine Rhinopneumonitis (equine herpesvirus)
Equine Viral Arteritis
Malignant catarrhal fever
Newcastle Disease
Porcine Reproductive and Respiratory Syndrome
Pseudorabies
Swine influenza
Vesicular Stomatitis

PATHOBIOLOGY LABORATORY

Laboratory Main Line: (515) 337-7526

(515) 337-7920 Bovine Spongiform Encephalopathy Chronic Wasting Disease Scrapie	(515) 337-7065 Chemistry (Pesticides) Fraudulent Blood
(515) 337-7526 Parasitology/ Entomology	(515) 337-7912 Tuberculosis (histopathology)