

VERMONT AGENCY OF AGRICULTURE, FOOD & MARKETS
FOOD SAFETY CONSUMER PROTECTION DIVISION
Meat Inspection Service
MONTPELIER, VT
Anson Tebbetts, Secretary



MIS DIRECTIVE

10000

For use
beginning
10/01/2019

Vermont Chronic Wasting Disease (CWD) Testing

CWD is a transmissible spongiform encephalopathy (TSE) of captive and wild cervid animals in the United States and Canada. State and federal regulations currently require CWD testing of all cervid mortalities that are 12 months or older, except for fallow deer. This document outlines the policy of the Vermont Agency of Agriculture, Food and Markets (VAAFM) pertaining to CWD testing of captive cervids at slaughter in Vermont.

The Food and Drug Administration (FDA) considers cervid animals that test positive for CWD at post-mortem to be adulterated and not fit for human food under the Federal Food, Drug and Cosmetic Act (FFDCA). Therefore, when a cervid animal is tested for CWD and slaughtered under voluntary inspection services, VAAFM cannot determine the wholesomeness of the carcass and parts without the CWD test results.

IPP are to retain, and not to apply or allow the establishment to apply the mark of inspection to carcasses of cervid animals, or parts thereof, until after "not detected" test results are received. IPP are to allow establishments to hold or further process (e.g., bone) these carcasses under inspection pending test results provided that the affected carcass or parts remain retained. IPP are to observe how the establishment addresses cross contamination during further processing of these products and ensure the carcass and parts are handled in a sanitary manner.

Tissues to take: Obex and Medial Retropharyngeal Lymph Nodes

Getting prepared to take the samples:

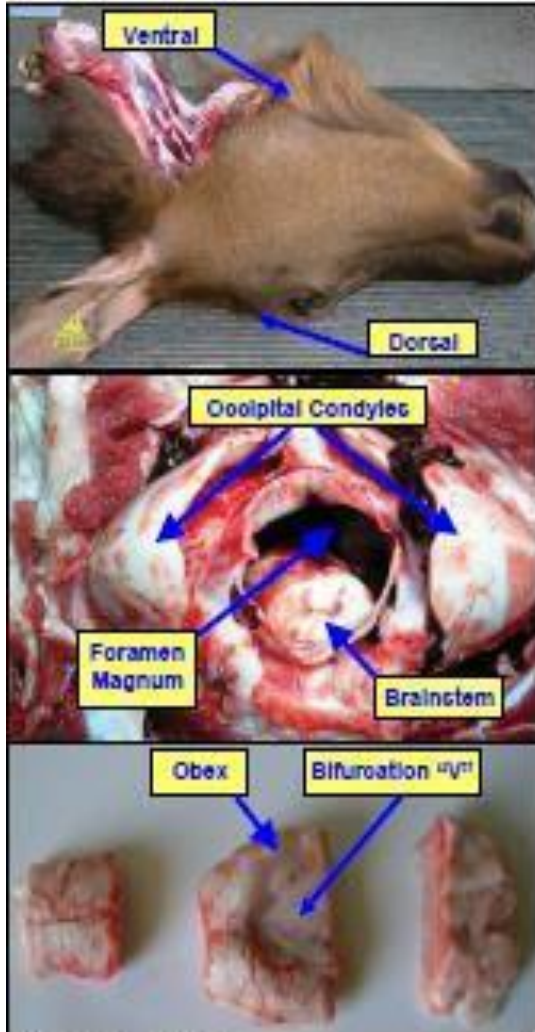
1. Organize your formalin containers, retain tags and utensils (knives or spoon/forceps).
The various copies of the retain tags are for the carcasses, to keep with the tissues you are taking identified, and to put into the lug to retain the offal.
2. Verify that the producer obtained a movement permit for the cervids coming to slaughter. AH issues the movement permit and forwards a copy via email to the producer and to Meat Inspection (Dr. McNamara, Carrie Roberts, and Brault IPP). The permit is issued for the week of the slaughter date.



Retain tags wrapped and going into lug



Example of one animal sampled: Retain Tag, Farm Ear Tag, tissues



Photos courtesy: Indiana ICAH



Washing the head with the hose prior to sampling



Removing all ear tags

Sampling Procedure for Obex:

1. The head should be presented to you on the head rack by slaughter establishment personnel, upside down (ventral side up). You may need to rinse the blood off to see the tissues. Remove the RFID and farm ear tags.
 2. Locate the occipital condyles and foramen magnum (FM). Locate the brainstem inside the FM. Trim the dura mater around the brain-stem and cut the attached cranial nerve trunks, using the sharp spoon or knife.
 3. Gently lift the brainstem with forceps and insert the spoon/knife into the **dorsal** aspect of the FM between the brainstem and **dorsal** calvarium.
 4. Advance the spoon 2-3 inches rostrally (forward towards the nose) until it contacts bone to sever the cerebellum.
 5. Re-position the spoon in the **ventral** aspect of FM between the brainstem and the **ventral** calvarium. Advance the spoon until it contacts bone and transversely sever the brainstem.
 6. Remove the brainstem using the spoon and forceps. Examine to ensure the proper obex sample (Bifurcation or “V”) is preserved.
 7. Further trim the brainstem section by making a transverse cut 3/4 inch in front of the “V” shape bifurcation and an equal distance behind the bifurcation for good fixation.
- For IHC testing** – place the trimmed obex and brainstem pieces in 10% buffered formalin jar (10:1 ratio of formalin to tissue sample).

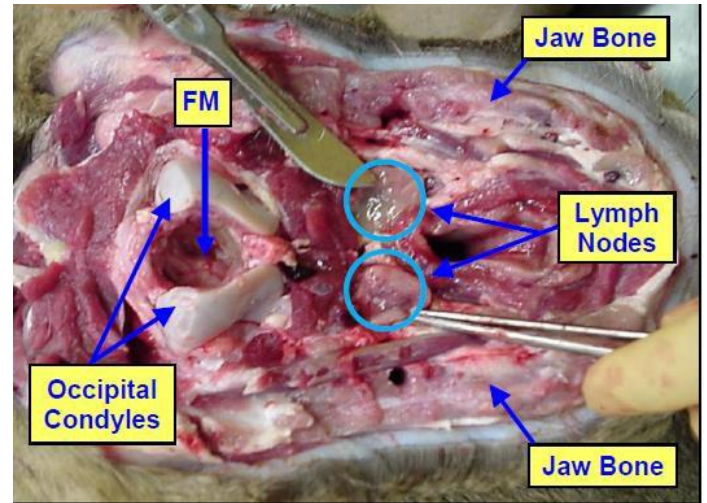


RFID button and bangle

Sampling Procedure for Medial Retropharyngeal Lymph Node:

1. With the head positioned upside down, locate the esophagus and trachea below the foramen magnum (FM).
2. Lift the trachea and dissect muscles forward of the foramen magnum (rostrally). Locate the left and right medial Retropharyngeal Lymph Nodes (MRPLN) half-way between each corner of the jaw bone and the FM, caudal to the nasopharynx, and deep to the salivary gland. LN consistency is much firmer and rounder than the surrounding tissue.
3. Remove each left and right medial RPLN and longitudinally incise each LN to confirm lymphoid tissue.

For IHC testing – place the medial RPLNs in the same formalin jar with the obex.



Some added pictures below:



Using knife to remove brainstem



Exposing Medial Retropharyngeal Lymph nodes



Removing Medial Retropharyngeal LN

Submission of Samples

Laboratory Submission Form:

1. You have the option of printing and filling out the form by hand or completing the form electronically and printing.
2. Refer to example form at the end of this document to determine the fields to fill out. The fields highlighted in the example need to be completed. Please note that there are some parts of the form that do not need to be filled out and there is no specific check-box for a CWD request. It is for that reason that the “CWD IHC ON RETROPHARYNGEAL LYMPH NODE(S) AND OBEX REQUESTED” request can just be put in the history section of the form. If only one animal sample is submitted, then there is no need to include the continuation form; if multiple animal samples are submitted, then the continuation form can be used as needed.
3. For the animal ID, **complete tag numbers for all of the tags in the animal’s ears** should be recorded on the form (see example in attachments). These can include RFID tags, farm tags, etc.
4. Fax the form to the Animal Health Admin Asst. or to the Meat Inspection Admin Asst. (802-828-5983). They will create a UPS Label and fax it to Brault’s, and also will schedule the UPS pickup for the following day. You may also want to make a copy of the form for your records.
5. Place the laboratory submission form into a plastic bag to protect it from moisture.

Packaging it up:

1. Ensure the formalin containers are closed tightly.
2. Write the ear tag number of each animal on the top of the formalin lid containing its tissues. On the bottle label, document the date of collection, species, the VT retain tag #, the herd owner, and that the bottle contains Obex and LN.
3. Place the formalin containers into a Ziploc bag with absorbent material (ie paper towel) and tightly secure the bag. Place this bag into a second bag and tightly secure it.
4. Place the small square VT sample seal on the outside of the bag(s) containing the formalin jars, and one on the bottom of the laboratory submission form in the space for “History”.
5. Place the bagged containers and the bagged laboratory submission form into the shipping container and tape the box shut. Apply the large square VT box seal with your signature and date to the first set of flaps. Then close the outer set of flaps of the shipping container and tape closed.
6. Apply the UPS label to the shipping container.
7. Verify with the office that UPS is set to pick up the sample, and place the sample where UPS can pick it up from the plant.

Sample results:

1. Keep the ear tags in a bag until results are received.
2. The Animal Health Office will receive an email of the results from the lab. It takes between 5-10 business days for testing results.
3. The Animal Health Office will notify us of the results via email with an attached copy of the lab results.

Submission Template



GENERAL SUBMISSION FORM
 KANSAS STATE VETERINARY DIAGNOSTIC LABORATORY
 Mosier D-117, 1800 Denison Avenue, Manhattan, KS 66506-5601
 Phone (785)-532-5650; Toll Free (866)-512-5650; Fax (785) 532-4481;
 Web www.ksvdl.org

KSVDL Use Only

OFFICE USE ONLY

Panel _____ Case Coordinator(s) _____

Acct# _____ Internal Ref# _____

Veterinarian: Dr. Krith Haas

Clinic: VT Agency of Agriculture

Address: 118 State Street

City: Montpelier **State:** VT **Zip:** 05602

Phone: 802-828-2421 **Cell:** 802-822-7496

Fax: 802-828-5033

Results via: Fax Email ag.animalhealth@vermont.gov

Owner/Producer, Producer Name Has _____

Business/Premise ID: _____

Address: _____

City: _____ **State:** _____ **Zip:** _____

Phone: _____

OK for results to go to owner

Third Party Billing: Name _____ Address _____

Third Party Results: Name _____ Address _____

ANIMAL IDENTIFICATION If >1 animal, continue on Multiple Animal Submission Form, which can be found at www.ksvdl.org

Animal Identification <u>Fill in</u>	Species <u>Fill in</u>	Breed <u>Fill in</u>	Sex <u>Fill in</u>	Age	Collection Date
Official ID of first animal	Cervid	Sex: <input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Neutered/Spayed		Fill in	Fill in

SPECIMEN(S) SUBMITTED:

Tissue(s) Obex and Retropharyngeal Lymph Node

Whole Blood Fetus Swab (specify) _____

Whole Body Milk Culture plate / isolate _____

Biopsy Urine Feed / Water _____

Serum Feces Semen _____

Other (specify) _____

Necropsy: Euthanized? Yes No

Necropsy Only Necropsy and tests requested on next page Fixed tissue(s) from necropsy

Necropsy and Histopath Necropsy and tests at pathologist's election

Surgical Biopsy

of biopsies of masses: _____ (Additional charges after 3) Incisional Excisional

Size: _____ x _____ x _____ cm Location: _____

Color, texture, shape and presence of capsule: _____ Growth pattern (expansion, invasion, reduction, etc.): _____

Duration: _____ Rate of Growth: _____

Dorsal Ventral Are margins submitted? Yes No Unknown History of recurrence: _____

HISTORY (include clinical signs, differential diagnoses, antibiotic use, vaccine history, duration, number of animals affected, etc.) If more space is needed, please continue on and attach an additional page.

CWD - IHC ON RETROPHARYNGEAL LYMPH NODE(S) AND OBEX REQUESTED

Testing at lab discretion if no tests requested on following page.

Date Submitted to KSVDL: _____

****Select specific tests on following page****

This submission form is a legal and binding contract between KSVDL and the submitting entity. Specimens submitted become the property of the KSVDL. All fees, to include collection fees, are the responsibility of the submitting entity and all entities must adhere to the billing policy. Payment to be made by check (payable to KSVDL), credit card, money order, or electronic bank transfer. A 1.5% discount change will be issued on all payments over 10 days. Rev 10/1/2017 gdh

Not all available tests are listed below. For a complete list of tests, please refer to the Fee Schedule, available online at www.ksvdl.org or Toll-Free at 866-512-5658

IKSVDL Use Only

KEY:

AGG = latex agglutination
 AGID = agar gel immunodiffusion
 APP = *Acidobacillus pleuropneumoniae*
 cELISA = competitive enzyme-linked immunosorbent assay
 ELISA = enzyme-linked immunosorbent assay
 IFA = indirect fluorescent antibody
 IgG = immunoglobulin G
 IgM = immunoglobulin M

MAP = *Mycobacterium avium* subsp. *paratuberculosis*
 MAT = microscopic agglutination test
 PAG = plate agglutination
 PCR = polymerase chain reaction
 PRRS = porcine reproductive & respiratory syndrome
 RAPD = random amplification of polymorphic DNA
 SN = serum neutralization
 TLC = Thin Layer Chromatography

BACTERIOLOGY / MYCOLOGY		
Has the animal been given antibiotics within the last 2 weeks? <input type="checkbox"/> Yes <input type="checkbox"/> No		
<input type="checkbox"/> Aerobic Culture <input type="checkbox"/> Susceptibility <small>infect: <i>Bacteroides</i> spp. & <i>Capnocytophaga</i></small> <input type="checkbox"/> Anaplasmosis Culture / IFA Susceptibility <input type="checkbox"/> Anaplasmosis (PCR) <input type="checkbox"/> APP Serotyping (PAG) <input type="checkbox"/> APP (PCR) <input type="checkbox"/> APP Genotyping (RAPD-PCR) <input type="checkbox"/> <i>Bordetella avium</i> (PCR) <input type="checkbox"/> <i>Bordetella bronchiseptica</i> (PCR) <input type="checkbox"/> <i>Bordetella bronchiseptica</i> (NAPIA-PCR) <input type="checkbox"/> <i>Campylobacter</i> Culture <input type="checkbox"/> <i>Chlamydia</i> spp. (PCR) <input type="checkbox"/> <i>Clostridium difficile</i> toxin (FI-SA)	<input type="checkbox"/> <i>Clostridium perfringens</i> Genotyping (PCR) <input type="checkbox"/> <i>E. coli</i> O157 (PCR) <input type="checkbox"/> <i>E. coli</i> O157 (AGG) <small>only if calves < 7 days of age</small> <input type="checkbox"/> <i>E. coli</i> plasmid toxin Multiplex (PCR) <input type="checkbox"/> Fungal Culture <input type="checkbox"/> Johne's (MAP) Culture (8 weeks) <input type="checkbox"/> Johne's (MAP) Direct Fecal (PCR) <input type="checkbox"/> <i>Pseudomonas</i> spp. (PCR) <input type="checkbox"/> <i>Mycoplasma</i> spp. (PCR) <input type="checkbox"/> <i>Leptospira</i> - pathogenic (PCR) <input type="checkbox"/> <i>Moraxella bovis/bovovaccin</i> , etc. (RAPD-PCR)	<input type="checkbox"/> Mycoplasma Culture <input type="checkbox"/> <i>Mycoplasma bovis</i> (PCR) <input type="checkbox"/> <i>Mycoplasma hyopneumoniae</i> (PCR) <input type="checkbox"/> <i>Mycoplasma</i> spp. (PCR) <input type="checkbox"/> <i>Pasteurella multocida</i> (RAPD-PCR) <input type="checkbox"/> <i>Salmonella</i> Enrichment (PCR) <input type="checkbox"/> <i>Salmonella</i> spp. (PCR) <input type="checkbox"/> <i>Streptococcus</i> Multiplex (PCR) <input type="checkbox"/> <i>Streptococcus equi</i> (PCR) <input type="checkbox"/> <i>Streptococcus suis</i> (PCR) <input type="checkbox"/> Other: _____
PARASITOLOGY		
<input type="checkbox"/> Baermann Lungworm <input type="checkbox"/> Cystic Float <input type="checkbox"/> Diel (Heartworm) <input type="checkbox"/> Direct Smear <input type="checkbox"/> Feline Heartworm Antibody Test	<input type="checkbox"/> Fecal Combo Qualitative & Quantitative <input type="checkbox"/> Fecal (Qualitative) <input type="checkbox"/> Fecal (Quantitative) <input type="checkbox"/> Giardia Float <input type="checkbox"/> Giardia Snap <input type="checkbox"/> Heartworm Antigen Test <input type="checkbox"/> Knott's (Heartworm)	<input type="checkbox"/> Occult Blood <input type="checkbox"/> <i>Tritrichomonas foetus</i> (PCR) <input type="checkbox"/> <i>Tritrichomonas</i> spp. (PCR) <input type="checkbox"/> <i>Tritrichomonas culture</i> - tissue <input type="checkbox"/> <i>Tritrichomonas culture</i> - feces <input type="checkbox"/> Other: _____
SEROLOGY		
<input type="checkbox"/> Anaplasmosis (cELISA) <input type="checkbox"/> Blue Tongue (FI IFA) <input type="checkbox"/> Bovine Leukemia Virus (ELISA) <input type="checkbox"/> Bovine IgG <input type="checkbox"/> <i>Bruceella abortus</i> (Card) <input type="checkbox"/> <i>Bruceella abortus</i> (Card) <input type="checkbox"/> DRGV (SN) <input type="checkbox"/> BVD Type 1 (SN) <input type="checkbox"/> BVD Type 2 (SN) <input type="checkbox"/> Carnioid IgG	<input type="checkbox"/> Canine Distemper (SN) <input type="checkbox"/> Canine Parvovirus (SN) <input type="checkbox"/> Caprine Arthritis Encephalitis (ELISA) <input type="checkbox"/> <i>Cryptococcus neoformans</i> (AGG) <input type="checkbox"/> EIA (AGID) - Use Separate Form <input type="checkbox"/> EIA (ELISA) - Use Separate Form <input type="checkbox"/> <i>Ehrlichia canis</i> screen (IFA) <input type="checkbox"/> Equine IgG <input type="checkbox"/> Feline Infectious Peritonitis (IFA) <input type="checkbox"/> IBR (SN) <input type="checkbox"/> Johne's (MAP) ELISA	<input type="checkbox"/> <i>H. leptospira</i> & <i>S. agalactiae</i> (MAT) <input type="checkbox"/> Lyme screen (+A) <input type="checkbox"/> <i>Mycoplasma hyopneumoniae</i> (ELISA) <input type="checkbox"/> P3 (SN) <input type="checkbox"/> PRRS (I-IFA) <input type="checkbox"/> Rocky Mountain Spotted Fever Screen (IFA) <input type="checkbox"/> Rocky Mountain Spotted Fever titer (IFA) <input type="checkbox"/> Toxoplasma (AGG) <input type="checkbox"/> West Nile Virus IgM (I-IFA) <input type="checkbox"/> Other: _____
TOXICOLOGY		
<input type="checkbox"/> I Standard Metals Panel <input type="checkbox"/> II Extended Metals Panel <input type="checkbox"/> I Trace Elements Panel <input type="checkbox"/> I Single Element (Specify): _____ <input type="checkbox"/> Lead <input type="checkbox"/> Urine drug panel (ILC)	<input type="checkbox"/> Mycotoxin Panel <input type="checkbox"/> I Single Mycotoxin (Specify): _____ <input type="checkbox"/> Nitrate <input type="checkbox"/> Cyanide <input type="checkbox"/> GI Content Microscopy <input type="checkbox"/> Toxic Plant ID	<input type="checkbox"/> Blue-Green Algae <input type="checkbox"/> Crustaceans <input type="checkbox"/> Fungus (Fungal) <input type="checkbox"/> Protozoa <input type="checkbox"/> Other: _____
VIROLOGY		
<input type="checkbox"/> Bovine Coronavirus (ELISA) <small>Feces only</small> <input type="checkbox"/> BRSV Antigen Capture (ELISA) <input type="checkbox"/> Canine Distemper (PCR) <input type="checkbox"/> Electron Microscopy <input type="checkbox"/> Influenza Type A (I-IFA) <input type="checkbox"/> Influenza (Universal) (PCR) <input type="checkbox"/> Porcine Coronavirus Type 1 (Perennial PCR)	<input type="checkbox"/> I PRRS - NA PCR <input type="checkbox"/> I PRRS - FU PCR <input type="checkbox"/> PRRS Multiplex PCR <input type="checkbox"/> Rotavirus (I-IFA) <small>Feces only</small> <input type="checkbox"/> Swine Influenza Virus (V) (PCR) <input type="checkbox"/> Virus Isolation <input type="checkbox"/> West Nile Virus (PCR) <input type="checkbox"/> Other: _____	BVD TESTING <input type="checkbox"/> BVD PCR <input type="checkbox"/> Ear Biopsy (no formalin) <input type="checkbox"/> E-coli Serum <input type="checkbox"/> Tissue Tag System (ear biopsy) <input type="checkbox"/> BVD IHC (Ear biopsy in formalin) <input type="checkbox"/> BVD Genotyping / Sequencing

Leave Blank

Separate form required for:
 CLINICAL IMMUNOLOGY
 CLINICAL PATHOLOGY
 COMPARATIVE HEMATOLOGY
 RABIES
 SEROLOGY EXPORT

LAB USE ONLY	COURIER RECORD	COULANT RECORD
CROWNED BY: _____ <input type="checkbox"/> OHL <input type="checkbox"/> FUE <input type="checkbox"/> TUES <input type="checkbox"/> Other: _____	<input type="checkbox"/> Mail <input type="checkbox"/> Exp Mail <input type="checkbox"/> Courier <input type="checkbox"/> Other: _____	<input type="checkbox"/> Fucose <input type="checkbox"/> End Pack <input type="checkbox"/> Urine <input type="checkbox"/> Juv Lys <input type="checkbox"/> KUB
SAMPLE CONDITION <input type="checkbox"/> Used <input type="checkbox"/> Broken <input type="checkbox"/> Leaked <input type="checkbox"/> Crushed <input type="checkbox"/> Sample Spill <input type="checkbox"/> Other: _____		
MISC INFO <small>Approx Fee \$</small> _____ <small>Parent Ref #</small> _____ Check # _____ <small>Qual Cont? Fee \$</small> _____		



MULTIPLE ANIMAL SUBMISSION FORM Page _____ of _____
 KANSAS STATE VETERINARY DIAGNOSTIC LABORATORY
 Mosier D-117, 1800 Denison Avenue, Manhattan, KS 66506-5601
 Phone (785)-532-5650; Toll Free (866) 512-5650; Fax (785) 532-4481;
 Web www.ksvdl.org

KSVDL Use Only

NOTE: This is a continuation of the General Sample Submission Form – Please fill out the General Submission Form completely and legibly.

Veterinarian <u>Kristin Haas, DVM</u> Clinic <u>VT Agency of Agriculture</u>	Owner/Producer <u>FILL IN</u> Business/Premise ID <u>LEAVE BLANK</u>
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Animal Name / Number / ID	Species	Breed	Sex	Age	Collection Date
Complete this page as needed depending on number of animals submitted			<input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Neutered/Spayed		
			<input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Neutered/Spayed		
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			<input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Neutered/Spayed		

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