

Wyoming State Veterinary Laboratory Newsletter – December 2005

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MESSAGE FROM THE DIRECTOR

POST-THANKSGIVING

The laboratory achieved re-accreditation by the American Association of Veterinary Laboratory Diagnosticians (AAVLD) following a 3-day site visit in October. It is re-accredited as a full-service, all-species veterinary diagnostic laboratory for 2005- 2009. Some 34 laboratories (or state laboratory systems) in the USA and Canada meet this standard.

I want to thank veterinarians from Cheyenne, Wheatland, Rawlins, Saratoga, and Laramie, as well as veterinary epidemiologists with the Wyoming Department of Health, Dr. Walt Cook from the state veterinarian's office, and Terry Cleveland from WGFD, all of whom met the accreditation team during the visit. You are very busy people. I appreciate your taking the time to talk to the team, and to express your support and concerns about the laboratory.

The AAVLD is a national organization that was established 48 years ago to promote veterinary diagnostic medicine in North America. Its focus is on improving existing diagnostic techniques, developing and standardizing new methods, and running the accreditation program for state-funded laboratories in the US and Canada. For my sins - and there must be more than I realized - I am president of AAVLD for 2005 - 06.

We approach the anniversary of Dr. Williams' death on 29th December 2005. Her family and that of Dr. Tom Thorne are establishing an endowed fund for wildlife biologists and veterinary students who come to the WSVL to work with us on wildlife disease investigation. This fund, to be called the **Beth Williams and Tom Thorne Wildlife Disease Training Fund** can be used to benefit graduate students in the department, such as when they go to national meetings to present their research findings. The department currently has nine graduate students - the most in its history.

If you are interested in supporting this endowment, please contact Anne Leonard in the College of Ag's development office at 307 766 3372.

In a separate and very generous gesture, Dr. Walt Williams, Beth's father, has donated money to modify a laboratory that will be named for Beth. It is specifically intended for wildlife research.

The department made an offer of employment to a nationally known and respected diagnostic pathologist. She is ACVP-certified with a PhD in pathology. Her interests are extensive.

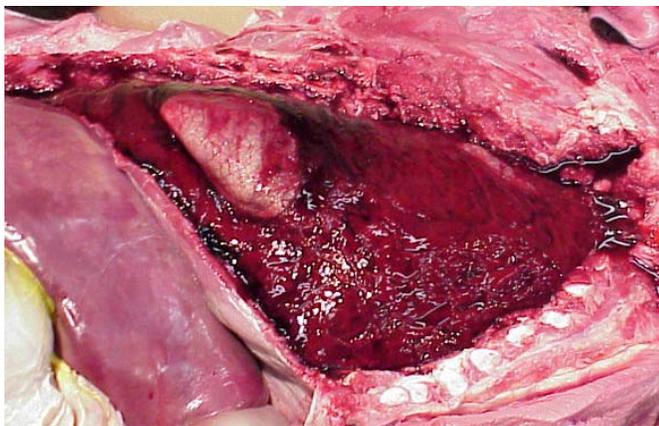
She has an excellent background in food animal pathology, toxicological pathology, and diseases of wildlife. I will know soon whether she will join the department or not; if she accepts, she will arrive no sooner than July 1 2006 due to family considerations. In the interim, I hope to hire another temporary pathologist to get us through to July 1, when the permanent hire might be on board.

Our new virologist, Dr. Ana Bratanich, should be here in January assuming the visa nonsense goes through. Dr. Bratanich's CV is on the WYOVET web site.

Donal O'Toole
December 4, 2005

DIAGNOSTIC CASES OF INTEREST

Sudden death in calf due to ruptured pulmonary artery



05B012852; *Hemothorax in calf with ruptured pulmonary trunk.*

Courtesy Dr. Jon Ayers.

Dr. Ayers was presented with a 4-month old Angus heifer calf that died suddenly. The owner noticed blood coming from its nose.

The principal finding at necropsy was a 2-cm rupture of the pulmonary trunk and bleeding into both plural sacs and the mediastinum. There was no evidence of trauma and so it is unclear why rupture occurred. Every year the laboratory sees perhaps one case of aortic rupture in young cattle - it is unusual to see it in the pulmonary arterial tree. In such cases we routinely do a trace element screen, particularly to check copper status. In this animal, as in others, hepatic copper was unremarkable (20.5 ppm; normal range 30 - 60 ppm; although a little low, this is not an indication of overt deficiency). I would be interested to know whether you see pulmonary and/or arterial rupture in young (1 - 2 year old) cattle that die suddenly. I am particularly interested in whether you associate specific factors, particularly genetic factors, with this event.

Several syndromes in cattle can result in catastrophic arterial rupture. One is **bovine Marfan syndrome** - the disease that

Abraham Lincoln purportedly suffered from, although to the best of my knowledge he was not a Limousin cross. Dr. Kathy Potter and her group at Washington State University did elegant work demonstrating that the basis for this bovine disorder is abnormal synthesis of fibrillin-1. Affected individuals, including people, have tall stature, arachnodactyly (spider fingers), displaced lenses, and dilation of the aortic root leading to dissection or rupture, sometimes *in utero*. Dr. Ayers' calf lacked these features.

Aneurysm and rupture of abdominal arteries is a sporadic problem in dairy cattle. At the 2005 AAVLD meeting, a group from Cornell described the gross and histologic changes associated with abdominal arterial aneurysm and rupture in 33 adult dairy cattle (1982 - 2005) on 29 farms in upstate New York and northern Pennsylvania. All affected cattle were female, Holstein, dairy cattle ranging from 2.5-5.5 years. Grossly, affected cattle exhibited cyanosis and marked hemoabdomen. There was marked dilatation and rupture of the abdominal aorta (2 cases) or one of its branches, including mesenteric (9 cases), gastric (9 cases), celiac (4 cases), and ruminal arteries (2 cases).

With the exception of bovine Marfan syndrome and trauma, the basis for aneurysm and arterial rupture in dairy and beef cattle is unknown.

Drs. Jon Ayers and Donal O'Toole
November 30, 2005

Potter KA, Besser TE: 1994, Cardiovascular lesions in bovine marfan syndrome. *Vet Pathol* 31: 501 - 509.

Lamm CG, Guard CL, Erb HN, Njaa BL: 2005, Characterization of aneurysm and rupture of abdominal arteries in dairy cattle. 48th annual conference, AAVLD, Hershey, PA

Distemper in dogs displaced by Hurricane Katrina

A veterinary practice in Jackson WY saw a succession of young dogs that presented with mucopurulent oculonasal discharge, with coughing and weight loss. The dogs were displaced from Louisiana by Hurricane Katrina, and adopted here.

They were positive for CDV by fluorescent antibody on conjunctival swabs. Please be aware that dogs coming into Wyoming from the Gulf Coast may bring with them some diseases we are unfamiliar with. They will also bring in some of the old standbys, such as distemper. Common things are common.

Pigeon fever in WY in 2005

This has been another pigeon fever year in Wyoming. We've seen horses with myositis typically on the sternum but also in other locations. Horses culture positive for *C. pseudotuberculosis* were confirmed in Gillette, Pine Bluffs,

Laramie, Torrington, Sheridan, Buffalo and Worland. In the past most Wyoming cases were concentrated in the Cheyenne area. This year a lot of the cases were seen in the Gillette and Sheridan-Buffalo area.

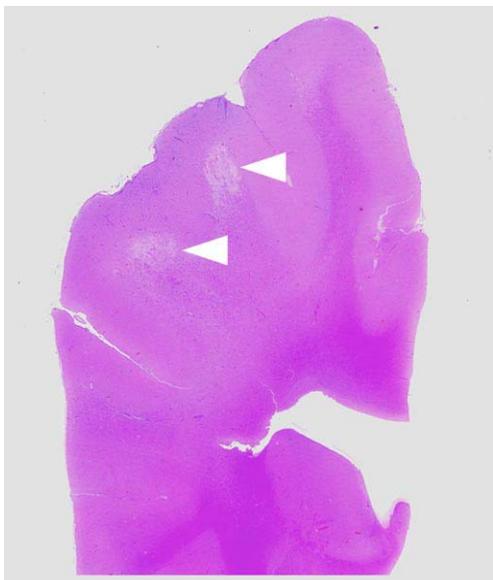
This remains an enigmatic disease in terms of transmission. Dr. Sato and I visited a property outside of Laramie to get a better sense of what insect might vector the disease. We were unable to identify specific risk factors that might be responsible. If any of you have experience with this disease, particularly in terms of transmission patterns among groups of horses, risk factors and effective treatment, it might be a useful presentation for the 2006 summer WVMA meeting.

Drs. Kenji Sato and Donal O'Toole

Chronic necrotizing encephalitis of toy-breed dogs

When a dog gets sick in the head, we think of rabies, distemper, opportunistic bacterial or fungal infections, followed by less common ones: intra-cranial neoplasms, hepatic encephalopathy, and - very rare - WNV. A range of other canine encephalopathies exists, some apparently rare. Some are strongly breed-associated. Provided you submit us an intact brain, we have an excellent chance to lock in an accurate diagnosis, especially for these breed-associated disorders. The clinical prognosis on such cases, particularly after you remove the brain, is however poor.

A family of poorly defined inflammatory encephalopathies occurs in young dogs of specific breeds. These include Pugs, Maltese, Pekinese, Shi-tzu, Chihuahua, Yorkshire terrier - basically most of the small breeds. A similar, probably unrelated disease occurs in racing greyhounds in Ireland



WSVL #05C13366: Pug dog encephalopathy in 2-year old dog from Smoot WY. Note pallor due to neuronal necrosis

(arrowheads). These lesions can be sufficiently large to be picked up by magnetic resonance imaging
Courtesy Dr. Don Montgomery

A veterinarian in Smoot was presented with a 2 year-old Pug. The dog exhibited ataxia, circling, visual impairment, head tilt, and vocalization. The owners thought the dog had not been "quite right" over the previous six months. It responded to diazepam initially. Blood work was unremarkable with no evidence of hyperammonemia. The dog was unvaccinated for rabies, became terminally ill, and was euthanized. The veterinarian submitted the head with a request to check for rabies. Very astutely, the veterinarian also requested that, if rabies was negative, we consider pug dog encephalopathy.

Rabies testing in Dr. Mills' shop was negative. On histology Dr. Montgomery found subacute to chronic nonsuppurative meningoencephalitis with malacia at gray-white interfaces in cerebral cortex

This is at least the second time we have seen this syndrome in a young pug dog from Wyoming. In 2003 we saw case of the disease in a castrated 4-year old pug from Casper. Coincidentally, at this year's meeting of the AAVLD a case of Pug encephalopathy was presented. The presenter asked attendees how many had seen this and I was astonished at how many hands went up. Pug encephalopathy may not be that rare. You might keep it in mind next time you see a toy breed dog with a gradual onset encephalopathy. The Smoot veterinarian did and was on the money.

At the veterinarian's request, the owners attempted to contact the Wyoming breeder in Sheridan from whom they bought the pug to establish whether there might be other cases in this breeding line. Unfortunately they were unsuccessful - the breeder appeared to have moved. The genetics of this disease in pug dogs and other toy breeds is ill defined. Multiple cases have been seen in single litters. A hereditary basis has not been established.

In this case it was helpful to have both halves of the brain, since one of the defining features of the disease is bilateral asymmetry, which was present.

Drs. Don Montgomery and Donal O'Toole
November 22, 2005

Stalis IH, Chadwick B, Dayrell-Hart B, Summers BA, Van Winkle TJ: 1995, Necrotizing meningoencephalitis of Maltese dogs. *Vet Pathol.* 32(3):230-235.

Cordy DR, Holliday TA: 1989, A necrotizing meningoencephalitis of pug dogs. *Vet Pathol* 26(3):191-194.

Kobayashi Y, Ochiai K, Umemura T et al: 1994, Necrotizing meningoencephalitis in Pug dogs in Japan. *J Comp Pathol* 110:129-136.

Tipold A, Fatzner R, Jaggy A et al: 1993, Necrotizing encephalitis in Yorkshire terriers. *J Small Anim Pract* 34:623-628.

CANINE EPITHELIOTROPIC LYMPHOMA

Veterinarians sometimes joke privately that the best job is to be a dermatologist - patients never die, yet rarely get better. Dr. Bill Wilson in Riverton was presented with a challenging case recently that proved that skin disease can be fatal.

A castrated 5-year old Sheltie developed multiple red raised firm lesions on lightly haired skin of the belly (image below). Over the following two months they became more widespread. Dr. Wilson sent in a CD with excellent digital images, along with four biopsies. This is the ideal combination of information for the pathologist, and also gives us some gross teaching material that we can share with pre-veterinary students. Dr. Wilson's tentative diagnosis was systemic lupus or some other autoimmune disorder.



WSVL #05C15378 Epitheliotropic lymphoma in thinly haired skin of the ventral abdomen. There are discreet red raised lesions (arrow)
Courtesy Dr. Bill Wilson

Dr. Cornish's diagnosis was disseminated epitheliotropic cutaneous lymphoma. T-cell typing was not done on this case, but we can do this if you want absolute confirmation. The distinctive gross appearance of the disease is due to lymphocytes homing onto and infiltrating epidermis. This results in a monomorphic malignant infiltrate in the skin, progressing to ulceration. The alternate, unhelpful name for this is "mycosis fungoides"

Textbooks describe these as "rare." That is correct, compared to allergic dermatitis. But we see several of these each year. It may be rare, but you have probably seen it.

The prognosis in epitheliotropic cutaneous lymphoma is poor. They are refractory to standard lymphoma treatments. There is metastasis to superficial lymph nodes and to internal nodes and organs. In the current case Dr. Wilson euthanized the dog.

Drs. Todd Cornish and Donal O'Toole
November 27, 2005

Making a laboratory diagnosis of Potomac horse fever (PHF)

The laboratory gets requests for PHF diagnosis on a sporadic basis. We use two techniques for diagnosis: serology or PCR.

We do a nested PCR (polymerase chain reaction; detects unique DNA sequences in submitted samples) in-house. For serology we send these out for testing via an indirect fluorescent antibody assay. Finding antibody titers in a single serum sample is of no value because there is no good correlation between titer and likelihood of the disease. Therefore **paired serum samples** are necessary for a reasonable chance of diagnosis. Notice I said *chance*. The fluorescent antibody test must be done in the same laboratory at the same time. You may be getting the feeling that the serology is not the best assay. That is correct. Results vary between laboratories and probably between different personnel in a laboratory. Dr. Cornish and Joan Edwards considered adding this to tests offered by the WSVL. They decided it was not reliable enough for us to put our stamp on. Therefore, we will serve as a go-between. We will continue to forward serum samples to laboratories that perform this test and interpret the results.

We offer a nested PCR, which is the best thing we have available. But this too can give false positive or false negative results. We have done a comparison with a California laboratory using fecal samples. Our results match. The assay works on whole blood but we have not compared results on blood. The other issue with the PHF PCR is that it is a "nested" PCR. This means more technician time and effort goes into the assay, compared to routine, non-nested PCR assays. This effort is needed regardless of the number of samples. Last year we received just two requests for PHF PCR. It is difficult to justify the quality control (running positive and negative controls) for so few tests.

We will continue to offer the test for now but we will drop it if the demand for the test remains at the current level.

Dr. Ken Mills

IMAGES OF VSV IN WY 2005



Cheilitis in horse with VSV. Note ulceration of chin and lips.
Image: Dr. Bill Wilson, Riverton.



Coronitis in horse following episode of VSV. Note swollen coronary band. Image: Danny Cosner, AHT
USDA-APHIS-VS-WY



Edematous sheath with ulceration of tip of penis.
Image: Danny Cosner, AHT
USDA-APHIS-VS-WY
Note: larger versions of images at WSVL's web site

CWD FOUND IN NEW AREA IN BIG HORN BASIN

THERMOPOLIS – Two mature mule deer bucks harvested in hunt area 127 immediately northwest of Thermopolis have tested positive for chronic wasting disease (CWD), a fatal brain disease that can affect all members of Wyoming’s deer family. CWD had not previously been detected in this area.

Worland Wildlife Biologist Bart Kroger collected lymph nodes from the deer Oct. 17 as part of the Wyoming Game and Fish Department’s CWD surveillance effort. Both samples were tested at the department’s laboratory in Laramie and tested positive for CWD.

CWD testing is a two-pronged approach, according to Cody Region Wildlife Management Coordinator Kevin Hurley. “The first test is an immunologic test called the ELISA. When a sample tests positive, it is termed a ‘presumptive

positive’ until the results from a second IHC (immunohistochemistry) test is known,” Hurley said. “In nearly every case, when the ELISA turns up a presumptive positive, it is confirmed positive by the IHC.”

The two samples from area 127 tested positive for first the ELISA test and then the IHC test on Oct. 28.

In an effort to manage the spread of CWD and to understand how widespread it might be in an area, the department considers taking aggressive actions when cases are found in new areas. In this case, Game and Fish Deputy Director Gregg Arthur has instructed personnel in the Cody region to remove up to 50 deer within a five-mile radius of where the area 127 deer were harvested.

“I have asked our Cody personnel to move forward and collect additional samples. This action is consistent with the best science and the department’s CWD Management Plan,” Arthur said. He added that surveillance in other states has shown that it may be possible to slow down the spread of CWD if new cases of CWD are identified early.

According to Arthur, the additional sampling serves three purposes. First, it allows the Game and Fish to determine the prevalence of CWD in an area. Secondly, it may eliminate CWD in an area and prevent its spread to other areas. And thirdly, it may allow the Game and Fish to locate an area of infection that it can manage aggressively.

“Should more positives turn up, we will expand our efforts,” Arthur said.

The Game and Fish will conduct the removal, harvesting both adult males and females between Oct. 27 and mid-November during daytime and nighttime hours. Research has demonstrated that samples taken from adult males and adult females are more likely to indicate if CWD is present than taking samples from younger-aged animals.

All of the animals collected will be field dressed and held in cold storage until the absence or presence of CWD in each is known. The meat from deer testing negative will be donated to individuals and families in need. Carcasses testing positive will be disposed of in an approved landfill in accordance with the Game and Fish CWD transportation regulation.

CWD is a fatal neurological disease that has been diagnosed in wild deer and elk in 10 states and two Canadian provinces. Animals show no apparent signs of illness throughout much of disease course. In terminal stages of CWD, animals typically are emaciated and display abnormal behavior.

There is no confirmed link between CWD and any human illness.

For more information on chronic wasting disease visit the Wyoming Game and Fish web site <http://gf.state.wy.us/>

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Wyoming Game and Fish Department
Dateline: 10/28/2005

WYOMING STATE VETERINARY LABORATORY RECEIVES FULL ACCREDITATION

The Wyoming State Veterinary Laboratory in mid-November received full accreditation from the American Association of Veterinary Laboratory Diagnosticians (AAVLD).

“This is the fourth time in a row the laboratory passed accreditation with flying colors. It became accredited in 1989 under Dr. Lynn Woodard. It has maintained full accreditation to perform tests on all mammalian species ever since,” says Donal O’Toole, WSVL director and head of the Department of Veterinary Sciences, which operates the lab.

According to College of Agriculture Dean Frank Gale, the previous director of the WSVL, “The accreditation validates the quality of services provided by the laboratory; therefore, testing from this facility is recognized internationally. The accreditation assures the public that the service it is getting for its pets, domestic livestock, and wildlife is top notch.”

The WSVL provides a wide spectrum of veterinary testing and disease surveillance services for all species including domestic livestock and other food animals, wildlife, pets, and avian, aquatic, zoo, and exotic species.

“The WSVL is unique in the large volume of wildlife samples it processes, which we do cooperatively with the Wyoming Game and Fish Department's Wildlife Disease Laboratory, with whom we share the building” O’Toole says. Publicly funded, full-service veterinary diagnostic laboratories in the United States and Canada undergo national accreditation inspections every five years. Currently, 36 states or provinces have an accredited state-funded laboratory or lab network.

“It is a matter of pride to me that our small laboratory and its great staff meet or exceed the standards that large systems in California and New York have to meet,” O’Toole says.

“Some of our neighboring states such as Utah and Idaho lack accredited laboratories, and other neighboring states have not received full accreditation. Even the U.S. Department of Agriculture’s National Veterinary Services Laboratories is not an AAVLD-accredited laboratory,” he adds.

The AAVLD recently increased the standards that had to be met, especially on the quality assurance side. “A lot of credit goes to Dean Gale and (Vice President of Administration) Beth Hardin, as well as her predecessor Dan Baccari. They’ve worked hard to make sure the WSVL is well staffed and equipped,” O’Toole says. In the past five years, he notes, UW and the College of Agriculture have invested approximately \$1.2 million in laboratory equipment and facilities.

Hardin notes, “Congratulations to the faculty and staff at the laboratory. We are honored to support their work and grateful for the recognition.”

O’Toole says it is not unusual for a laboratory to be accredited for just one year (“partial accreditation”).

“Only laboratories meeting the highest standards are accredited for a full five-year cycle, which is what the WSVL received. It’s a bit like getting an A on a national examination administered by your peers,” he notes.

The AAVLD sent three of its members to the WSVL in September. The team was comprised of state veterinary diagnostic laboratory directors from Indiana, Ohio, and New York. They spent three days examining case reports at random; evaluating standard operating procedures, quality control, turnaround times, and laboratory safety; interviewing technical and academic staff as well as clients; watching staff perform laboratory tests; and meeting with university administrators.

“Receiving accreditation is an indication of the high caliber of staff and faculty members working in the laboratory and of the support the lab receives from the dean of the College of Agriculture and upper administration in the university,” O’Toole emphasizes. In the past five years, he notes, UW and the College of Agriculture have invested approximately \$1.2 million in laboratory equipment and facilities.

The single-spaced, 15-page accreditation report delivered to O’Toole states that feedback from veterinary practitioners and representatives from the Wyoming Department of Health and the Wyoming Game and Fish Department who use the lab were “uniformly positive.” Concern was expressed by some of the users, however, about the adequate numbers of pathologists in the laboratory.

According to the report, one user stated, “I’m concerned about the workload of the pathologists, and I’m afraid the ones here will burn out.”

At the end of the report, the following recommendations were offered (the WSVL has five years to implement these):

- Fill the vacant pathologist and virologist positions as soon as possible;
- Pursue construction of larger biological safety laboratory facilities for level 3 “high impact” pathogens including brucellosis, plague, and tularemia so they can be handled more safely;
- Relocate and renovate specimen receiving and client reception areas;
- Pursue moving four critical staff positions from grant funds to “hard” state funds;
- Develop and adhere to a defined plan to purchase and replace necessary equipment in the laboratory;
- Make a formal arrangement with a physician in the event someone in the facility is exposed to a potentially harmful agents or toxins;
- Improve the physical facilities of the necropsy room including the installation of a hydraulic table and better lighting;

- Perform the streaking of primary plates in bacteriology under a biosafety cabinet on a routine basis.

“We’ll seek to achieve the recommendations as soon as practical,” says O’Toole, who notes that some of the recommendations will require increased funding from the state. “Some will come before the legislature in its 2006 session.”

The report also contains two requirements of the WSVL including: “Structure and conduct management review,” and “Adhere to the quality system incorporation timeline.”

O’Toole says he needs more information from the accreditation team on these two matters before he can proceed.

Robert Waggener,
Editor, Office of Communications and Technology
November 21, 2005

B. OVIS UPDATE

Those of you who submit samples for *Brucella ovis* testing will have received a letter from me in October saying that we suspended offering this test. The problem is inconsistent reagent quality from the National Veterinary Services Laboratories.

As our clients you are entitled to certain basic assumptions. If something comes back from the laboratory positive, it should mean the animal is indeed POSITIVE for what it was tested. Equally, a negative test should mean the animal is NEGATIVE.

Not all tests are like that - some are better than others. It is a difficult decision to pull a test. In this case, with the current antigens we receive from NVSL, the *B. ovis* test is too variable.

In plain Irish, we need a better test.

With the support of Dr. Jim Logan, Dr. Cindy Wolfe and the good folks on the United States Animal Health Association, we put forth a resolution that was passed at the USAHA’s annual meeting in November. It asked the USDA to:

- Notify all state veterinary laboratories that there has been a reagent consistency problem with the current *B. ovis* test, and that NVSL is working with state laboratories to improve it
- To develop reliable test sera (**known** strong positive, weak positive, and negative sera) for quality control
- Work with selected veterinary laboratories to validate the modified test as well as new batches of antigen
- Encourage commercial companies with kits licensed abroad to apply for a US license.

We got to this point in part because the Wyoming and California laboratories suspended offering the test as configured. I regret the migraine this causes your woolgrower clients.

The company approached by the USDA to apply for a USDA license declined, I assume because the US market is too small to be profitable. So we are back to working with USDA-developed reagents.

Becky Wills’ team will work with the USDA on testing sera. A re-configured test is going out to >10 state laboratories, including the WSVL. We will return our results to NVSL in mid-January 2006. Once those results are analyzed, I assume Jan-Feb, we will know whether the new reagents are any more reliable, giving repeatable results.

If they are, and reagent quality is maintained, we will resume offering the test.

Donal O’Toole
November 21, 2005

**SEROLOGICAL TEST FOR ASPERGILLUS,
BLASTOMYCES, COCCIDIOIDES AND
HISTOPLASMA**

Diagnostic Serology will offer this test to WSVL clients to see if there is demand that warrants our having this as part of our regular armamentarium of tests.

This is an immunodiffusion test, so is not species-specific (you can send us samples from dogs, elephants or, should you live in Jackson, gnus and whales). It will detect antibodies to any of the following:

- Aspergillus spp.
- Blastomycosis spp.
- Coccidioidomycosis
- Histoplasmosis

None of these are common agents for Wyoming, except for aspergillosis in birds. But we get requests from clients to test for deep mycotic infections, and in the past sent these to Cornell. The kits we are using are the same as those used by Cornell.

	Cost
ONE fungal agent	\$25.00
FOUR fungal agents	\$45.00

The greatest limitation of the test procedure is with specimens from patients with early, primary infections (first 3-6 weeks; false negative result). Immunocompromised or immunosuppressed patients may not produce detectable amounts of antibody and so may also generate a false negative result.

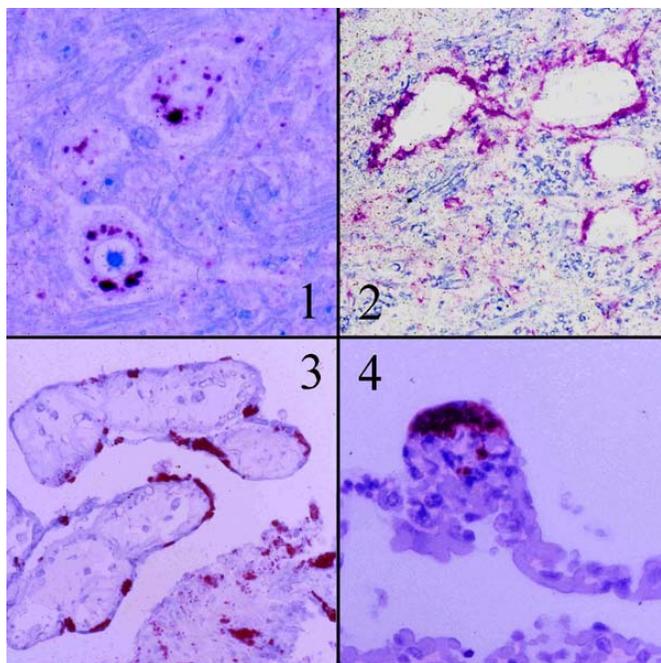
Please contact Joan Edwards if you have questions about the test.

We will discontinue the test if there is not enough interest to keep the kits within their expiry period.

Joan Edwards
November 21, 2005

IHC FOR INFECTIOUS AGENTS IN TISSUE

Immunohistochemistry is a technique that permits specific identification of viral, bacterial and other antigens in formalin fixed tissues. It is a powerful method because it allows the pathologist to confirm that the lesion not only looks like it was caused by a particular bug - the agent itself can be decorated specifically in tissue.



*IHC for important infectious agents in Wyoming (red stain):
1: rabies (inclusion bodies in neurons); 2: CWD prions external to surface of neurons; 3: Intracellular Brucella abortus in placenta following abortion; 4: Yersinia pestis (plague) in pulmonary capillary of septicemic deer.*

The same method is used to detect BVDV in fixed ear notches from calves. We currently have working IHC methods to detect the following infectious agents in formalin fixed tissues:

- Canine parvovirus
- Canine distemper virus
- Feline panleukopenia virus
- Feline infectious peritonitis virus
- Rabies virus
- Bovine coronavirus

- West Nile virus
- *Neospora canis*
- *Toxoplasma gondii*
- *Mycoplasma bovis*
- *Brucella abortus*
- *Yersinia pestis*
- *Francisella tularensis*
- Bovine viral diarrhea virus
- Chronic wasting disease/scrapie/BSE
- Equine herpesvirus -1
- Bovine herpesvirus-1

The main advantage of these methods is that, if all we have for diagnosis is formalin-fixed tissues, we can make a firm etiological diagnosis.

The cost for an individual IHC run on a slide is currently **\$15/antigen**. The exception is BVDV, since put multiple samples of skin on each slide. Drs. Montgomery and Cornish are adding to the range of antigens that can be detected. These include tumor antigens (B and T lymphocyte markers; specific markers for melanomas, sarcoma and carcinomas, etc).

When you see on a report a comment from the pathologist: "Do you want IHC to confirm the tentative diagnosis of [name of infectious disease]", you are being asked whether you want to firm up the diagnosis by paying another \$15 for immunohistochemistry. Depending on your client, it can be a good investment. It takes the case from being: "This looks like it might be caused by..." to "This was caused by...."

Donal O'Toole
November 22, 2005

A new president for the university

Dr. Phil DuBois has moved on from UW. The university is looking for a new President. And no, Dr. Tharp, while I personally cherish your anarchic sense of humor, you are not at this time shortlisted for the position. In a few years, however, Talon might be.

The university established a panel to do the search. These are political things. Even the Governor commented on the sort of person that the university might consider hiring.

As a small cog in the wheel of UW, the Wyoming State Veterinary Laboratory has an interest in this being a successful process. We would like to see someone who takes to heart the interests of Wyoming, who knows the state, who is comfortable with agriculture, who cares about our landscape, and has an investment in healthy wildlife.

If you want a voice in the process - this is your state's university - don't hesitate to talk to the trustees and/or the people on the search committee. There is information on the UW web site: <http://uwyo.edu/>.

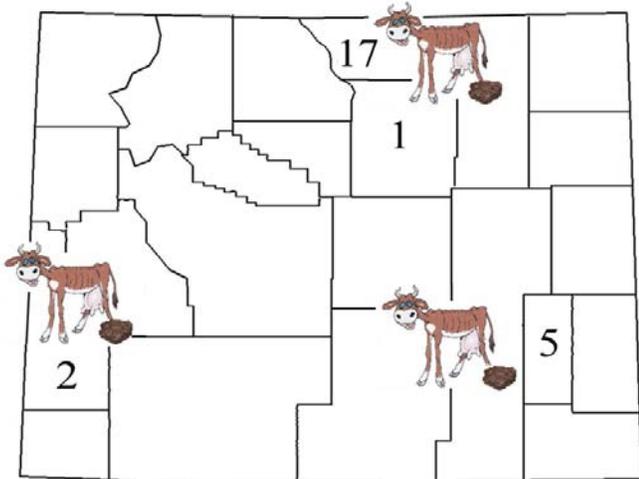
You are an important part of our community and would be surprised how much influence you carry. Exercise that influence and make sure the University gets the sort of person who can balance the many missions it has - including professional service.

Any one of the faculty members would be happy to discuss with you the process and outlook for hiring effective candidates that will strengthen our university.

November 30, 2005

LABORATORY CONFIRMED JOHNE'S DISEASE IN WYOMING 2005

4 counties with infected cattle; 25 cases



Data: Courtesy Dr. Ken Mills

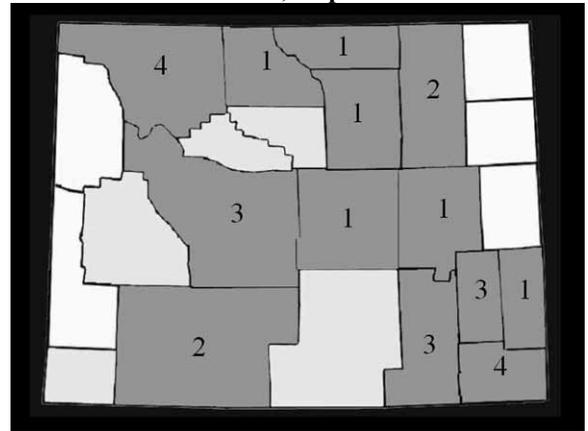
LABORATORY CONFIRMED RABIES IN WYOMING 1/1/05 - 10/31/05

626 examinations 15 positive skunks; 3 positive bats



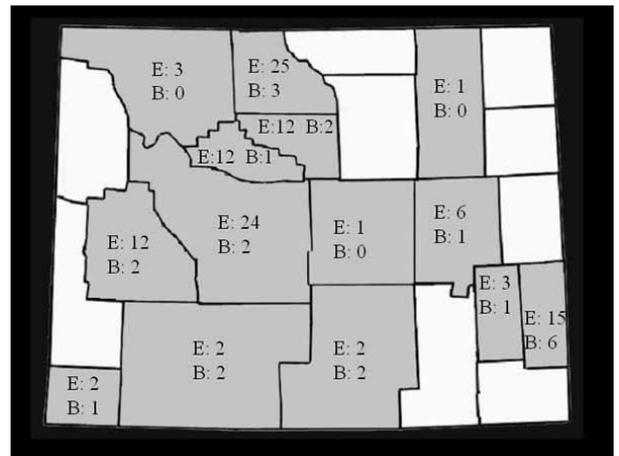
Data: Courtesy Dr. Ken Mills, Rabies unit

WNV CONFIRMED IN WY HORSES 2005
62 tested; 27 positive



Data: Courtesy Terry Creekmore and WDH

VSV CONFIRMED IN WY HORSES AND CATTLE



Source: Wyoming Livestock Board