

Animal Health News



News for Veterinarians from the North Dakota Board of Animal Health

EIA case still under review

BISMARCK — One herd of horses remains quarantined for Equine Infectious Anemia (EIA) in North Dakota, as of Dec. 8, 1999, according to the state veterinarian.

Dr. Larry Schuler, told the State Board of Animal Health (BOAH) at its recent quarterly meeting that the owner of the animals must have two negative herd tests 30 days apart before the quarantine is lifted.

The BOAH authorized Commissioner of Agriculture Roger Johnson to indemnify producers affected by the quarantine. Johnson has determined that two producers be indemnified for their losses after appraisals.

Rep. Rod Froelich, Selfridge urged the board to follow guidelines set for cattle in determining indemnity for horses.

The board unanimously voted to require producers seeking indemnity to document that all animals in their herds entered the state with appropriate veterinary inspection certificates and official EIA tests before the board recommends providing indemnity, based under the guiding principles of NDCC 36-15-11 to insure consistent treatment for all types of livestock.

The board voted unanimously to submit interim emergency rules on chronic wasting disease (CWD) to the Legislative Council to make them permanent. An administrative hearing has been held, and no comments on the rules have been received.

The board discussed the Northwest Cattle Project. To date, no cattle from North Dakota have gone to Canada, since the state joined the project. Last year, approximately 50,000 head from other states went north. As of Nov. 12, 1999, the total count is 75,124. Dr. Schuler has asked for a listing of approved feedlots in Canada, but has not received anything to date.

An inquiry by the North Dakota Stockmen's Association re-

garding a proposed endangered species categorization for prairie dogs resulted in a unanimous vote opposing any alternatives that would increase prairie dogs populations. BOAH members said they were concerned about environmental damage and the potential for increasing the spread of plague. The board's position was forwarded to the U.S. Fish and Wildlife Service.

Shawn Schafer, Turtle Lake, was appointed as the cervid (deer and elk) industry representative on the Nontraditional Livestock Advisory Council. Kim Buntrock, Driscoll, was named alternate. Both were nominated by the North Dakota Deer Ranchers. Loren Kittelson has resigned from the council, and the Dakota Feather and Fur Organization has been asked for names for a replacement to represent nontraditional birds.

Dr. Charles Stoltenow, Fargo, was appointed BOAH consulting veterinarian.

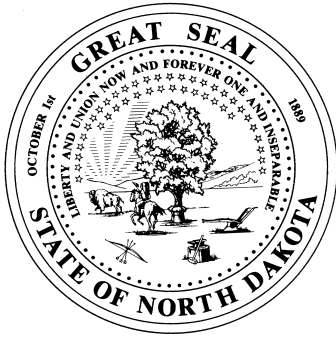
The board approved a request to import two non-vaccinated bred Red Angus females from Manitoba. The animals must be tested for tuberculosis and brucellosis prior to entry and retested 60 days after arrival for brucellosis. They may not be sold for three years, except for slaughter.

A request to raise whitetail deer was tabled until further information, including a farm premises description and a completed application, is received. The animals would come from Chahinkapa Zoo in Wahpeton and other zoos in the state.

Last year, the state veterinarian's office confiscated two dogs that were starving or being mistreated from an individual in Regan. The dogs were turned over to BOAH by a court, and were later euthanized. A recent complaint alleged the individual again had two dogs that were not being cared for. One dog was confiscated, turned over to BOAH, and has since been adopted. The other dog could not be captured.

In this issue

Veterinary news briefs	2	Baxter Black	5
Johnes Disease update	3	Blastomycosis	6
Heartwater reported in Florida	3	No CWD found in ND elk herds	7
Scientists link BSE, Creuzfield-Jakob	4	Practitioners play role in FADs	8



Animal Health News

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THE NORTH DAKOTA BOARD OF ANIMAL HEALTH

Francis Maher, Menoken
President

Jody Hauge, Leith
Secretary

Dr. Steve Yost, Dickinson
Jeff Dahl, Gackle

Dr. William Tidball, Beach
Paula Swenson, Walcott
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and

THE NORTH DAKOTA DEPARTMENT OF AGRICULTURE

Roger Johnson
Commissioner of Agriculture

Dr. Larry Schuler
State Veterinarian

Dr. Susan Keller
Deputy State Veterinarian

Please send all correspondence
to the State Veterinarian
Board of Animal Health
N.D. Department of Agriculture
600 E. Boulevard Ave., Dept. 602
Bismarck, ND 58505-0020
PH: (701) 328-2654
(800) 242-7535
Fax: (701) 328-4567



Ted Quanrud, Editor

Veterinary news briefs

Veterinarian participation crucial

Veterinarian participation in North Dakota's Dairy Diagnostic Program on-farm teams has increased markedly since the North Dakota Veterinary Medical Association's annual meeting last August.

John Johnson, program coordinator, attributes the increase to NDVMA's invitation to make a presentation at the convention.

"Since the NDVMA invited us to be on their convention program, we've had an impressive and welcome increase of participating veterinarians," Johnson said. "By November 1999, there was a herd health specialist on nearly 50 percent of our diagnostic teams."

"The veterinarians continue to be a vital link to the success of our livestock operation," said J.W. Schroeder, Extension Livestock Specialist-Dairy at North Dakota State University. "Most successful dairies retain herd health consultants for obvious reasons - profit. As our program evolves and grows, many are just beginning to see the benefit of the team approach, as well as a benefit to their practice."

For more information on the North Dakota Dairy Diagnostic Program, contact Johnson at (701) 231- 7993.

Veterinary technician licenses due

All veterinary technician licenses expired at the end of December. Renewal notices were mailed in November, and second notices were mailed the last week in January. Technicians who have not yet renewed their licenses should submit the renewal form and the \$10 license fee as soon as possible.

For more information, contact the North Dakota Board of Veterinary Medical Examiners, P.O. Box 5001, Bismarck, ND 58502; phone: (701) 328-9540; fax: (701) 224-0435; e-mail: ndbvme@state.nd.us

Retagging regulation

Veterinarians who prefer "retagging" to "reading" current official identification on the animal(s) in question, are reminded that retagging is allowed only when no official ID can be found on the animal.

Extra label needed for Cydectin®

Cydectin® Pour-On parasite control has recently been approved for use on lactating dairy cattle, but any container of the chemical with the old label must not be stored with drugs for lactating cattle unless it has been correctly extra-labeled by a veterinarian.

The manufacturer, Fort Dodge Animal Health, ran an advertisement for Cydectin® in the September issue of eight magazines serving the dairy industry. The ad claimed that the product had been approved for lactating cattle. The company later admitted that the ads were "false and misleading," since a New Animal Drug Application (NADA) had not yet been approved for such use. The company apologized for any inconvenience or confusion that may have resulted, and has implemented corrective actions to assure that promotion of unapproved products will not be repeated.

Johne's Disease: Should you be concerned?

Most veterinarians are well informed about Johne's Disease, but in 1997, the National Animal Health Monitoring System reported that 70 percent of beef producers had never heard of this chronic, debilitating disease of cattle and other ruminants.

In North Dakota until 1996, a laboratory diagnosis confirming Johne's disease required a report to be sent to the state veterinarian. Auction market management was to be informed upon arrival of Johne's positive animals consigned to be sold. As a result, Johne's was infrequently diagnosed, and owners chose to sell suspicious or undiagnosed chronically infected animals in lieu of having their herd labeled "Johne's Infected".

Since 1996, Johne's Disease is still considered a reportable disease, but



that is the extent of any regulatory action related to a positive diagnosis. This has enabled producers and their veterinarians to work towards the common goal of managing and eventually eradicating the disease from their herds. (Producers can still be held accountable for knowingly selling a Johne's positive animal to another producer.) The number of posi-

tive laboratory diagnoses has continued to increase steadily from 1996 to the present day.

The disease has been reported in almost every country. Some countries may take a more aggressive approach in eradicating or controlling the disease, and eventually require a statement with respect to Johne's Disease status. Some states provide voluntary Johne's programs for producers. International research is investigating a possible correlation between *Mycobacterium paratuberculosis* infection in animals and Crohn's disease in humans.

In future newsletters, information about Johne's Disease, including clinical signs, disease testing, management plans, economic impact, and potential relationship to Crohn's, will be presented to help practitioners make informed decisions regarding the impact the disease has on beef and dairy herds.

Heartwater threat prompts tortoise ban

Florida has issued an emergency ban on the importation of the African spurred tortoise (*Geochelone sulcata*) and leopard tortoise (*Geochelone pardalis*) after it was found that some of these reptiles are infected with tropical bont ticks (*Amblyomma spp.*) carrying the rickettsial agent (*Cowdria ruminantium*) that causes the deadly heartwater disease.

Heartwater is an acute tick-borne disease of domestic and wild ruminants, including cattle, sheep, goats, deer and antelope. It is characterized by a rapid rise in body temperature, loss of appetite and respiratory distress, followed by nervous signs such as exaggerated blinking of eyes, circling motions, uncoordination, high-stepping stiff gait, recumbency, and paddling movements of the limbs. Occasionally there is diarrhea. It terminates in convulsions and prostration.

Heartwater does not affect humans, although the ticks are potential vectors of human diseases.

Should this disease enter the United States, mortality rates in susceptible species would be expected to be from 40 percent to near-100 percent. Since there is no officially recognized treatment or practical vaccine for the disease, prevention relies on

control of its tick vectors. (Note: The US Animal Health Association Foreign Animal Diseases manual says that recently born livestock can be immunized by injection of HW-infected blood with a simultaneous dose of doxycycline.)

The emergency rule requires reptiles, amphibians, llamas, antelopes, and captive wild species from all areas to be inspected and certified free of ticks prior to entry into Florida. In addition, all animals from countries with heartwater disease must have prior permission for entry and are subject to inspection and quarantine upon arrival. Heartwater is mostly found in Sub-Saharan Africa and Madagascar. It can also occur in some Indian Ocean islands and a few Caribbean islands, and occasionally in Europe. It is not found in the U.S.

The ban followed the Nov. 29, 1999, discovery that ticks collected from imported tortoises in a Hillsborough County reptile facility tested positive for the disease. The facility is now under quarantine, and eradication procedures are underway.

A memorandum detailing the rule and asking for cooperation has been sent from law enforcement officials to reptile dealers, importers, pet shops and other interested persons.

Scientists find link between BSE and Creutzfeldt-Jakob Disease

A new study provides the most compelling evidence to date that infectious proteins called prions from cattle with bovine spongiform encephalopathy (BSE), widely known as “mad cow disease,” have infected humans and caused fatal brain damage.

Recent epidemiological findings, along with studies of the prion protein and transmissions to inbred mice and primates, have increased the possibility of a link between BSE and a new form or variant of Creutzfeldt-Jakob disease (vCJD) in humans, both characterized by fatal perforations of brain tissue.

Researchers from the University of California at San Francisco, and Western General Hospital in Edinburgh, Scotland, were cited as presenting the first compelling data to indicate the particular strain of prion implicated in BSE is the same strain causing vCJD. By creating a genetically altered line of mice carrying prion protein genes from cows, the researchers successfully eliminated the “species barrier” thought to afford members of one species a degree of protection from prions derived from other species. Approximately 250 days after being inoculated with prions from diseased cows, the transgenic mice developed the disease.

A second group of mice inoculated with prions from the diseased mice became sick after a virtually identical period of time, confirming that transgenic mice transmit BSE prions with no detectable change of strain or properties specific to the species and attributable to the mice themselves. Inoculation of the transgenic mice with prions from human cases of the new form of Creutzfeldt-Jakob disease also produced the same incubation period and pattern of brain damage as inoculation with prions from diseased cows.

This is the first direct evidence that the BSE and vCJD are caused by the same strain of agent,” says Stephen DeArmond,

professor of neuropathology at UCSF. He and Stanley Prusiner, winner of a 1997 Nobel Prize for his work on prions, are the senior authors of the study. Lawrence Schonberger, a medical epidemiologist at the Centers for Disease Control and Prevention, says that while the study confirms suspicions, “we’ve been acting on this [assumption] since 1996 as if it were true.” Although BSE hasn’t been discovered in the U.S., the Food and Drug Administration and the U.S. Department of Agriculture have put in a series of firewalls to make sure cows and, in turn people, don’t become infected. The FDA has also banned blood donations from anyone who has spent 6 months or more in England since 1980, when diseased cows may have first begun infecting people.

What this study still does not prove, according to Scott Ratzan, author of THE MAD COW CRISIS: HEALTH AND THE PUBLIC GOOD, is that eating tainted meat is what gave people variant CJD, since the mice did not eat the infected tissue but had it injected directly into their brains. “It seems next to impossible right now to explain how people got the vCJD,” he says. “Some are vegetarians, some eat meat, some may have gotten it through transfusion.”

Innoculation of transgenic mice with prions from sheep with scrapie — another prion-related disease causing neurological damage — produced prions with dramatically different biological properties.

Material for this article was taken from a posting on the ProMED website (www.promedmail.com) which in turn was derived from Proceedings of the National Academy of Sciences, Vol. 96, Issue 26, Dec 21, 1999, with additional material from the Associated Press and ABC News. The full text of the NAS article can be accessed at www.pnas.org

Texas works to stem goat disease outbreak

Epidemiologists are trying to learn how a South Texas goat herd became infected with *Brucella melitensis*, a form of brucellosis associated with goats. The disease, known as ‘Malta Fever or “undulant fever,” can affect humans and livestock. It has not been diagnosed in Texas for a quarter century.

The scientists are also trying to determine if or where the bacterial disease has spread. The herd of nearly 120 goats and sheep has been depopulated and buried.

State officials are particularly concerned about *Brucella melitensis*, as it can cause serious illness in humans who consume unpasteurized milk or process meat from an infected goat without taking precautions.

The Texas Department of Health has notified physicians and public health clinics in South Texas to be alert for patients who may have contracted the disease, which produces flu-like symptoms. A simple blood test is used to diagnose the disease. Medical care and antibiotics are needed to treat the disease and prevent serious complications.

Mexico reported 6,500 cases of undulant fever in 1998, many of which can be traced to infected goats. During the same time, Texas recorded 16 cases, including 14 patients who had consumed goat dairy products.

Continued on page 7

On the Edge of Common Sense

By Baxter Black, DVM

The latest news is that the biggest hog producer in the U.S., Smithfield Foods, announced it will acquire Tyson's pork business as well as No. 2, Murray Family Farms. If both deals are approved, Smithfield's production will be 19 million hogs annually totaling 13% of the U.S. hog slaughter.

Where will all this end?

Update: Nov. 24, 2011. The state of Virginia has announced plans to purchase all the hogs in the Eastern time zone. If they complete the transaction, only the Iowa-Nebraska Family Hog Farm Corp. will be bigger.

Sept. 12, 2020. TTLWDSCo (TCI-TIME-LIFE-WARNER-DISNEY-SMITH ROPES COMPANY) has signed an agreement with Hogs-O-Plenty, formerly East-Central States Hog Combine, formerly Virginia-Iowa-Nebraska Affiliated Pork Producers which will give them 88% of the U.S. hog slaughter.

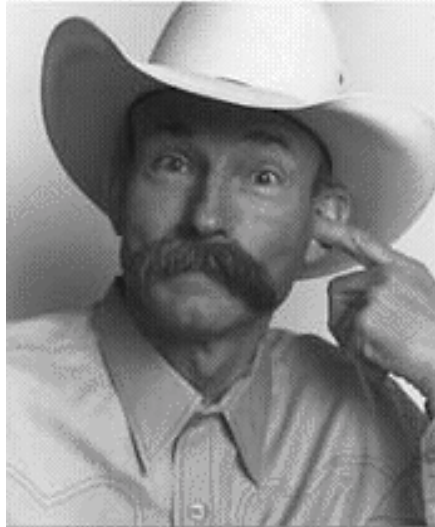
July 2, 2031. China and Canada are in a bidding war to purchase controlling interest in TTLWDSCo Microsoft Hog Consortium, which is now responsible for 56% of the hog production in the Western Hemisphere. China is putting up Taiwan as a down payment, while Canada is offering Quebec in trade.

Feb 14, 2049. In a surprise move, Japan has purchased United Pigs, which produces 84% of Earth's hogs and is moving them all to their new protectorate, Australia. The previous state of South Australia will become the wastewater lagoon, March 3, 2049. A maverick scientist in South Carolina today patented a new process. From a thimbleful of porcine tissue he has been able to grow pork muscle in a test tube. He predicts it will revolutionize the hog industry.

Jan. 31, 2055. Carolina Pork Co. has licensed Pig-in-a-Jar to market its test tube pork product. Pig-in-a-Jar will be offering the basic home pig starter. Like sourdough starter, it's kept in a refrigerated container. To prepare, the home economist must place the hormone catalyst and flavor choice (bacon, ham, ribs, chops) into the proper mold and leave it at room temperature. It grows about 2 ounces per hour.

Oct. 28, 2069. Cultivated Pork Products, previously Pig-in-a-Jar, now controls 13% of the U.S. consumer pork market.

Dec. 1, 2099. A hostile takeover of Cultivated Pork Products International occurred last week in Des Moines. The company provides 88% of the world's pork. The new company is calling itself Iowa Bottled Pork, or IBP for short.



Dog mortality rate up in California distemper outbreak

A widespread and long lasting epidemic of canine distemper in southern California is a reminder to veterinarians that this often fatal disease still presents a major health threat to pets and other animals.

A Ridgecrest, CA., animal shelter official said in early December that nearly 40 dogs had contracted the disease in the preceding 9 months. Only two animals survived with treatment – a near-95 percent mortality rate. Normally, the mortality rate is closer to 50 percent.

Although some dogs carry the virus without ever becoming ill, they can infect other dogs. All dogs are at risk because the disease is airborne and can be spread by animal waste. Infected animals may include stray dogs, raccoons, skunks, foxes and rodents.

The virus affects all canine breeds including coyotes but can remain dormant for as long as 3 weeks. The symptoms include three stages. The first stage includes low-level fever, poor appetite and discharge from eyes and nose. As these symptoms disappear, the second stage begins with high fever, yellow-green discharge, coughing and hardening of the foot pads. In the final stages, many dogs experience seizures, muscle tremors, paralysis, respiratory problems, depression and anorexia. Dogs experiencing symptoms generally die within 2 to 4 weeks of onset unless given early treatment.

Veterinary officials said distemper can be treated if caught early. Still, the best bet is to vaccinate pets. Annual vaccination is strongly recommended. Unvaccinated dogs require a series of preliminary shots before gaining immunity. Owners of unvaccinated animals should be cautious where they take pets and which animals they mingle with.

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Material for this article was taken with permission from the Dec. 10, 1999 issue of THE DAILY INDEPENDENT, Ridgecrest, CA.

Severe head deformity result of blastomycosis

By Amy Reese, D.V.M.

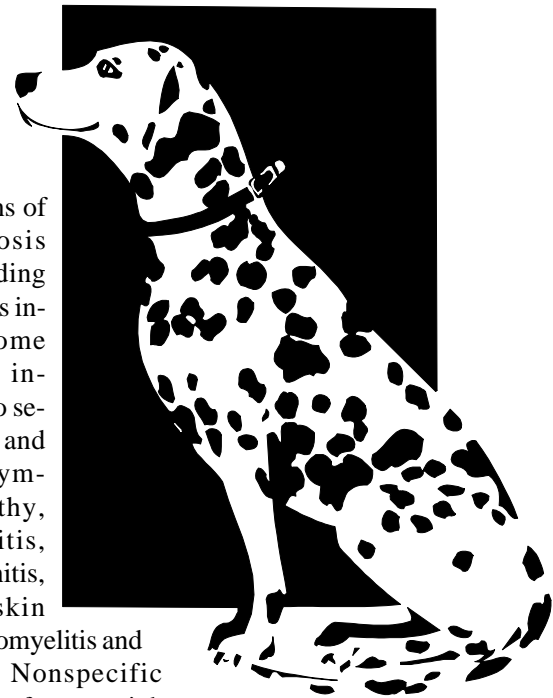
In December 1999, I was presented with "Speedo," a 5-year-old dalmatian. The primary complaint was a lameness and swelling of the left rear leg. Further history revealed inappetence for the past month and an ongoing eye infection. On physical exam, it was noted that the left rear tarsus was swollen and firm.

Speedo was thin, and the dog's head and face were severely misshapen. The occipital crest was enlarged and firm; the muzzle was swollen over the bridge of the nose, and the left eye appeared to be sunken, while the right eye protruded slightly. A radiograph of the left tarsus showed proliferation and lysis of the distal tibia and tarsus.

Due to financial restraints, the owners declined thoracic radiographs and blood profiles. A tentative rule-out list included neoplasia or osteomyelitis. The owners did agree to a bone biopsy of the left tibia.

When intubating, it was noted that the mid portion of the tongue was firm and swollen. The bone biopsy was routine. Histopathologic tests on samples sent to the Kansas State University Diagnostic Laboratory concluded osteomyelitis caused by *Blastomyces dermatitis*, a disseminated fungal disease. The owners weighed heavily the treatment option of Itraconazole, but it was cost prohibitive. The dog was euthanized. I will never forget the severe deformity of the head from the blastomycosis.

A systemic fungal disease, blastomycosis originates in the respiratory system and then disseminates to the eyes, skin, bones, and other organs. Transmission is by inhaling spores from infected soil. The disease is known to have a distinct geographic distribution, primarily in the Great Lakes region and the Mississippi, Ohio, and Missouri River valleys.



Clinical signs of blastomycosis vary depending on the organs infected. Some signs may include mild to severe cough and dyspnea, lymphadenopathy, conjunctivitis, uveitis, retinitis, ulcerated skin lesions, osteomyelitis and prostatitis. Nonspecific signs such as fever, weight loss, cachexia, inappetence and depression may occur. Most clinical signs are acute and if left untreated, a high percentage of patients with blastomycosis will die within four months.

Tissue biopsy is definitive for diagnosis, but thoracic radiographs, chemistry profile and a CBC will aid in classifying the severity of the disease. The treatment of choice is Itraconazole (5 mg/kg once daily for 3 months). Ketoconazole (10 mg/kg twice daily for 3 months) may be used, but is less effective and not cost beneficial. Monthly patient monitoring to follow resolution should include thoracic radiographs and chemistry profiles to monitor potential hepatotoxicity from medication. Statistically, 70 to 75 percent of treated cases will go into remission with a possible 15 percent chance of a relapse.

The author is a small animal practitioner at Missouri Valley Veterinary Clinic, Bismarck.

Hypernatremia a threat to neonatal elk calves

Farming of elk (*Cervus elaphus*) in North America has increased considerably since 1992. These animals represent a substantial financial investment; it appears that veterinarians are expected to develop a knowledge of husbandry as well as the medical and surgical problems associated with these livestock.

Diarrhea in neonatal elk calves is not uncommon. Farmers often treat ailing calves with oral administration of anti-

biotics and electrolyte solutions. In elk, diarrhea is significantly associated with hypernatremia. The mechanism is unknown, but hypernatremia is thought to be caused by severe water losses compounded by some degree of renal insufficiency and, in some instances, by administration of electrolyte solutions containing high quantities of sodium.

Treating elk calves for hypernatremia is labor intensive and difficult because of

the potential of iatrogenic cerebral edema. Rapid rehydration with hyperosmolar solutions, as is sometimes done in bovine calves, appears to be contraindicated in elk calves; therefore, it may be appropriate to use electrolyte solutions containing lower sodium concentrations than those used to treat bovine calves.

From the Jan. 1, 2000 issue of THE JOURNAL OF THE AMERICAN VETERINARY MEDICAL ASSOCIATION.

No CWD found in N.D. elk, deer herds

No sign of chronic wasting disease (CWD) has been found in North Dakota domestic elk and deer herds after two years of surveillance.

“More than 100 negative samples give us a high degree of confidence that CWD is not in North Dakota,” said Dr. Larry Schuler, the state veterinarian. “We will never be able to say with absolute confidence that CWD is not here, but North Dakota has been doing surveillance as long as any state has without finding the disease.”

CWD is a progressive, fatal disease of the nervous system of cervids (elk and deer). It is known as a transmissible spongiform encephalopathy, or TSE. Although the exact cause of CWD is unknown, it is believed to be caused by a prion, a disease agent smaller than a virus (see BSE story on Page 4). No treatment or vaccine is currently available for the disease, and no live animal test is available for the disease. It can only be diagnosed in the laboratory on specific sections of brain.



Schuler said North Dakota elk producers took a proactive approach by asking for a mandatory surveillance program after a positive diagnosis of CWD on a privately owned elk farm in South Dakota in December 1997. Since February 1998, North Dakota deer and elk owners have submitted 117 samples, all proving negative for CWD. The North Da-

kota Game and Fish Department has also submitted samples from deer and elk that displayed signs that could be consistent with CWD.

North Dakota producers own approximately 2,500 elk and deer.

CWD has been diagnosed in captive elk herds in South Dakota, Nebraska, Oklahoma, Colorado, Montana, and Saskatchewan. The disease was originally diagnosed in wild, free ranging elk and deer in northeastern Colorado and southeastern Wyoming in the late 1960s, but had never been reported in captive elk or deer until 1997 in South Dakota.

“Our goal is twofold,” Schuler said. “First, we want to know that the disease is not here; and second, we want to be able to take steps to keep it out of the state. The North Dakota State Board of Animal Health took precautionary measures to keep CWD out of the state by enacting rules to prevent the importation of elk or deer that may have been exposed to the disease.”

Texas works to stem goat disease outbreak

Continued from page 4

To avoid risk of human disease, goats should be tested before they are milked or processed for meat. Cooked meat is safe to eat. Ranchers who slaughter untested goats should wear face masks, glasses and rubber gloves to prevent the possibility of exposing themselves to bacteria that can become airborne during the slaughtering process. Clothing should be laundered after the processor has completed the task.

The infected goat herd was detected when a neighboring rancher sold a cow to slaughter. A routine blood sample was collected to test the cow for bovine brucellosis. After tests on the cow's blood and tissues showed “atypical” results, samples were forwarded to the National Veterinary Services Laboratory in Ames, IA, which confirmed *Brucella melitensis*.

Officials moved quickly to find the source of this cow's infection. Tests on the remaining animals in the rancher's cattle herd found a low titer in four animals, indicating likely exposure to melitensis. These cattle were depopulated and buried . . . the remaining disease-free cattle were shipped to slaughter.”

Other susceptible species – dogs, horses, cattle, sheep and goats – on the site and 10 surrounding ranches were tested without finding any more infected animals. After the search was broadened, the infected goat herd was found about a quarter-mile from the cattle herd. Investigators learned that the cattle rancher had bought cattle from the goat herd owner.

Testing in the area will continue to learn how the goats became infected. Thorough sales records were not maintained on the goats so tracing animal movements in and out of the infected herd will be difficult. Livestock or dogs from ranches near the infected goat herd have been have been tested by TAHC veterinarians and inspectors.

Why didn't the disease spread to animals that had fence-to-fence contact with the infected goat or cattle herds? *Brucella melitensis* causes nannies to abort once. Animals that come in contact with the aborted fetus can be infected. After the initial “abortion storm,” affected goats will not lose fetuses, even though they carry the disease for a lifetime. The bacteria is shed through milk, in newly born kids and in afterbirth, all products that pose greater threat to ranchers than to nearby animals.

Practitioners play role in control of FADs

Practitioners are on the front line of rapid detection and response to a foreign animal disease (FAD) or emerging disease. Be ready. There are a variety of opportunities for practitioners to increase their involvement including:

- Take advantage of available educational opportunities to refresh your knowledge on FADs.
 - ◆ Review the CD ROMs, distributed by the American Association of Swine Practitioners (AASP), with educational information on FADs of concern for swine.
 - ◆ Watch for information from the AASP Foreign Animal Disease Committee. Provide your clients with producer educational information developed by the Joint NPPC/AASP Biosecurity Working Group.
 - ◆ Show the FAD video that will be available from USDA's Animal and Plant Health Inspection Service to emphasize the importance of biosecurity measures for domestic and foreign animal diseases.
- Keep the possibility of a FAD or emerging disease in your diagnostic differentials.
 - ◆ Work within your state to ensure there is adequate planning for FADs and emerging diseases.



- ◆ Ask your state or federal animal health officials to review their responses to the state self-assessment survey, and see how you can help address identified gaps.
- ◆ Continue to work with your state to meet the Standards for State Animal Health Emergency Management Systems.
- Educate the public and Congress that investing in FAD and emerging disease prevention is in the best interests of protecting the efficient, inexpensive food supply currently available to U.S. and international consumers.

Beth Lautner, DVM, vice president of science and technology for the National Pork Producers Council, presented this information at the 1999 Leman Swine Conference in Minneapolis. It was reprinted in the Fall/Winter 1999 issue of **SWINE HEALTH REPORT AND EPIDEMIOLOGY**, published by the Livestock Conservation Institute.

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North Dakota Board of Animal Health
600 E. Boulevard Ave., Dept. 602
Bismarck, ND 58505-0020

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