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The Food Safety Division of Alberta Agriculture and Rural Development publishes the Animal Health Forum quarterly to inform readers of division activities and bring attention to agri-food issues with food safety and market access implications.

**Editors:**
Joan St. Amand, Food Safety Division, Airdrie AB
Phone: 403-948-8575; E-mail: joan.st.amand@gov.ab.ca

Jagdish Patel, Food Safety Division, Edmonton AB
Phone: 780-644-5093; E-mail: jagdish.patel@gov.ab.ca

Please direct all inquiries to Joan or Jagdish.

*We wish you a Happy and Healthy 2009 from the Food Safety Division of Alberta Agriculture and Rural Development*

## In This Issue



# Commentary

## The Alberta Livestock and Meat Strategy

It is clear that Alberta's beef and hog industries are struggling financially. Other red meat sectors are also frequently facing difficult economic issues. A combination of higher input costs, reduced market returns, and segregation and discounting of Alberta livestock and meat products due to Mandatory Country of Origin Labeling (MCOOL), have pushed several sectors in our livestock industry into a very difficult position.

After noticing that many of our global competitors were doing much better than we were in terms of growing their market share and increasing their returns, and after significant industry input, our Minister, the Honourable George Groeneveld announced the Alberta Livestock and Meat Strategy on June 5, 2008. The idea behind the strategy is that only through a systematic approach which includes every part of the value chain working together, can we pull ourselves successfully back into a competitive position.

The Strategy will have some specific and positive implications for the animal health and food safety sector. One of the key components of the Strategy is to increase the value of Alberta products through differentiation or branding. Part of that branding would include a suite of on-farm food safety programs and product traceability, which combined with other environmental and quality parameters, will likely create a higher-end brand for our products. This will entail strengthening our surveillance and diagnostic capacity; implementing on-farm food safety programs which require periodic on-farm audits; and, an understanding of where world trade is moving on sanitary and phyto-sanitary issues so that we can be a step ahead and derive more value for our products. We are currently discussing details of these

system improvements with stakeholders. I know that our Director of Food Safety Division, Greg Orriss and our Chief Provincial Veterinarian, Dr. Gerald Hauer would welcome further discussion with you on these issues. Another useful contact would be Dr. Sandy Honour, who has been temporarily seconded to the Alberta Livestock and Meat Agency. We invite you to share your thoughts and suggestions with them.

By working together and building together, we can regain our competitive position. More importantly, we can develop the intellect, infrastructure and products that will create the platforms that enable us to become the best livestock and meat industry in the world.

*John Knapp, Deputy Minister*
*Agriculture and Rural Development*

# Surveillance/Research Update

## Scrapie Surveillance Program Update

*Dr's. Brian Miller, Veterinary Pathologist, Alberta Veterinary Surveillance Network (AVSN) and Hernan Ortegon, Program Veterinarian with the Office of the Chief Provincial Veterinarian, Edmonton, AB, Joan St. Amand, Senior Laboratory Technologist, Food Safety Division, Airdrie, AB*

The Alberta Scrapie Surveillance Program conducted by Alberta Agriculture and Rural Development (ARD) has been a success thanks to the response from sheep and goat producers all over Alberta. This participation has resulted in valuable provincial Scrapie Surveillance information as well as morbidity and mortality information for the carcasses submitted. A summary of the causes of morbidity and mortality will be communicated to the industry associations and sheep and goat producers following completion of the pathology study. To date, a positive case has not been detected, supporting that Alberta is either free of the disease, or that the prevalence is very low.

ARD's Scrapie surveillance testing contributes to the Canadian Food Inspection Agency's (CFIA) National Active Scrapie Surveillance statistics. The results of Scrapie testing conducted at ARD's Laboratory are accepted by the CFIA for producers enrolled in the National Voluntary Scrapie Flock Certification Program. A credible National Scrapie Surveillance Program will assist the CFIA in future negotiations with the United States Department of Agriculture to re-open the United States border to the exportation of Canadian small ruminants over one year of age.

We encourage sheep and goat producers to continue to submit the carcasses (preferably) or heads of all sheep and goats 1 year of age and older that die on the farm to one of the four ARD laboratories (Edmonton, Airdrie, Lethbridge, Fairview), as part of ARD's Scrapie Surveillance Program. Carcasses must not be severely decomposed or scavenged. Based on last year's numbers, we anticipate reaching our target number of animals by early February, 2009. As we draw closer to that date, please contact your local office to ensure program availability.

*Inquiries about ARD's Scrapie Surveillance Program can be directed to Dr. Brian Miller at (780) 427-8201 (brian.miller@gov.ab.ca); Dr. Hernan Ortegon at (780) 644-2148 (hernan.ortegon@gov.ab.ca)*

### Progress to date:

**Table 1: Number of sheep and goat submissions from regional labs or Meat Inspection for Scrapie testing for the period September 1st 2007 to October 31st 2008.**

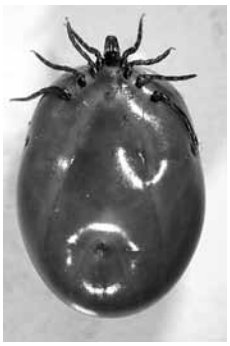
| Regional Lab. | Fairview | Edmonton | Airdrie | Lethbridge | Meat Inspection | Total |
|---|---|---|---|---|---|---|
| Sheep | 12 | 44 | 89 | 20 | 6 | 171 |
| Goat | | 6 | 4 | 7 | 2 | 19 |
| Total | 12 | 50 | 93 | 27 | 8 | 190 |

**Table 2: Number of sheep and goat submissions for post mortem method comparison study for the period September 1st 2007 to October 31st 2008.**

| Regional Lab. | Fairview | Edmonton | Airdrie | Lethbridge | Total |
|---|---|---|---|---|---|
| Sheep | 9 | 20 | 71 | 16 | 116 |
| Goat | | 6 | 4 | 7 | 17 |
| Total | 9 | 26 | 75 | 23 | 133 |

## Ticks and tick-borne pathogens in Alberta

*Daniel Fitzgerald, Agri-Food Laboratories Branch, Food Safety Division, Edmonton, AB*



Daniel Fitzgerald, a graduate student at the University of Alberta, is doing research on ticks and tick-borne pathogens in cattle-producing areas of Alberta. His plan involves collecting ticks, from grazing pastures in our province, and directly from cattle. To expedite the collection process, he would like to collect the ticks during the fall processing of cattle for vaccination, pregnancy diagnosis and other production related processes. A blood sample will be obtained from the animals examined for ticks. To carry out the sampling for his study, he needs the help and cooperation of veterinarians who are willing to allow Daniel to enroll these farms.

The goal of this research is to identify areas of the province that are at risk for the transmission of tick-borne pathogens to cattle. The pathogens focused on in this study are *Anaplasma marginale*, the rickettsial bacteria which causes Anaplasmosis in cattle, and *Borrelia burgdorferi*, the spirochete that causes Lyme disease. Testing for other tick-borne pathogens may be conducted based on resources available. This research will also identify geographic distribution of the tick species present in cattle producing areas of Alberta, serving as a baseline to track future changes.

Veterinarians will help select cattle producers who would be willing to allow researchers access to the property to remove ticks off their animals and/or allow access to their pastures to collect ticks. All producer and veterinary identification information will be kept strictly confidential.

Veterinarians will be involved in collecting blood samples while the cows are examined for ticks. Collected blood samples will be tested for the presence of (or exposure to) above mentioned tick-borne pathogens. The collected ticks will be identified and then tested for the same pathogens. Veterinarians will be offered an honorarium for the on-farm sample collection and supplies for the blood sampling will be provided.

Once all the data has been collected and analyzed, the results of the research will be shared with participating veterinarians and producers. The research will also be published in a scientific journal.

*Please contact Daniel with any questions and pass on this request to any of your colleagues that you believe may be interested. Daniel Fitzgerald, 780 415 2705, dtf2@ualberta.ca*

# Disease Impact

## Infectious Laryngo-Tracheitis (ILT) in Alberta's Backyard Poultry Flocks

*Narine Singh, Food Safety Division, Edmonton, AB, Dr. Hernan Ortegon and Dr. Gerald Hauer, Office of the Chief Provincial Veterinarian (OCPV), Edmonton, AB*

ILT is a highly contagious herpes virus infection of chickens, pheasants and peafowls; characterized by severe respiratory distress and bloody tracheal exudates. Other clinical signs include coughing, sneezing, head shaking to dislodge exudates, extension of the neck and open mouth breathing. Inhalation produces a wheezing sound, and severe respiratory distress worsens into asphyxiation from which many die. The incubation period is from 2 – 12 days, and the course of the disease is 7 to 14 days.

The ILT virus survives for long periods in expectorated tracheal clots and in dead birds. The virus remains viable when frozen in organic material, but is easily destroyed by disinfectants or direct sunlight. Virulence varies with the strain. Chickens 14 weeks and older are more susceptible than younger ones, but certain strains of the virus are able to adapt to a younger host, and is sometimes referred to as a "hot broiler-ILT virus".

Transmission is via direct bird-to-bird contact or contact with infected tissues, dead birds, and contaminated buildings. Because ILT is caused by a herpes virus, exposed birds can harbor the virus in nervous tissue and be clinically normal until a stressful event causes the virus to recrudesce. Recovered chickens remain carriers for as long as 24 months. The probable primary culprit in the spread of the virus is through the purchase of carrier or sick birds. ILT appears to be more of a problem in backyard poultry flocks. Also, the virus may be harbored in specialty poultry, e.g. exhibition birds, hackle strains, and game-fowl.

**ILT – Summary of the 2008 season.**

The disease continues to be a threat to the Alberta poultry industry and has been diagnosed in three backyard flocks to date this year (around 1600 exposed birds). In two cases, the virus appeared to have been spread through birds traded at a livestock auction whereas in the third case, the virus was apparently introduced with purchase of laying birds from a neighbouring flock. In all three cases, the resident susceptible birds in the flock who were from commercial strains of broilers and layers developed the disease shortly

after the introduction of infected but clinically healthy birds from backyard poultry flocks. Mortality was in the range of 30-40%.

To prevent recovered birds from becoming carriers of the ILT virus, the producers chose to voluntarily depopulate. All three flocks were destroyed and the carcasses were burnt on farm in order to eradicate ILT virus from the farm and to prevent further spread of the disease.

**The important role of private practitioners.**
During the three ILT outbreaks this season, veterinarians not only recognized the clinical signs, and provided presumptive diagnoses, but they also harvested the targeted organ – the trachea – for testing by the Food Safety Division. They reported the suspect flocks to the Office of the Chief Provincial Veterinarian (OCPV), and provided biosecurity recommendations to the producers to contain the threat until confirmation of the diagnosis. The immediate recognition of this disease was crucial (even in the suspect stage) for a rapid response, which alerted producers, enhanced biosecurity measures and reduced the risk of virus spread to other poultry flocks. A team from OCPV visited each site to observe and record clinical signs and mortalities, collect more samples, assess current biosecurity measures and conduct preliminary trace back.

Education of the producer on the virulence of the disease and the potential risk to other poultry was an essential part of this visit. Within four days of the initial report to the OCPV, the affected flocks were destroyed and properly disposed. Detailed trace back investigation to determine the source of the virus was conducted by investigators from Regulatory Services Division of ARD. Follow-up advice included recommendations for clean-up and disinfection of the premises, how to prevent introduction of the disease and other related biosecurity measures.

**Private Veterinary Clinics – Essential Partners.**
Because of their front line role as the eyes and ears across the province, private veterinary clinics provide a significant advantage in the prevention and control of ILT. If ILT is suspected, it must be reported to the Office of the Chief Provincial Veterinarian. For further information, please see: "Infectious Laryngotracheitis (ILT) in Poultry"; Agri-Facts; Agdex 663-36, June 2008.

## Case Study Presented at Western Conference of Veterinary Diagnostic Pathologists

*Dr. Jan Bystrom, Veterinary Pathologist, Alberta Agriculture and Rural Development, Airdrie, AB, Dr. Ted Clark, C.A.R.E. Centre Animal Hospital, Calgary, AB*

**Case Introduction**
Two Holstein fetuses aborted in fresh state at 8 months gestation; both were embryo transfers and implanted from the same flush into two dams. Dairy herd is well managed, well vaccinated and well fed. Gross necropsy was unremarkable except for a myocardial tear of unknown origin in one fetus.

**Gross Findings**
Both fetuses were aborted in fresh state. Both were small and fine-boned, weighing about 40 pounds, with no growth arrest lines seen. Postnatal breathes had not been taken. Thymus was obvious and well developed in both. One fetus had a full thickness myocardial tear in the left ventricular free wall, approximately 4 cm. long.

**Histopathology**
THYROID GLANDS: Lesions were seen in glands from both fetuses. One fetus showed complete lack of recognizable colloid within follicles. Follicles were lined by swollen cuboidal epithelial cells with pale wispy eosinophilic to vacuolated cytoplasm and intact but occasionally mildly pyknotic nuclei. Epithelial cells were sloughing into follicular lumens. The other fetus showed marked degenerative to necrotizing change with loss of acinar follicular architecture. Epithelial cells were sloughed with little recognizable basement membrane remaining. Cells had pale eosinophilic cytoplasm and nuclear changes varying from intense basophilia and shrinkage (pyknosis) to breaking apart to form small fragments of nuclear dust (karyorrhexis). Large irregular lakes of intensely basophilic material the size of 2-3 nuclei were also seen (nuclear aggregates).

**Ancillary Tests**
Special stains used to visualize lipofuscin were consistently negative in thyroid glands with this appearance. These included the more specific lipofuscin stains, like Schmorl's, and less specific stains that may also help visualize lipochrome pigment, e.g. PAS and Fontana-Masson stains.

**Morphological Diagnosis**
Thyroid follicular epithelial degenerative to necrotizing change and sloughing with absence of colloid

**Etiological Diagnosis**
Unknown

**Comments**
The Western Canadian Beef Productivity Study (WCBPS) was done as a component of a larger study, Western Canada Study of Animal Health Effects Associated with Exposure to Emissions from Oil and Natural Gas Field Facilities. During the WCBPS, a very comprehensive set of tissues from calf death losses were examined histologically by Dr. Ted Clark. Almost 1700 cases were examined, including 183 abortuses, 560 stillborn calves, 388 neonates and 558 calves > 3 days of age. Degenerative changes with or without necrosis that could not be attributed to autolysis were seen in thyroid glands of 16% of abortuses, 27% of stillborns, 22% of neonates and 17% of calves > 3 days of age[1]. Stillborn calves were significantly more likely to have lesions than neonates.

Calves from young cows compared to older cows were less likely to have thyroid lesions. Liver selenium status was significantly associated with the odds of thyroid lesions. However, there was no clear relationship between increasing concentrations of liver selenium and decreasing odds of thyroid lesions. There was no association between liver vitamin E, copper or molybdenum status and thyroid lesions. Body condition score of the dam at pregnancy check and whether or not the birth was assisted were also not associated with thyroid lesions[2].

References describing degenerative lesions with striking similarities to those seen in this series of calves have appeared in the human medical literature for many years[3, 4]. Controversy has centered on the significance of desquamation of cells into follicular lumina which many have considered a postmortem artifact. Some authors contend that degenerative changes that involve loss of colloid and follicular collapse are manifestations of normal hyperactivity as the thyroid gland undergoes a period of intense physiological activity to assist the newborn in adapting to extra-uterine life. There have been no associations made between maturity, age or sex of the fetus or between the presence or absence of pre-eclampsia, difficult labour or asphyxia and the thyroid lesions described. However, it remains unclear whether or not changes seen are pathological in some instances.

**References**


1. Western Interprovincial Scientific Studies Association. Research Appendices: Western Canada Study of Animal Health Effects Associated with Exposure to Emissions from Oil and Natural Gas Field Facilities: A Study of 33,000 Cattle in British Columbia, Alberta and Saskatchewan. January, 2006. [homepage on the internet]. Available from: http://www.wissa.info/index.html Last accessed 9/7/2008.
2. Dr. Cheryl Waldner, pers. comm.
3. Sclare G. The Histological Structure of the Thyroid in the Newborn. Scot Med J 1956;1:251-258.
4. Sagreiya K, Emery JL. Perinatal Thyroid Discharge: A Histological Study of 1225 Infant Thyroids. Arch Dis Child 1970;45:746–754.



*E-mail: jan.bystrom@gov.ab.ca*


# Policy Updates

## Prevalence of *Salmonella* in poultry flocks


*Dr. Colleen Annett, Veterinary Pathologist, Food Safety Division, Airdrie, AB*


In various jurisdictions across Canada, the prevalence of *Salmonella* in broiler breeder and turkey breeder flocks has increased since 2004. *Salmonella* Enteritidis (SE) PT8 is the most prevalent form of *Salmonella* isolated from broiler breeder chickens in Alberta and other parts of Canada. In recent years, however, SE PT13 has been identified from fluff samples collected at various hatcheries where imported eggs were hatched. More importantly, in some regions, this serovar has been identified in local flocks.

There is a report out of the USA that traces human salmonellosis back to poultry meat. In two recent human outbreaks in BC (over 100 people affected in August 2007), both SE PT13 and SE PT8 were identified. These same serovars were also identified in fluff samples from hatcheries at the same time that the outbreak was occurring. While the definitive source was not found in either of these outbreaks, the consumption of poultry meat and ungraded hatching eggs was suspected. At the same time that human illness was occurring with SE PT8, diagnostic samples in sick or dead poultry also yielded this organism. SE is typically not a bacterium that causes clinical disease in poultry, but it now appears that is changing.

Press releases from the Public Health Authorities did not draw a specific link to chicken products. Continued coincidental observations such as these, however, could have an enormous impact on public perception and, subsequently, on the poultry industry.

We are requesting the input from numerous well-versed poultry professionals to devise a *Salmonella*-control policy for poultry that would be effective and applicable throughout the Western provinces. The policy encompasses the following goals:

1. To reduce the prevalence of *Salmonella* (particularly SE, *Salmonella* Typhimurium (ST) DT104 and *Salmonella* Heidelberg (SH)) from broiler breeder, turkey breeder, duck breeder, goose breeder flocks.
2. To eliminate the import of *Salmonella* contaminated hatching eggs.
3. To reduce the prevalence of *Salmonella* from chicks, poults, ducklings and goslings that are destined to become meat.
4. To reduce the potential risk of *Salmonella* contamination in all poultry meat.

We believe that together, we can develop a policy for the poultry industries that would effectively reduce or even eliminate targeted *Salmonella* from our poultry flocks.

*E-mail: colleen.annett@gov.ab.ca*

# Food Safety Division Highlights

Sarah Turner was the successful applicant in the competition for the Head of Epidemiology, Toxicology and Surveillance Support Section. Sarah has been an acting manager in the Agri-Food Systems Branch (AFSB) and this now formalizes her role as a permanent member of the Branch Leadership Team.

**Other appointments include the following:**

- Norine Best is now Head of Chemistry Section, Agri-Food Laboratories Branch (AFLB).
- Dr. Gerald Hauer has been appointed Chief Provincial Veterinarian.
- Dr. Gerald Ollis will be focusing on the Alberta Animal Health Act and the National Farmed Animal Health Strategy until his retirement next spring.
- Dr. Ole Sorensen is now acting Head of Agri-Food Laboratories Branch.
- Dr. Val Bohaychuk and Margaret McFall are sharing management responsibilities in the Biology Section, AFLB.
- Daryl Loback and Betty Vladicka are sharing management responsibilities in the Safe Food Assurance Systems, AFSB.
- Dr. Jag Patel is now acting Head of Livestock Health for Market Access, AFSB.

# Chief Provincial Veterinarian Update

## Changes to the Canada and Alberta BSE Surveillance Program

The Canada and Alberta BSE Surveillance Program (CABSESP) tests cattle from 30 to 107 months of age that meet the Program Conditions assessed by a certified veterinarian, based on a clinical examination, history and producer records. On July 1, 2008 the CABSESP implemented a number of changes to improve its efficiency and to align with the guidelines of the World Animal Health Organization (OIE) for BSE surveillance.

**Certified Veterinarians**

The new program conditions require that a clinical examination be performed in live animals and a postmortem be conducted on all dead animals. This task, therefore, requires veterinary involvement. As a result, after July 1, 2008 only veterinarians that are certified by the CABSESP can examine the animal and assess the animal/herd/producer for eligibility. In order to have consistent and clear standards within the veterinary community, the CABSESP conducted a certification program with licensed veterinarians who signed to participate in the program. The intent of the certification program is to train veterinarians in the current eligibility criteria for the CABSESP and to implement consistently the existing rules and regulations in different situations.

**Eligible Cattle**

Cattle are eligible under the CABSESP, if they are located in the province of Alberta. Animals with ages equal to, or greater than 30 months, are eligible if the age can be verified either by credible records or by dentition. For animals between 60 to 107 months (inclusive) the age may be determined either by farm records, ear tags, tattoos or by the degree of wear of the incisors, which should agree with the information provided by the owner/farmer. Cattle coming from herds/farms where starvation, mismanagement or animal welfare situations are occurring are not eligible for the program. Cattle dying in groups for different reasons are also not eligible. The following are clinical categories that may be associated with BSE and are accepted for the CABSESP:

- Neurological: cattle, of any body condition score (BCS), exhibiting abnor malities in at least two of the following categories: locomotion (weakness, ataxia, change in gait, abnormal head carriage, and circling), sensation (hypersensitivity, kicking, head shyness, and blindness), or mentation (apprehension, nervousness, aggressiveness,

teeth grinding, and change in behavior) that a veterinarian could directly attribute to a central nervous system (CNS) abnormality, or

- Diseased: cattle that have progressively lost body condition, exhibit and/or have a history of a chronic and progressive disturbance in at least one of the following: locomotion, sensation, or mentation, has not, or is not likely to respond to treatment and the disease not been directly attributed to a CNS abnormality by a veterinarian, or
- Distressed: Acutely ill or injured cattle presented for on farm emergency slaughter. Must be examined by a veterinarian, before euthanasia, or
- Non-Ambulatory: The animal has been down or disabled for at least 24 hours and has not, or is not likely to respond to therapy and is unable to get up and/or walk without assistance, or
- Dead: the animal is found dead from undetermined causes

**Not Eligible Cattle**:

- Rabies suspects or BSE suspects (cattle showing three or more different neurological signs). These animals, independent of age, must be referred to the Canadian Food Inspection Agency (CFIA) for testing.
- Cattle affected by starvation, malnutrition due to neglect or mismanagement. Also, not eligible are those cattle that are subject of an animal welfare investigation, or were euthanized directly by the owner without allowing a previous assessment by a certified veterinarian.
- Animals dying in groups as a result of an obvious or known cause.

**Eligible Sample**
An eligible sample is the brainstem; the sample may be moderately decomposed as long as its morphology allows for identification of the obex by laboratory personnel.

**Eligible Applicant**
An eligible applicant is an Alberta taxpayer having lawful possession of the animal for at least 30 days and has provided adequate food, water, shelter, and veterinary care (if required) to the animal. The applicant is not eligible if he/she is under investigation for animal welfare issues, or has used the carcass for human or animal food.

The following table lists some examples of common conditions presented to veterinarians and information about whether or not they qualify under the CABSESP.

This list will be amended as other conditions are brought to our attention. If you would like to suggest a condition, please contact Dr. Hernan Ortegon, Program Veterinarian with the Office of the Chief Provincial Veterinarian.

| Does it Qualify? | Qualify or Not? |
|---|---|
| **Condition** | **Criteria For Eligibility** |
| **Post-surgical death** | The 7-day week rule applies: those animals dying within the first week post surgery are not eligible. |
| **Obstetrical conditions and calving injuries leading to sick, downer or dead animals** | |
| • Prolapsed uterus<br>• Dystocia<br>• Retained placenta<br>• Vaginal or rectal prolapse<br>• Emphysematous fetus<br>• Uterine tear/rupture<br>• Hydropic fetus<br>• Non deliverable calf | The conditions mentioned do not qualify.<br><br>However, for calving downers not having any of the listed injuries, the 4-day rule applies: a 4-day period is allowed to provide treatment to these animals. If after this period, they did not respond (or are not likely to respond) to therapy, then they become eligible. |
| **General conditions** | |
| • Cancer eye<br>• Foot rot<br>• Lump jaw<br>• Emaciated cattle | Do not qualify, unless they have history and signs strongly suggesting BSE. |
| **Downers** | Downers (other than post calving downers) are eligible after 24 hours of being down, or they may be eligible immediately if in the opinion of the certified veterinarian, they are not responding, or not likely to respond to therapy. |
| **Unexpected massive deaths** | |
| • Poisoning<br>• Disease outbreak<br>• Starvation<br>• Lightning<br>• Drowning<br>• Car/barn accidents, etc | Do not qualify. When a larger than usual number of, otherwise healthy animals, die in a short period of time by accidental, nutritional, toxic or infectious causes. |
| **Herd conditions** | |
| • Johne's disease<br>• Mastitis<br>• Lameness/arthritis<br>• Grass tetany<br>• Bloat | When the animal, or group of animals, come from a herd that has a recognized ongoing problem as main cause of its clinical condition, such as Johne's or continuous mastitis episodes due to management issues, then the animal/herd does not qualify. An exception to this rule occurs when an animal is not affected by the herd condition, but it has signs suggesting BSE, then it is eligible.<br><br>Individual cases coming from herds that have not been previously recognized with this condition are eligible. |

# The Latest Info

## Shipping of Infectious Substances

*Joan St. Amand, Senior Laboratory Technologist, Food Safety Division, Alberta Agriculture and Rural Development, Airdrie, AB*

An infectious substance is defined by Transport Canada as one that is "*known or reasonably believed to contain viable micro-organisms such as bacteria, viruses, rickettsia, parasites, fungi and other agents such as prions that are known or reasonably believed to cause disease in humans or animals and that are listed in Appendix 3 to Part 2, Classification, or that exhibit characteristics similar to a substance listed in Appendix 3.*"

Link to Appendix 3: http://www.tc.gc.ca/tdg/clear/part2.htm#app3

Transportation of infectious substances within Canada falls under the Transportation of Dangerous Goods Regulations (TDGR) administered by Transport Canada. Amendment 6 of these regulations published by Transport Canada was posted February 20, 2008. This amendment served to align the TDGR with current International Civil Aviation Organization (ICAO) Technical Instructions and International Air Transport Association (IATA) regulations.

**Reclassification of infectious substances**

Essentially, Amendment 6 repeals the definitions "diagnostic specimen" and "risk group" and reclassifies infectious substances into two categories, A and B which are listed in Appendix 3 of the TDG regulations. Category A includes United Nations number UN 2814 Infectious substances affecting humans and UN 2900 Infectious substances affecting animals only. It is important to note, however, that as new diseases emerge, additions to Category A may be made. At this point in time, many specimens sent by veterinary clinics will fall under Category B. Therefore shipments to labs, clinics, and agencies containing a specimen for testing will be classified a dangerous good and in this case shipped under UN 3373 as a Biological Substance, Category B.

**NOTE**: There is an exception to infectious substances which is found in Section 1.42 of Amendment 6 of the regulations; please review at the following link:

http://canadagazette.gc.ca/partII/2008/20080220/html/sor34-e.html

**Packaging and shipping**

Specimens sent as Biological Substance, Category B must be packaged according to IATA Dangerous Goods Packing Instruction (PI) 650. The primary packaging must be leak proof (for liquid specimens) or sift proof (solid specimens). Secondary packaging must be leak proof and the outer packaging rigid. The packaging must be capable of passing a 1.2m drop test. For the liquid specimens, the primary receptacle or secondary packaging must be capable of withstanding an internal pressure of 95kPa. Absorbent material must be placed in the shipping container in case of spills. There are also specific labeling and packing requirements. Infectious substance, Category A specimens have additional packing and labeling requirements and must be shipped as PI 602.

**Canada Post states that infectious specimens must not be sent by regular mail.**

**Training**

The regulations require that anyone handling, shipping or receiving dangerous goods possess a valid Dangerous Goods Training Certificate or be under direct supervision of a person possessing a certificate. Training must updated every two years for shipping by air, and every three years for shipping by ground.

**References**

1. SafTPak, Shipping Class 6.2 Dangerous Goods, Biological substances and Dry ice
2. http://www.tc.gc.ca/tdg/clear/overview.htm
3. http://www.phac-aspc.gc.ca/publicat/lbg-ldmbl-04/ch10-eng.php

*For further information, please contact Joan St. Amand at 403 948 8579 or email: joan.st.amand@gov.ab.ca*