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Plants**Proactive Disclosure****REPORT ON THE INVESTIGATION OF THE NINTH CASE OF BOVINE SPONGIFORM ENCEPHALOPATHY (BSE) IN CANADA****Background**

Between January 20 and 22, 2007, a bull on a commercial beef farm in northern Alberta died after having experienced a loss of body condition over the course of the winter. A private practitioner sampled the animal under Canada's National BSE Surveillance Program on January 24, 2007. Brain samples were received by the Alberta Agriculture and Food (AAF) Laboratory on January 29, where they were screened for BSE using a Bio-Rad rapid test. The preliminary test results received on January 30, 2007, did not rule out BSE. In accordance with the prescribed testing protocol, the test was repeated on January 31 and produced a second reaction. Brain samples were then sent to the National BSE Reference Laboratory in Lethbridge, Alberta, where rapid screening tests validating these results were performed. BSE was confirmed by the Scrapie Associated Fibril (SAF) immunoblot procedure with monoclonal antibody 6H4 on February 7, 2007. This method had been chosen as the main confirmatory test because of poor tissue quality (autolysis and freezing artefact). Immunohistochemistry was also performed for additional confirmation and was positive on February 7, 2007. The carcass was secured from the farm, transferred to the AAF laboratory and incinerated. No part of the carcass entered the human food supply or animal feed chain.

The CFIA immediately initiated an epidemiological investigation based on the most recent World Organization for Animal Health (OIE) recommended BSE guidelines. Specifically, the CFIA investigated:

- the birth cohort (all cattle born in the same herd as, and within 12 months of, the birth of the BSE-positive animal);
- the feed cohort (all cattle which, during their first year of life, were reared with the BSE-positive animal during its first year of life, and which investigation showed consumed the same potentially contaminated feed during the period); and
- feed to which the animal may have been exposed early in its life.

Animal Investigation

The producer identified the positive animal as an unregistered Angus bull 79 months of age at the time of death. The animal was born on the farm and remained there throughout its life. The bull had been losing condition over the course of the winter and died from undetermined causes. A private veterinary practitioner attended the premises to determine if the animal met the inclusion criteria of Canada's National BSE Surveillance Program. A post-mortem examination could not be performed because the carcass was frozen, but the animal was assessed as having a body condition score of one (emaciated) and arrangements were made to forward appropriate samples for laboratory evaluation.

In an effort to corroborate the producer's recollection of the animal's origin and age, samples for DNA analysis were obtained from animals on the premises that were identified by the owner to be the sire and dam of the affected bull. The DNA results confirmed the parentage of the case animal and, therefore, that it was a

home-bred animal as described. This demonstrated that the farm of origin was also the birth farm of the positive animal.

The dam of the positive animal, located on the birth farm, was demonstrated to have been born in 1998 according to the producer's tagging system. This indicated that her first calf - the positive bull - was born as part of the spring 2000 calf crop, which corroborated the producer's recollection.

The birth and feed cohort comprised 593 animals that, along with the positive animal, were born or raised on the farm. This includes animals born in the entire 1999, 2000 and 2001 calving seasons. It also includes additional animals sold from the farm that cannot be distinguished from the cohort based on their description at the point of sale. The trace-out investigation of the cohort identified 57 live animals retained by the producer. These animals are currently quarantined on the producer's premises pending a final decision on the timing of their disposition. In the event that any of the animals are not destroyed immediately, but retained under official control until after calving or to the end of their productive lives, their carcasses will be excluded from the food and feed chains on their death or destruction in accordance with the norms prescribed in the OIE International Terrestrial Animal Health Code (2006). The following is the disposition of the remaining 536 animals in the cohort:

- 411 animals were traced and confirmed to have died or been slaughtered.
- 49 animals were traced and presumed to have died or been slaughtered.
- One animal was traced and confirmed to have been exported and the importing country has been notified.
- Tracing of the remaining 75 animals is expected to be completed by the end of March (the outcomes of the remaining traces will not change the epidemiological profile of the investigation, but will achieve the objective of eliminating any living cohort animals from the food and feed systems as per OIE guidelines). A final summary of cohort dispositions will be posted when the remaining traces have been completed.

Feed Investigation

The feed investigation focussed on feeds to which the animal may have been exposed during its first year of life. Review of the manufacture, transportation and handling of these feeds did not demonstrate a link between production practices for a specific product and potential cross-contamination with prohibited material.

Other species present on the farm included horses, dogs, and cats. On-farm mixing and delivery equipment consisted of a portable mix mill used to combine ground grain with commercial products and a mixer wagon used to combine forages with grain. Feed products available to the horses were the same as the commercial farm operation - no special products were purchased for them. Cat and dog food products were purchased and presumed to have contained prohibited material. These products were stored and fed in the house since 1999 and were not available to be accessed by the index case.

All identified feed products to which the BSE-positive animal had access were products intended for feeding to ruminants and consisted of farm-grown or purchased grains and forages, as well as commercially prepared feed products. Commercial products included frequent purchase of trace mineralized salt and intermittent purchase of other mineral, limestone, protein supplement, molasses, vitamin premix and a complete feed.

The case animal was moved from a pen to pasture shortly after birth and remained on pasture until weaned at approximately six months of age. While on pasture, the animal also had access to mineral and trace mineralized salt. The animal was weaned into a pen where it remained until approximately 10 months of age, prior to returning to pasture. Feeds available during this time included forages and barley mixed on-farm with limestone, trace mineralized salt, and vitamin premix. Other products that the animal may have accessed included a

32% protein supplement and a complete feed.

Commercially prepared products were either purchased directly from a manufacturer or from a retail supplier that purchased from various manufacturers concurrently. The mineral and trace mineralized salt products that were purchased directly from the manufacturer were produced in a facility that had discontinued using prohibited material prior to May, 1999. These products were therefore ruled out as a possible source of contamination.

Investigation at the retailer identified two possible manufacturers of the trace mineralized salt, one manufacturer of the protein supplement, one manufacturer of the vitamin premix, one supplier of the limestone and one manufacturer of the complete feed. Of these, only the protein supplement, vitamin premix and one of the sources of trace mineralized salt were manufactured in facilities also handling prohibited material. The manufacture of the other products was therefore also ruled out as a possible source of contamination.

The facility manufacturing the protein supplement employed sequencing and flushing procedures to ensure products for ruminants were free of contamination with prohibited material. Investigation of specific products potentially received by the farm confirmed these sequencing and flushing procedures were followed and documented. The protein supplement was ruled out as a potential source of contamination.

The facility manufacturing the vitamin premix was also the second manufacturer of the trace mineralized salt. Manufacturing records for products from this facility for the time frame of interest are no longer available so production practices to prevent cross-contamination of ruminant feeds by prohibited material as required by the regulations could not be verified. Ingredient receiving records do not document that appropriate procedures were always followed after receipt of prohibited material so opportunities for cross-contamination may have existed at this point in the manufacturing process. However, there are no records to associate specific production lots through the manufacturer and retailer to the producer.

Transportation records for the complete feed and grain were not available so confirmation of compliance with regulatory requirements at the time could not be verified. The possibility of cross-contamination during transportation cannot be ruled out for these products. The other commercial products were packaged in such a manner (bags or totes) to eliminate contamination during subsequent transportation and storage.

No direct link between specific products and production practices associated with potential cross-contamination can be made in this case. Facilities that handle prohibited material and manufacture ruminant rations are considered higher risk and did manufacture products to which the positive animal had access. The facilities identified in the investigation and which handled prohibited material, were each supplied exclusively by the same rendering facility common to previous investigations.

Investigation Overview

The detection of this case does not change any of Canada's BSE risk parameters. The location and age of the animal are consistent with previous cases, and the BSE surveillance results to date, including this new case, still reflect an extremely low level of BSE in Canada. In essence, the case confirms what was already known about an extremely low level of BSE infectivity having existed in Canada's feed system during the late 1990's and early 2000's within a previously determined geographic area and time interval.

Since the confirmation of BSE in a native-born animal in May 2003, Canada has significantly increased its targeted testing of cattle in high-risk categories advocated by the OIE (including animals which die on-farm). This effort is

directed at determining the level of BSE in Canada, while monitoring the effectiveness of the suite of risk-mitigating measures in place. Canada's National BSE Surveillance Program continues to demonstrate an extremely low level of BSE in Canada, with nine positive animals detected among over 150,000 targeted tests conducted since 2003. Such detections demonstrate the effectiveness and integrity of Canada's surveillance system; the level of awareness existing at all levels of the animal and meat production systems; the value of financial reimbursement provided for sampling and carcass disposal; and the commitment of Canadian producers and veterinarians to eliminating this disease. Canada's surveillance program adheres to OIE guidelines.

The safety of beef produced in Canada is assured by public health measures enacted in 2003, following the first detection of BSE in a native-born animal in Canada. The removal of Specified Risk Materials (SRM), those tissues which have been demonstrated to have the potential to harbour BSE infectivity, from all animals slaughtered for human consumption is the most effective single measure to protect consumers in Canada and importing countries from exposure to BSE infectivity in meat products.

As demonstrated by the surveillance system, the feed ban implemented in 1997 is effectively preventing the amplification of BSE in Canada's feed system. The detection of BSE in a few animals born after the 1997 feed ban is not unexpected and does not indicate a failure of those measures. Additional regulations to enhance Canada's feed ban were announced on June 26, 2006. The most important change will require the removal of specified risk material from all animal feeds, pet food and fertilizer. The enhancement will significantly accelerate progress toward eradicating BSE from the national cattle herd by preventing more than 99% of potential BSE infectivity from entering the Canadian feed system and eliminating opportunities for cross-contamination within the complex system of production, transportation and storage of animal feeds. For further information, please [see the fact sheet, Canada's Enhanced Feed Ban](#), at <http://www.inspection.gc.ca/english/anima/feebet/rumin/enhrene.shtml>.