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UCCE The Milk Lines

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South Valley Dairy Day
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For more details, see flyer in this mailing

BSE Update

Jim Sullins, Farm Advisor & County Director

As we all are aware by now unless you have not seen a newspaper or heard a news program in the last two weeks, the United States has now had its first confirmed case of Bovine Spongiform Encephalopathy, or BSE or as the press and our consumers know it, *Mad Cow Disease*. By the time you receive this newsletter the situation may have changed, however I hope you still find this update helpful.

On the morning of December 25, the BSE World Reference Lab in Weybridge, England, confirmed USDA's December 23 preliminary diagnosis of BSE in a single non-ambulatory (downer) dairy cow that had been slaughtered on December 9 at Vern's Moses Lake Meats in Washington State.

At the time of USDA's preliminary diagnosis on December 23, USDA's Food Safety and Inspection Service (FSIS) issued a Class II recall for the facility's entire day's production. The recall was classified as Class II due to the extremely low likelihood that the beef being recalled contains the infectious agent that causes BSE.

The herd the affected animal came from is under a State quarantine in Washington. While USDA has not made any decisions on the disposition of this herd, any cattle that die on the farm will be tested for BSE. USDA has not yet made any decision regarding depopulation of animals within the index herd.

USDA's Animal and Plant Health Inspection Service (APHIS) has determined the following additional information through its trace back investigation:

- USDA's primary line of inquiry suggests that the affected animal likely entered the United States as part of a group of 74 dairy cattle that were imported through Eastport, ID, from Canada in 2001. Canadian officials are actively participating in efforts to trace this animal back to its birth herd.

- There is some discrepancy in the records on the animal in question. Initial information obtained from the index herd owner indicates that this animal was 4 to 4½ years old; Canada's records indicate that she was born in April 1997, making her 6½ years old. USDA is working with Canada to ascertain the correct age of the animal in question and is initiating DNA testing to verify that the correct animal has been identified.

- The group of animals imported from Canada in 2001 were all dairy cattle and entered the country only about 2½ years ago. Most of them are likely still alive. And because of the records that are kept on dairy cattle, USDA is confident that the whereabouts of most, if not all, of them should be able to be traced. It is important to note that there is no scientific evidence to suggest that milk and dairy products carry the agent that causes BSE.

- USDA is working to trace the whereabouts of all of the animals from the shipment in question. It must be emphasized that there is nothing to suggest that any of the other animals in the group were affected with BSE. Indeed, even in the United Kingdom, where prevalence of this disease has been the highest, experience has indicated that usually only one or two animals in an affected herd are likely to have BSE.

- The cow had recently given birth to a bull calf (resulting in the complications that led to her being culled), which was sold to a location in Sunnyside, WA. Since the calf was not tagged, all bull calves at the Sunnyside premises under 30 days of age will likely be depopulated.

- The cow in question has previously had two additional calves while in the index herd in Washington. One died at birth shortly after the cow's initial purchase by the index farm. One, a yearling heifer, remains in the index herd, where it is under a State quarantine.

What is Bovine Spongiform Encephalopathy (BSE)?

BSE is a chronic degenerative disease that affects the central nervous system (brain & spinal cord) of cattle, first diagnosed in cattle in Great Britain in 1986. BSE belongs to a group of diseases known as Transmissible Spongiform Encephalopathies (TSEs). The TSEs include scrapie (sheep & goats), transmissible mink encephalopathy, feline spongiform encephalopathy (cats), chronic wasting disease of elk and deer, and BSE in cattle. Humans have a number of TSEs and these include kuru, Creutzfeldt Jakob Disease (CJD), new variant Creutzfeldt Jakob Disease (nvCJD), Fatal Familial Insomnia and Gerstmann-Straussler syndrome. The TSEs appear to be caused by abnormal proteins or "prions".

Cattle with BSE

BSE cannot be confirmed in the live animal. BSE has symptoms signs similar to rabies, polioencephalomalacia, *Hemophilus somnus* infection, and a number of other common diseases. The microscopic examination of brain tissue is the only way BSE can currently be diagnosed. There is no "live animal test"; however, research work is continuing. A live animal test that could identify a "BSE infected" animal well before it becomes ill would be immensely valuable.

Cattle affected by BSE experience progressive degeneration of the nervous system. Affected animals may display changes in temperament, such as nervousness or aggression, abnormal posture, appear uncoordinated, and have difficulty rising. They may also have decreased milk production, or loss of body weight despite continued appetite. Affected cattle die; there is neither any treatment nor a vaccine to prevent the disease. The incubation period (the time from when an animal becomes infected until it first shows disease symptoms) is from 2 to 8 years. Following the onset of clinical symptoms, the animal's condition deteriorates until it either dies or is destroyed. This process usually takes from 2 weeks to 6 months. Most cases in Great Britain occurred in dairy cows between 3 and 6 years of age.

U.S. BSE Prevention Program

The prevention of BSE in the US has been focused on three areas:

Importations

Since 1989 the USDA has banned importation of live ruminant animals and most ruminant products from countries with BSE. In 1997 the ban on live ruminant animals was expanded to include all European countries, whether or not BSE had been found there. In 2000, the USDA banned the importation of all rendered animal products from Europe.

Animal Protein Feed Ban

Since 1997 the FDA has prohibited the use of protein derived from most mammalian tissue (exceptions of milk, blood, porcine and equine proteins) in ruminant feed, making the United States the first country to do so without having the disease within its borders. Feed manufacturers are required to label any feed that contains prohibited material with the statement "**Do not feed to cattle or other ruminants**".

In general, the US ban on feeding mammalian protein to cattle (or other ruminants) has worked very well despite the news reports out of Texas a couple of years ago. The industry recently received an update from the FDA on this question. The FDA has inspected 7,972 feed mills. The number of feed mills handling mammalian protein (meat and bone meal, and similar substances) was only 1,426 (21%). These are the feed mills that produce feed for poultry or swine operations. The number of mills handling these prohibited materials is declining. The FDA has inspected 2,007 ruminant feeding operations and there were no significant problems found and only four operations needed to improve their record keeping systems. However, there is still some education needed regarding the ruminant feed ban. The proper cleaning of equipment and better record keeping will be necessary to achieve 100% compliance. The FDA is considering some possible changes to the BSE rule. These include

(1) prohibiting the use of Central Nervous System tissue (CNS; brain and spinal column) in rendered products, (2) prohibiting the use of poultry litter as cattle or sheep feed (poultry litter contains small amounts of poultry feed that may have a small percentage of ruminant meat and bone meal), (3) a pet food caution statement if they contain ruminant meat and bone meal, (4) ending the "plate waste" exemption (currently restaurant wastes can be rendered and potentially fed back to animals), and (5) more stringent rules on cross contamination in feed mills.

Surveillance

Surveillance began in 1990 and consists of examining brain tissue from cattle showing neurological signs that may be consistent with BSE. It was the first country to do so without having the disease within its borders. In 2003, the United States tested 20,526 animals for BSE. USDA plans to increase that number in 2004. Current U.S. testing levels are 47 times more than what is recommended by international standards. Testing focuses especially on animals considered to be at the greatest risk, those more than 30 months of age, any animals that exhibit signs of neurological disease, and non-ambulatory animals.

Latest USDA Actions

Based on the recent BSE investigation the USDA has taken the following immediate actions:

- Effective immediately, all downed animals are banned from the human food supply.
- Effective immediately, carcasses from all animals tested for BSE will be held pending receipt of test results. USDA will move to use of a rapid test to screen for BSE in tested animals with results that can be available within 36 hours. If a rapid test finds a positive, the samples must then be sent for a confirmatory test such as the current immunohistochemistry test used by USDA.
- USDA will implement new regulations which will become effective upon publication. These new regulations will result in the following:
    - Specified Risk Material (SRM) from cattle over 30 months of age will be banned from entering the human food chain. The list of SRM will be consistent with the SRM specified by Canada following its finding of a case of BSE in May 2003.
    - The small intestine will be removed from all cattle and banned from the human food chain.
    - The rules for Advanced Meat Recovery will be broadened and will ensure that central nervous system tissue and dorsal root ganglia (potentially infective nerve tissue) will not be present in human food.
    - The use of air-injection stunning devices for cattle slaughter will be prohibited.
- USDA will aggressively work to accelerate the development of a national animal identification system.
- USDA will appoint an international team of experts to review its investigation of this case and to review U.S. systems for food safety.

What Should Producers Do?

Regulatory agencies and producer groups need to aggressively monitor all regulations and bans. Producers need to support efforts by their state and national associations to ensure that science-based policies on cattle health and food safety are implemented. This support should include volunteer efforts and membership support**.**

Producers must not feed products containing prohibited materials to any ruminants. In addition, producers must keep copies of all feed records – invoices and labels- for a minimum of one year, and have them available for inspection.

Non-ambulatory (downer) cows will no longer be received by processing plants. Producers should be prepared for humane euthanasia of downer cows on their premises for pick-up by rendering plants.

For more Information

www.usda.gov www.bseinfo.org

www.beef.org www.usmef.org

www.aphis.usda.gov/lpa/issues/bse/bse.html

Source acknowledgement: Dr. John Maas, Vet Specialist UC Davis; USDA; & NCBA.

Treating Calf Diarrhea with Banamine

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A USDA report from the mid 1990's indicated that by the fifth week of life, greater than 25% of dairy calves had been treated for diarrhea, also known as scours. The report also indicated that dairy producers thought scours caused more than half of the calf deaths in heifer calves being raised as replacement animals.

Many different approaches have been suggested for the treatment of calves with diarrhea. The treatments most often include antibiotics by various routes of administration along with supportive fluids given orally or intravenously. A recent report from California suggests that under certain circumstances the use of banamine (flunixin meglumine) may reduce the number of days of sickness. Banamine is a drug that is used in most instances to reduce fever and inflammation.

Holstein bull calves were used in the California study that was carried out on a commercial calf ranch. One hundred and fifteen (115) calves from 1-21 days of age were enrolled in the study. At the first sign of diarrhea, one third of the calves received no banamine; one third got a single dose of banamine (1 mg/lb body weight); and one third got 2 doses of banamine 24 hours apart. The banamine was given intramuscularly. Assignment to treatment groups was made on a random basis. Calves were evaluated daily for rectal temperature, fecal consistency, attitude and skin elasticity through their first 21 days on the calf ranch. The days of sickness were also recorded.

Results of the study showed that calves that had blood in their feces benefited from a single dose of banamine given at the first sign of diarrhea. Calves treated in this manner had fewer sick days and received fewer antibiotic treatments compared to the non-treated or twice-treated calves with blood in their feces. The presence of blood in feces can be an indication of severe inflammation of the tissue lining the intestines. So the banamine probably improved the recovery in this group of calves because of the drug's anti-inflammatory effect on the intestinal wall. Calves without blood in their feces did not benefit from banamine treatment. All calves with diarrhea were also treated by the ranch personnel using various antibiotics. No attempt was made to determine the infectious cause of the diarrhea.

Calf diarrhea continues to be a major cause of sickness and death in milk fed dairy calves. This report suggests that treatment with banamine along with other therapies under the conditions of this study may be expected to reduce the impact of diarrhea. As with other treatment strategies, it is always a good idea to consult with your dairy veterinarian before you begin a new treatment regime.

(Barnett SC, Sischo WM, Moore DA, et al. 2003 Evaluation of flunixin meglumine as an adjunct treatment for diarrhea in dairy calves. JAVMA 223; 1329-33)

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