

Meat Messenger

North Dakota State Meat Inspection Program

North Dakota Department of Agriculture

October 2002

This month's newsletter focuses on Chronic Wasting Disease (CWD) and will hopefully answer many questions and concerns that may be on your minds with the deer gun season fast approaching. The articles include general information on CWD as well as more specific information for meat processors and consumers of venison or elk. The main points that are important to remember are 1) CWD has never been found in North Dakota, 2) the prions that cause CWD are not found in tissue normally consumed by people, and 3) there is no scientific evidence linking CWD to disease in people. However, there are still some unknowns so it is important to be prudent and take some basic precautions.

The Board of Animal Health initiated mandatory testing of all captive deer and elk in 1998. Since then, over 750 animals have been tested with no positive results. The Game and Fish Department has conducted targeted surveillance (testing all deer or elk displaying signs consistent with CWD) since 1996 with no positive results. The surveillance effort will be expanded this year to include random samples collected from animals hunters bring to check stations.

Food Safety Risk of Venison Products Associated with Chronic Wasting Disease (CWD) in Wisconsin Deer

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The detection of CWD in deer in an area of southwestern Wisconsin has focused a great deal attention on this disease and has raised questions about the potential human health risks associated with Wisconsin venison. Hunters want to know if there is a health risk from consuming venison. Meat processors want to know if there is any risk to the safety of their plant's environment if they handle venison. At this point in time these questions cannot be answered with "absolute certainty." However, many things are currently known about the potential CWD risk to humans and some recommendations are available to minimize that risk. This article summarizes the food safety related aspects of CWD.

Some background on CWD: CWD is a nervous system disease which affects deer and elk (usually over 18 months of age) causing weight loss and various neurological changes (such as altered head and ear orientation, an unsteady gait, decreased fear of people), progressing to eventual animal death. It is a member of a family of related diseases known as transmissible spongiform encephalopathies (TSEs), each afflicting specific hosts (sheep, cattle, deer/elk, mink, and humans).

The suspected cause of TSEs is a number of unique strains of infectious, self-propagating proteins called prions, an abnormal form of a normal protein found in many tissues. In affected animals, the presence of the prions causes normal nervous system protein to be converted to the abnormal prion type, resulting in brain lesions which create the neurological changes associated with the disease. Different prions are associated with each type of TSE. CWD appears to spread directly by animal-to-animal contact, and indirectly by contact of animals with highly contaminated environments. In infected animals, prions have been found in nerve tissue (brain, spinal cord), lymph nodes and spleen, but have not been found in meat. Prions are extremely resistant to destruction by chemical or physical methods (such as heating).

Why is there concern about CWD and human health? If CWD is a TSE disease of deer and elk, why is there a concern for human safety? A human TSE exists, and it is termed Creutzfeld-Jakob Disease (CJD). It occurs world-wide, generally in older individuals (usually over 65 years of age), at the rate of about one case annually per 1,000,000 people. It had been previously thought that each distinct naturally occurring TSE only existed within a species; that is the disease could not cross the "species barrier," and affect other types of animals or humans. However, in the wake of the bovine spongiform encephalopathy (BSE - "Mad Cow Disease") outbreak in British cattle in the 1980's and 90's, approximately 125 humans have contracted what is called "new variant CJD," differing from the traditional form in that it occurs among

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younger adults and produces somewhat different pathological changes in nervous tissue than classical CJD. One possible explanation for the appearance of the new CJD is that it was contracted by consuming beef nervous tissue containing the infectious prions, which were able to affect people. Although there is currently no evidence that this occurs with CWD, this threat is the basis of the potential food safety risk associated with venison from deer or elk having CWD.

What does this all mean for venison safety? Given the above facts about the disease in deer and the potential (hypothetical) health implications for humans, and knowing that almost nothing in our lives can attain risk-free “absolute safety,” what available information exists to help hunters and processors make informed choices about venison safety? Consider the following:

- The World Health Organization (WHO) and the U.S. Centers for Disease Control and Prevention (CDC) have found no scientific evidence to date that CWD can be transmitted to humans.
- No link has been found between CWD in deer and elk and Creutzfeld-Jakob Disease (CJD) in humans.
- Infectious prions haven’t been found in meat of BSE-infected cattle or scrapie-infected sheep (scrapie is a TSE of sheep). These agents have been isolated from brain, spinal cord, eyes, lymph nodes, tonsils and spleen.
- CWD infected deer and elk have existed in a geographic pocket on the Colorado/Wyoming border for over 30 years, with no apparent association of CWD with other TSEs of man or other animals. The incidence of the human form of this disease (CJD) has remained level at the expected annual rate of about one case per 1,000,000 people in that area. This includes individuals who have slaughtered deer and elk, and workers in research facilities studying CWD.
- Scrapie has been present in sheep for over 200 years, with no evidence of transmission to humans via the meat.

Can a processing plant become “infected” with CWD? If a plant handles venison, does that pose a significant risk of build-up of infectious prions within the plant environment, which could affect other meat products? That question is impossible to answer with absolute certainty at this time, but it seems unlikely for the following reasons:

- Venison from few, if any, CWD affected deer would be processed in any plant.
- By not cutting into the spinal cord or brain, and by removing lymph nodes, the suspected source of infectivity is not released into the plant environment. Prions are proteinaceous material and are not airborne, nor do they grow in number or amount.
- Thorough cleaning of plant equipment with a detergent to remove protein materials should eliminate most prions which could be present (prions are proteins). Meat inspection regulations require strict separation of inspected traditional meats from uninspected venison, including thorough cleaning and sanitizing of equipment.
- Effective sanitizing of food contact surfaces with a strong 50/50 bleach and water solution has been shown to greatly reduce the infectivity of the prions.
- If prions were adhering to equipment surfaces so tenaciously as to survive scrubbing with soapy water and a strong sanitizer, it seems unlikely they would transfer to future meat contacting the surface.

What to do? This article has reviewed current information surrounding the potential food safety aspects of venison in Wisconsin’s CWD situation. At this time the evidence suggests an extremely low risk, if any, associated with venison consumption. Absolute safety is not attainable in most life situations, including the current CWD situation. The risk of CWD passing to humans cannot be quantified and compared to other life risks because it has not yet been known to occur. Hunters and processors must weigh the current evidence and recommendations, consider the risk in the perspective of their life situations and take actions they feel are appropriate. This and other articles suggest precautions which can be taken in handling and processing venison to minimize any risk which might exist.

Equipment For Sale

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8’ wide, 18’ long, 8’ high

Good condition

\$3,000

Call Kevin at Maple Valley Locker

5hp compressor and evaporator

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CWD Expert Vouches for Safety of Venison

Dennis Anderson - Star Tribune

Published September 13, 2002

Dr. Elizabeth Williams of the Wyoming Veterinary Laboratory in Laramie, Wyo., has studied chronic wasting disease in deer and elk since 1977. A recognized authority on the disease, Williams, in the interview below, discusses, among other aspects of the disease, theories on how CWD is transmitted. She also advises Minnesota deer hunters afield this fall to “enjoy their hunt” and, as she does herself, to eat venison.

Q: Chronic wasting disease was first found in 1967 in Colorado at a government testing facility. Was there panic at that time among hunters and the public?

A: No, it was just another oddball disease. There was no reason to be that concerned, except to the degree that it had an impact on the animals that were being studied for other purposes. Certainly there was no sense of alarm. Frankly, until the cases were found in Wisconsin recently, and news of CWD there hit the media, most people were taking the disease in stride. People have gotten much more concerned about it since then, and interest has heightened.

Q: How do you think CWD found its way to Wisconsin?

A: I don't know. It will take more work to get a better idea about that. How wide the distribution is in wild deer in Wisconsin will be important to know. What's happening in the captive cervid industry in the state will also be important to know. Even then, I'm not sure we'll ever know.

There are multiple ways the disease could have traveled. One is the captive cervid industry. Another, theoretically, at least, involves the transportation of carcasses by hunters from outside the state. One of the origins also could be scrapie, which is a disease in goats and sheep. That hasn't been proven, but it's possible. One other idea is that the disease simply occurs spontaneously.

Q: What is the possibility that CWD has always been around?

A: We'll have a much better idea after Wisconsin and other states, including Minnesota, test a lot of deer, as they plan to this fall. Don't forget, if it is present at a very, very low level in wild herds, predators, including coyotes, usually are pretty good at cleaning up sick animals. So without testing of a lot of animals, it might otherwise be difficult to detect.

Q: How sure are you that CWD can't infect humans?

A: The term “species barrier” describes the level of resistance that exists to transmitting a disease from one species to another. I'm a veterinarian, and I rely on the information about these barriers that is given to me by the Center for Disease Control. I also refer to laboratories that develop models using species that have certain things in common with human genetics. So far, the models indicate that there is quite a barrier blocking this type of transmission. At this point in time, no human link has been found to CWD. Obviously, there are some unknowns, so you take precautions to minimize risk. You don't eat sick animals, for instance.

Q: What role, if any, has the domestic elk industry had in the spreading of CWD?

A: We know that domestic elk are, or have been, moved in commerce, from place to place, on trucks. So they make larger geographic jumps than would otherwise be the case. We also know the disease was transferred from a domestic elk herd in South Dakota to a domestic herd in Saskatchewan.

Q: Minnesota and Wisconsin hunters and their families seem to be quite concerned about CWD and its potential ill effects on their health, this despite what officials have said about CWD being a deer and elk disease, not a human disease. What's your advice to people in the Midwest as the fall hunting seasons begin?

A: Enjoy your hunt. If you see a skinny animal, contact authorities. Otherwise, enjoy your hunt and enjoy your venison. I say that as a hunter myself. I enjoy venison a lot. I'm not about to stop hunting deer or eating venison.

Hickory Hut Joins Meat Inspection Program



The Hickory Hut in Langdon is the latest meat processing company to operate under the state meat inspection program. The Hickory Hut is owned and operated by Keith and Linda Albrecht and has been in operation for the last two years. The plant has been an official processing establishment for the past year and employs three full time employees and numerous part time individuals throughout the year.

“This last year being under inspection has definitely helped out in terms of getting our product and name out there to different locations” claims Albrecht. “We’ve seen a jump in sales that we would not have had if we could not have put our products into different locations”. Hickory Hut is currently in about 15 different retail outlets throughout the state.

The official processing plant has a variety of products that it sells in its retail case and also handles a large number of deer each year. The plant produces about 50-60 products made from elk, bison, and beef. Deer season is also a busy time of the year at the plant; they processed about 1200 deer last year.

Keith said he is trying to get connected with a distributor to market a snack stick product the plant currently sells. “We would like to continue to expand,” Albrecht said. “There is definitely potential out there if a company gets into the right area.”

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