

Meeting Minutes: Advisory Committee for Farmed Cervidae Rule Amendments

Date: 11/13/2020, 10:30 a.m. to 12:30 p.m.
Minutes prepared by: Dr. Courtney Wheeler
Location: Virtual Meeting via Microsoft Teams

Attendance

Farmed Cervid Advisory Committee Members

- Kelly Anderson, Minnesota Department of Agriculture (MDA)
- Michelle Carstensen, Minnesota Department of Natural Resources (DNR)
- Amy Cordry, Member of the public
- Craig Engwall, Minnesota Deer Hunters
- Brenda Hartkopf, Minnesota Elk Breeders Association
- Dr. Joel Ihnen, Minnesota Cervid Veterinarian
- Rich Meech, Minnesota Deer Farmers Association
- Dan Miller, Livestock producer
- Dr. Joni Scheftel, Minnesota Department of Health (MDH)
- Dr. Jerry Torrison, Minnesota Veterinary Diagnostic Laboratory (MVDL)

Not present

- Representatives of Minnesota Tribal members: Miles Falck and Philomena Kebec
- At-large livestock producer (other than farmed Cervidae producer): Dan Miller
- At-large representative of Minnesota farmed cervid producers: Robert Ernst
- Representative of Association of Minnesota Counties: Steve Notch
- Representative of the United States Department of Agriculture: Dr. Stephan Schaeffbauer

Minnesota Board of Animal Health staff

- Dr. Linda Glaser, Farmed Cervidae Program Director
- Dr. Courtney Wheeler, Farmed Cervidae Program Director
- Annie Balghiti, JD, Rules Coordinator

Welcome

Annie Balghiti introduced herself as the Minnesota Board of Animal Health (Board) rules coordinator explaining that it is her responsibility to “shepherd” the Board through the rulemaking process as required under the state of Minnesota Administrative Procedures Act. Ms. Balghiti reminded the committee that the first formal comment period for the Board’s farmed Cervidae rulemaking closed on October 30th at 4:30 PM and that there will be a second opportunity for formal comment available for a minimum of 30 days after the Board posts their

final proposed rules draft in December. Ms. Balghiti also stated that any hearing held on the Board's rulemaking prior to rule adoption will offer a third opportunity for comment.

Ms. Balghiti reminded those attending the meeting that members of the advisory committee don't have voting powers and don't write the rules but do have the attention of the Board and bring forth comments from the constituents that they represent. Ms. Balghiti explained that typically the last 15 minutes of advisory committee meetings is open for public comment but during this meeting we have a lot of ground to cover as well as three presentations, so we will only open the meeting for public comment if time permits.

Ms. Balghiti took roll call and walked through the agenda highlighting those presenting; Dr. Courtney Wheeler, Dr. Joni Scheftel and Dr. Peter Larsen.

Farmed Cervidae Program Compliance Overview

Dr. Courtney Wheeler introduced herself as the director of the Board's Compliance Program. Dr. Wheeler shared a PowerPoint presentation with the committee and members of the public in attendance.

Dr. Wheeler stated the goals of the Board's compliance goals which include, Compliance with Statutes, rules and policies to protect the health of Minnesota's domestic animals, Resolve violations with minimal enforcement action and within time limits set by the BAH, Minimize economic losses for affected parties to preserve livelihood, Minimize regulator's time and resources allocated to enforcing non-compliant parties.

Dr. Wheeler explained that the Board considers multiple factors when determining appropriate progressive enforcement action including: Risks to animal and/or public health, Intent, knowledge and willfulness, Compliance history, Violation-related profit, Cooperation in correcting the violation.

Dr. Wheeler presented the Board's contested case policy, which is available on the Board's website (<https://www.bah.state.mn.us/contested-case-policy/>). She explained that any person or business against whom the Board takes enforcement action has the right to contest the alleged violations and the Board's action(s).

Dr. Wheeler informed the group that the most commonly used enforcement action by the Board is a Notice of Violation and Correction Order (NOV) which is a written warning that specifies the alleged violation(s), specified time for correction, and consequences for failure to correct the violation(s).

Dr. Wheeler presented a table listing the total number of NOVs issued by the Board for violations of farmed Cervidae program requirements in calendar year 2020 to date. She noted that the Board issued 141 NOVs including: 67 for failure to submit payment for their annual inspection fee by the deadline, 52 for failure to submit and/or maintain an accurate and verified inventory, 10 for failure to maintain records as required for a minimum of 10 years, 9 for failure to submit samples from test eligible animals for CWD testing, 6 for escaped cervids, 5 for failure to officially identify cervids, 3 for failure to maintain appropriate fencing height, prevent ingress or egress of cervids, or to install redundant gating, and 2 for failure to comply with intrastate or interstate movement requirements.

Dr. Wheeler shared that the primary consequence for failure to correct a NOV is assessment of a civil penalty (NOCP). Dr. Wheeler stated that the amount assessed is typically \$250.00 for a first time offense and that the Board has the authority to assess as much as \$10,000. She added that producers who fail to recapture and test animals running at large within the timeline set by the Board are assessed \$100 per animal.

Dr. Wheeler presented a table listing the total number of NOCPs assessed by the Board in calendar year 2020 to date. She noted that the Board assessed 4 civil penalties for failure to test animals for CWD, 1 for failure to install redundant gating, 3 for failure to recapture animals running at large and 1 for failure to submit an accurate, verified and reconcilable inventory to the Board.

Dr. Wheeler then presented a table listing the counties in which herds were located that had their registrations cancelled in 2019 and 2020 and the date the registration was cancelled. She pointed out that in 2019, the Board cancelled registration for 8 herds, 7 of which were depopulated; and 1 in 2020 which agreed to depopulate before the end of the year.

Dr. Wheeler presented a slide illustrating the herd registration cancellation process informing the group that this is not a decision that the Board enters into lightly. The Board only elects to cancel herd registration after multiple attempts to work with producers to come into compliance with program requirements.

Dr. Wheeler presented a table illustrating the number of progressive enforcement actions by program. She noted that although NOVs for the farmed Cervidae program greatly outweigh those issued for other programs; two facts need to be taken into consideration. Almost half of the NOVs issued to farmed Cervidae producers in 2020 were in response to failure to submit payment for their annual inspection fee by the deadline. Under new statutory requirements, some producers went from paying \$10 for this fee to \$250. Dr. Wheeler commented that the Board has worked over the past year to develop procedures and protocols to better assist producers in meeting this requirement for 2021. Dr. Wheeler also asked the group to consider that farmed Cervidae producers are held accountable for more regulatory requirements than any other livestock species.

Dr. Wheeler thanked the group for their time and attention and requested questions or comments. None were noted.

Overview of Human Health Concerns Associated with CWD

Dr. Joni Scheftel introduced herself as the State Public Veterinarian and the head of the Minnesota Department of Health (MDH) Zoonotic Disease Unit. She explained that she would be presenting on CWD and its relation to human health. Dr. Scheftel shared a PowerPoint presentation with the committee and members of the public in attendance.

Dr. Scheftel informed the group that Chronic Wasting Disease (CWD) is in the Transmissible Spongiform Encephalopathy (TSE) family, adding that all prion diseases in this family have long incubation periods. She clarified that transmissible refers to spread, spongiform refers to the spongy appearance of a brain affected by TSEs, and encephalopathy refers to a disease of the brain.

Dr. Scheftel continued herd presentation explaining that TSEs are caused by prions. Prions are unique and a relatively new discovery. Other TSEs include Scrapie, Bovine Spongiform Encephalopathy (BSE), and Feline Spongiform Encephalopathy (FSE). Scrapie is a prion disease that has been known for hundreds of years. During

that time, there has been no evidence of human infection. Despite this fact, the United States Department of Agriculture (USDA) classified Scrapie as an economic and food security threat. Since USDA's Scrapie eradication program was initiated, the occurrence of the disease has been reduced by 99%.

Dr. Scheftel shared that BSE is the only TSE that has been proven to spread to people. She illustrated the first human case, identified in 1996, known as variant Creutzfeldt-Jakob disease (vCJD). She explained that this disease is actually different from the previously identified Creutzfeldt-Jakob disease also caused by abnormal prions, but when it was named its direct relation to BSE was unclear. Since the first identified case, over 220 human deaths have been attributed to vCJD which occurred after people ate beef infected with BSE. Other TSEs affecting people include Kuru which infected people in New Guinea who ate infectious brain tissue and Gerstmann-Straussler-Schneinker Syndrome (GSS) a rare disease attributed to misfolded prion proteins.

Dr. Scheftel stated that CWD is the only TSE of free ranging wildlife and was first identified in Colorado in 1967. CWD is the most infectious and easily transmitted of TSEs, there are many potential routes of exposure. CWD has been proven to be transmitted through direct and environmental contact and is very persistent in the environment. Dr. Scheftel concluded that all prion diseases behave differently and can only be differentiated with laboratory testing. The ability for a prion disease to cross a species barrier is dependent upon multiple factors including the strength of the barrier.

Dr. Scheftel stated that prions are indestructible. She continued by explaining that the only effective ways to kill prions is to heat them to 1,832 degrees Fahrenheit, alkaline tissue digestion like at the Minnesota Veterinary Diagnostic Laboratory (VDL) and 50% bleach solution. Using 50% bleach solution is a relatively new discovery that has been implemented by meat processors who can clean equipment with this solution after processing CWD positive or potentially positive animals.

Dr. Scheftel explained that CWD prions are found in multiple tissues and new strains have been developed in laboratories. CWD is unique and is not analogous with Creutzfeldt-Jakob disease (CJD). CWD has been studied for decades and there is no evidence that it can be spread to people. Dr. Scheftel emphasized that CWD has not been identified in non-cervid species. She stated that, it should be noted that, in a laboratory setting, species barriers can be breached; a prion disease normally found in one species can be made to infect another species and other prion diseases that are adapted to a particular host have been shown to naturally infect other species. This is why the MDH takes cautious steps.

Dr. Scheftel stated that, as CWD spreads, human exposure naturally increases illustrating that in some areas of Wisconsin CWD affects close to 50% of deer that are harvested. A lot of people eat venison and elk; studies show that 20% of the population hunts cervids and 66% eat cervid meat. MDH performs routine surveillance in humans to look for illnesses that could possibly indicate infection with another prion disease (not CJD).

MDH looks to identify patterns and clusters. Dr. Scheftel provided the example that the average age of onset of vCJD (BSE) is 29 years of age and most people infected with CJD are around 60 years of age. Health officials identified the link to BSE by noting the prevalence of disease in an unexpected age group.

Dr. Scheftel noted that MDH has not identified any potential cases or case clusters that might indicate a new prion disease in people and 30 years of CWD research has not identified transmission of CWD to humans. Dr. Scheftel added that, despite these facts, MDH advises against eating prions out of an abundance of caution. MDH also advises that people do not eat animals that are sick or exhibiting unusual behaviors, test deer from endemic areas for CWD prior to processing and don't consume meat if positive. They also recommend that processors wear personal protective equipment and don't mix meat from multiple sources.

Dr. Scheftel presented that the best way to reduce human risk is for us to work together to reduce exposure by controlling the disease in wild and farmed cervids. She stated that we need to work together to develop plans for handling deer carcasses, to prevent cross contamination in processing facilities, make testing accessible and affordable and to raise awareness about potential infection without creating paranoia. Dr. Scheftel wrapped up her presentation by stating that we need to approach CWD and its potential to infect people with “cautious wariness”.

Dr. Scheftel thanked the group for their time and attention and requested questions or comments.

Rich Meech inquired how Scrapie was eradicated.

Dr. Scheftel responded that Scrapie was eradicated based on live animal testing and genetic testing and culling of infected and susceptible animals.

Rich Meech asked if it is conceivable that a resistant gene could be identified in cervids.

Dr. Scheftel replied that genetics is complicated and not her expertise.

Mr. Meech commented that CWD can be transmitted in semen and saliva and asked Dr. Scheftel if she knew what the infectious dose is in cervids.

Dr. Scheftel responded that she didn't know the answer to Mr. Meech's question but added that she thought it would not be very much.

Mr. Meech inquired about the infectious dose for nose to nose to contact.

Dr. Glaser informed Mr. Meech and the group that Dr. Scheftel is not an expert on Scrapie eradication or CWD transmission and was present to address questions related to human health issues and these questions might better be addressed by Peter Larsen.

Annie Balghiti addressed the group and inquired if there were any additional questions or comments for Dr. Scheftel. Hearing none, Ms. Balghiti thanked Dr. Scheftel for her presentation and time. Ms. Balghiti suggested that the meeting proceed with a review of the Board's most current draft of proposed rule amendments.

Review of Updated Proposed Amendments to Rules

Linda Glaser stated that the Board sent out their most recent proposed amended rules draft and noted that the document is also posted on the Board's website (https://www.bah.state.mn.us/media/DRAFT-11_06_20-incorporating-comments-for-Minnesota-Rules-Chapter-1721.0370-to-1721.0420.pdf). Dr. Glaser shared her copy of the document with the group and pointed out that there is a combination of color fonts indicating new and updated changes since the Board sent out its last version. New changes are in red, the changes from 2nd to 3rd draft are in blue font.

Brenda Hartkopf commented that during the last meeting proposed edits to program surveillance standards was not addressed. Ms. Hartkopf requested that the group begin by reviewing this document this since it was “unfinished business from last meeting.”

Dr. Glaser acknowledged Ms. Hartkopf's comments and began by presenting proposed amendments to the section referencing program surveillance standards. She referred to section 1721.0420, and highlighted the Board's proposed changes to Subpart 1 which reads, “For each animal not successfully tested, the herd status

may be reduced based on compliance history and the most recent 12 months of surveillance in the herd in accordance with board surveillance standards for Farmed Cervidae”. Dr. Glaser pointed out that the updated CWD Surveillance Standards are available on our website (https://www.bah.state.mn.us/media/Revised-Herd-Status-Impact-with-Missed-CWD-Surveillance-Testing_10.19.20.pdf).

Dr. Glaser presented CWD Surveillance Standards and explained that the Board changed criteria and condensed some of the categories because they were similar for one or multiple animals missed. She reminded the group that test eligible animals are those that are 12 months of age and older and we review surveillance over the previous 12 month period.

Dr. Glaser highlighted that status is not impacted if the number of animals missed is less than or equal to 10% of total animals that died or were harvested. Status is suspended for six months if you miss more than 10 animals, ex. 1 in 3, 2 in 6, greater than 10% but less than or equal to 35%. Status is suspended for 12 months if you miss more than 35% but less than or equal to 50%.

Dr. Glaser then stated that if a producer misses more than 50%, status is suspended until additional testing is performed. She added that this is consistent with our current approach to producers who egregiously miss samples for CWD testing. A substitute sample can be submitted from an animal in the same enclosure and has been a member of the herd for just as long.

Brenda Hartkopf noted that a change from the first to the second version the language was changed from lowered to suspended and thought that lowered is the term used in federal program standards.

Dr. Glaser replied that she did not think that federal program standards use the word lowered.

Ms. Hartkopf inquired how many herds would have 10 test eligible animals during a surveillance period.

Dr. Glaser responded that she didn't know at this time.

Ms. Hartkopf stated that most herds would not have that many and these updated standards are still failing to recognize herds that have had good surveillance. She implored the Board to consider changing 10% to 20%. Ms. Hartkopf repeated her previous verbal and written comment that program surveillance standards should be in rule and not “arbitrary, as it would be if it is written in policy.”

Dr. Glaser addressed Ms. Hartkopf, “Do you know how many elk herds miss samples on an annual basis, I don't have the data in front of me?”

Ms. Hartkopf replied that she did not.

Dr. Glaser continued her review of proposed amendments to herd surveillance program standards pointing out that we increase the consequences for “repeat offenders”. If a producer fails to submit samples from more than 35% of test eligible animals that died or were harvested, status is suspended until additional testing is completed.

Amy Cordry requested that Dr. Glaser more specifically outline the consequence of status suspension, for the benefit of members of the public.

Dr. Glaser responded that a suspended status means that the herd is not assigned a CWD surveillance status level during that period. A suspended herd would not be allowed to move animals. Current federal regulations and proposed state regulations require herds to be a status level 6 to move animals off of the premises. Dr.

Glaser replied that this may not be an effective consequence for a producer who wasn't moving animals and could afford to wait to earn their status back.

Ms. Cordry asked, "To clarify, the consequence is to basically decrease status so that herds couldn't move animals?" She then inquired what the herd status was for the Douglas and Pine County CWD infected herds.

Dr. Glaser verified that both herds had achieved a surveillance status level 6.

Ms. Cordry inquired that, if following the amended program standards, these herds would have their status suspended.

Dr. Glaser explained that the Pine County herd moved animals to the Douglas County herd and that both herds were identified as infected. Both herds have been depopulated and no longer have animals.

Ms. Cordry inquired about the status of the most recently infected Houston County herd.

Dr. Glaser stated that the status of this herd is considered infected. Herds determined to be infected or CWD exposed do not have a status level and these herds cannot move animals.

Brenda Hartkopf commented on language referencing substituting an animal which currently reads, "the substitute sample must be from an animal of the same sex and species as the unsuccessfully tested or missed animal. In addition, the substitute sample must come from an animal that resided in the same enclosure and has been a member herd for at least as long as the unsuccessfully tested or missed animal". She requested an amendment to read, "a herd mate for the time period for which there is concern", concluding that this makes more animals available for testing. Ms. Hartkopf commented that the Board's amended language from the previous draft is an improvement but suggested adding a definitive time period. She further explained that "resided for at least as long as the unsuccessfully tested or missed animal" still limits the number of animals that can be substituted.

Ms. Hartkopf then requested that the committee address what she referred to as "inflammatory language" added to the most recent draft that she felt "the Board may not have authority to enforce".

Dr. Glaser acknowledged Ms. Hartkopf comments but stated that she would like to present a broad overview of the Board's amendments in the most recent draft first.

Dr. Glaser began by presenting section 1721.0370, "Definitions." She informed the committee that the Board is proposing to delete the previously added definition of "Terminal Hunt Facility".

Dr. Glaser then presented section 1721.0380, "General requirements". She informed the committee that the Board is proposing striking the language in Subp. 4, "Herd inventory" which reads, "An annual inventory must be submitted within a maximum of 3 months of the date of the previous annual inventory".

Dr. Glaser then read through proposed added language to Subp. 5, "Fencing" which would require all new Farmed Cervidae premises with white-tailed deer that are registered after January 1, 2022, to have perimeter fences that are at least 120 inches in height.

Brenda Hartkopf stated that "the legislature already dealt with this [increase to fence height]". She pointed out that in previous committee meetings we discussed that the Board may not have the authority to change fencing requirements. Ms. Hartkopf further inquired, "what problem is this requirement actually solving?"

Dr. Glaser responded that she agreed that requiring double fencing is outside of the Board's authority. Current statute requires that all perimeter fencing must be at least 96 inches in height, language that allows the Board to require more strict requirements. Dr. Glaser further explained that there is research confirming that white-tailed deer can scale an 8 foot [96 inch] fence. Kurt Vercauteren with USDA Wildlife Services published information confirming this (http://unexpectedwildliferefuge.org/uwr_public/literature/VerCauteren_201074613781381.pdf). Dr. Glaser reiterated that the Board would not require 10 foot fences for current registrants, only for new farms moving forward.

Ms. Hartkopf wanted to know how many deer are jumping over fences in Minnesota.

Dr. Glaser responded that the predominant contributor to farmed Cervidae escaping an enclosure is a gate being left open. She also noted that Minnesota has seen a reduction in farmed cervid escapes over the last two years which may be attributed to multiple factors including installation of redundant gating.

Ms. Hartkopf stated that if reports have shown human error [leaving gates open], or a tree falling on a fence as the primary concerns for escape of farmed cervids, she didn't think that the purpose of rulemaking was being applied appropriately in requiring 10 foot fencing on white-tailed deer farms.

Amy Cordry inquired why the Board would elect to wait for a problem to occur as it is always more difficult to retroactively solve a solution than it is to be "proactive, preventative and cautionary". Ms. Cordry addressed Brenda Hartkopf, asking, "Can you exemplify a cost to producers that is prohibitive to meeting this requirement?"

Ms. Hartkopf responded that we [the state of Minnesota] has 25 to 30 years of data to prove that deer jumping out of enclosures is not a problem and there is no reason to think that this is going to change.

Rich Meech inquired why the rule is only targeting white-tailed deer farms, stating, "if we are concerned with deer jumping in or deer jumping out, why do elk breeders not have to follow this rule as it is conceivable that a white-tailed deer could jump into an elk pen". [Comment after the meeting – the board is primarily concerned with the escape of animals and white-tailed deer are the species known to jump over an 8 ft. fence. White-tailed deer are also the same species as the predominant free-ranging cervid in the wild and it is more difficult to differentiate these animals from wild cervid if they escape.]

Dr. Glaser continued to present the Board's most updated proposed rule amendments referencing section 1721.0380, Subp. 6, "Running at large prohibited". She read the proposed amended language, "An owner may not allow farmed Cervidae to run at large. Farmed Cervidae that are running at large are livestock as defined in part 1721.0370 and remain the property of the rightful owner until the animal is declared by the board as lost; an animal may be declared as lost no sooner than 30 days after its escape". Dr. Glaser explained that after 30 days the producer is not held responsible [by the Board] for recovering the animal that has been out. She added that most producers do not make attempts to recapture and return the animal after 30 days. An animal may be recovered during a hunting season, at that point the owner has given up rights to the animal.

Brenda Hartkopf stated that "30 days does not make domestic animals livestock". She questioned, "Where does the Board have the authority to do that?"

Dr. Glaser read Minnesota statute 35.155, Subd. 1, "An owner is liable for expenses of another person in capturing, caring for, and returning farmed Cervidae that have left their enclosures if the person capturing the farmed Cervidae contacts the owner as soon as possible. If an owner is unwilling or unable to capture escaped farmed Cervidae, the commissioner of natural resources may destroy the escaped farmed Cervidae. The

commissioner of natural resources must allow the owner to attempt to capture the escaped farmed Cervidae prior to destroying the farmed Cervidae. Farmed Cervidae that are not captured by 24 hours after escape may be destroyed.” Dr. Glaser pointed out that no part of this statute outlines that the animal remains the property of the owner.

Ms. Hartkopf stated that it was in Board policy, and that we [Minnesota Elk Breeders Association] asked that it be added to the rule. She commented that “we all know stories of people who lost a cat and got it back 6 years later. The cat was returned to the owner. Where is the Board’s authority?”

Dr. Glaser replied that in Ms. Hartkopf’s cat example, it is possible that whoever found the cat elected to return it to the owner. She added that the Board is not stating that they have authority over anything that happens with animal ownership after the 30 days, the owner will have to work with whoever harvests the animal to determine whose property it is.

Amy Cordry addressed Ms. Hartkopf stating that they had a conversation about escaped animals via e-mail and Ms. Hartkopf informed her that if an animal is gone for longer than 24 hours the chances of a producer recovering that animal is slim. Ms. Cordry added that allowing an animal to stay at large for 30 days seems lengthy from a disease risk standpoint.

Ms. Hartkopf responded, claiming that she didn’t state that it was difficult to recapture elk after 24 hours and she would not have commented about deer since she doesn’t own any deer.

Dr. Glaser closed the conversation by stating that the Board’s authority extends to the time when the animal is considered lost.

Annie Balghiti asked if any other committee members had opinions on this portion of the proposed rule amendments. She then notified the group that Dr. Peter Larsen, University of Minnesota College of Veterinary Medicine, Minnesota Center for Prion Research and Outreach (MNPRO) was on the call and ready to present on CWD.

Overview of Environmental Contamination of CWD Prions and Risk to Cervids

Peter Larsen began his presentation on “Infectivity of Prions in the Environment”. Dr. Larsen informed the group that MNPRO webinars are available at: <https://mnpro.umn.edu/outreach>.

Dr. Larsen explained that CWD prions are a misshapen form of a prion that is resistant to degradation and can remain viable in the environment for years. He stated that we can learn valuable lessons from Scrapie in sheep, which is similar to CWD. Dr. Petersen referred to Scrapie in Iceland as an example from a historical perspective. He reported that a ram in Iceland in 1979, was confirmed positive for scrapie and bred ewes throughout the country spreading the disease. In the 1940s all sheep in the original outbreak area were culled. The area was designated as Scrapie free 3 years after culling. Farms were restocked and new animals were infected.

Dr. Larsen reported that research showed that Scrapie prions can remain infectious in the environment for 3 to 16 years. He added that Scrapie prions have been found in soil and barn dust. Scrapie work provides an upper bound for prion survival in the environment, 16 years.

Dr. Larsen explained that CWD can spread from deer to the environment and then infect other deer. CWD positive cervids output infectious prions through urine, feces and carcasses and it is unknown how long they remain infectious.

Dr. Larsen reported that Colorado is considered the epicenter of CWD; where CWD was first identified in a research facility in the 1960s. He presented that in Fort Collins in 1985, the paddocks at the facility that had housed CWD infected elk were treated with bleaching powder and left fallow for one year. These paddocks were then reestablished with elk herds who subsequently became infected less than 3 years later.

Dr. Larsen presented an additional study conducted with mule deer in Colorado in 2004. He explained that there were 3 study groups, group 1 had direct contact with CWD positive animals, group 2 was housed with a decomposed CWD infected carcass placed in the enclosure 1.8 years prior to exposure and group 3 was housed with feces from CWD infected animals which had been there for about two years. Mule deer in all three enclosures contracted CWD.

Dr. Larsen pointed out that there is a lot of ongoing research focused on CWD prion survival in soil. Soil can serve as a source of infectious prions which end up there from output from infected animals; feces, urine carcasses.

Dr. Larsen stated that soil type matters. Clay, kaolinite and quartz soils can enhance infectivity. Cervids ingest soil both deliberately and incidentally. Soils with significant organic matter have been shown to reduce infectivity. Understanding soil types may help us better understand how this disease will continue to spread. CWD strain variation, species, local environments and weather can also impact infectivity

Dr. Larsen stated that “Everyone wants to know how long CWD can survive in the environment. The bottom line is that we don’t know what the upper limit for CWD survivability is”. The long 10 to 16 year estimates come from Scrapie literature and Scrapie shares a lot of commonalities with CWD.

Dr. Larsen summarized his presentation by stating that cervid herd size, species, and location can all influence infectivity and length of CWD prion survival. He further stated that we need more research focused on what is happening in Minnesota. MNPRO is generating risk maps, obtaining soil samples from infected farms and working on protocols for looking at soil testing with Real-time quaking-induced conversion (RT-QuIC). Dr. Larsen commented that we need to think about additional remediation strategies to breakdown CWD prions.

Rich Meech addressed Dr. Larsen and thanked him for his time. Mr. Meech inquired in reference to the Colorado study with three pens, “how do we know that the animals that were added to the pens were unaffected [by CWD]?”

Dr. Larsen responded that the animals originated from an area unaffected by CWD, i.e. from a geographic area where CWD had not been found previously.

Linda Glaser addressed Mr. Meech, asking him if he wanted to revisit his earlier questions posed to Dr. Scheftel.

Mr. Meech asked, “how was scrapie eradicated and is this a method that can be transferred to the cervid industry?”

Peter Larsen stated that sheep producers have developed breeding programs over decades using genetically resistant animals, but this method “is not 100%”. He explained that there have been genes identified in Cervids that are considered resistant, but for any animals that contract the disease it is 100% fatal. He added that potentially, breeding programs could be started to develop genetic resistance but that doesn’t solve the problem of environmental contamination and it will just take longer for resistant animals to become infected.

Rich Meech asked, “what is the infectious dose for CWD, for example, how much is need for the prion to spread through nose to nose contact, bird feces, or urine?”.

Peter Larsen cited a study conducted two months ago concluding that exposure to 300 nanograms of CWD positive brain tissue was able to cause infection in live animals. He explained that this amount equates to the weight of a penny. Dr. Larsen stated that CWD is highly infectious and the dose needed to cause infection in millions of animals is very small. When you look at specific transmission routes, there are many complex variables that may contribute to spread.

Beth Thompson, Executive Director of the Board asked if there “are any studies about BSE in the environment?”

Dr. Larsen confirmed that there are studies looking at BSE prion survivability. He stated that, “All prion diseases have commonalities, but I don’t know off the top of my head what the upper limit for survivability of BSE prions is”.

Linda Glaser suggested that Dr. Larsen take questions from the public.

Public Comments

Annie Balghiti announced that the meeting would open for questions or comments from members of the public, reminding everyone to please announce their name and affiliation.

Jim Byrne, Minnesota Elk Breeders Association addressed Dr. Glaser stating, “if an animal running at large is no longer considered the responsibility of the owner after 30 days, it is considered lost, then it is no longer the responsibility of the owner to provide a sample of that animal. Therefore, a missed sample from these animals should not count against the producer”.

Dr. Glaser stated that after 30 days the Board doesn’t have the authority to determine who is responsible for the animal. After 72 hours the owner is issued a Notice of Violation to recover the animal. If the animal is not recovered within thirty days of the notice, the owner is issued a fine.

Todd Miller, Vice President of Minnesota Deer Farmers Association addressed Dr. Larsen stating, “Every article states urine, feces, saliva and now carcasses can contain infectious prions, why not include blood when considering which fluids can spread CWD?”

Peter Larsen confirmed that CWD prions can be detected in blood.

Mr. Miller followed with a question, “Then why doesn’t the DNR ask hunters to pick up carcasses being left all over the landscape?”

Peter Larsen reiterated that a positive animal will have prions in blood.

Mr. Miller commented, “the legislature gave you guys [MNPRO] a bunch of money which will be reevaluated this spring; is a live animal test going to be ready?”

Dr. Larsen stated that thanks to the legislature Minnesota has RT-QuIC functionality, which is a live animal test, in the research lab. He added that validation with USDA will take time and that MNPRO will be submitting three different provisional patents for approval. Dr. Larsen reiterated that his lab has a research focused test that can evaluate samples from live animals.

Amy Cordry referenced the part of Dr. Larsen's presentation that illustrated the Scrapie positive ram in Iceland and asked if Scrapie was spread in this case via semen.

Dr. Larsen responded that he thought that this was correct, but the ram was shipped all over the country, so Scrapie was also likely spread through direct contact.

Gary Olson, Minnesota Deer Farmers Association commented that the infectious dosage of CWD was never really addressed. He stated that in the study referenced by Dr. Larsen indicating that 300 nanograms of brain tissue was infectious, it went on to say that after the brain tissue was divided researchers were no longer able to confirm infectivity. Mr. Olson pointed out that just because we can find CWD prions through amplification, doesn't mean that they are infectious. He referenced a study performed Dr. Don Davis with Texas A&M University, that showed the infectious dose might have be more than ton of dirt (<https://texasdeerassociation.com/fake-chronic-wasting-disease-news-or-scientific-misinformation-on-cwd/>). Mr. Olson summarized his comments by stating, "The fact that we can find it is great, but does it really mean anything?"

Peter Larsen referenced the animals in the Colorado study he previously cited that were put into a pen with infected feces and got CWD. He also stated that challenge experiments have been conducted using rodents and MNPRO is obtaining funding for a rodent colony to conduct research to determine infectivity.

Mr. Olson stated that his understanding of that study was that positive urine and feces were fed to the deer for over a year. Mr. Olson went on to say that in the 1930s there were no deer in Southeastern Minnesota; they are a fairly new species in that area. In the 50s and 60s everyone had sheep, and no one was concerned about Scrapie. He asked if we should consider the potential that CWD may have originated from environmental contamination in pens previously housing sheep.

Adjournment

No other comments were noted. Dr. Larsen stated that he will accept e-mailed comments or questions. Annie Balghiti announced the official end of the meeting. She stated that we did not get all the way through the most recent rules draft so the Board would send another survey with dates and times to meet.

Ms. Balghiti thanked the committee for all of their work on amending the Board's farmed Cervidae rules.

Next Meeting

Date: 11/30/2020

Time: 1:00 PM-3:30 PM

Location: Virtual Meeting via Microsoft Teams