Greetings from Dr. Keller:

Greetings and Happy New Year to each of you,

Given it’s the year 2020, I thought it might be interesting to ask, “What is your vision for the future of animal health?” The definition of vision for this purpose is: a declaration of objectives to guide decision-making. I am not normally a big fan of spending time creating vision statements, which are oft like New Year resolutions and are not closely adhered to; however, for animal health purposes, it is a thought-provoking question no matter what disease or animal health issue it’s applied to.

I thought it might be helpful to share some trends from the past and then offer some predictions for the future. I don’t think that what I ideally want to envision for the future, which is eradication of every disease, is going to be attainable. Dr. Carlson has equated our jobs to being similar to playing the old Whack-a-Mole game… just when we knock one disease down another one pops up! I’m sure your practices are much the same. It is critical, though, to keep a clear vision in mind of the actions needed in order to have any hope of achieving the goal of disease eradication or even control. You don’t have to worry about what we will do should we ever eradicate age-old diseases like Brucellosis or TB. There seems to be no end to the list of emerging or re-emerging diseases, which we will continually need you to help us be vigilant and monitor for.

The world becomes smaller as more people and animals travel farther and travel more often. Should you suspect an unusual disease situation, please call the office before you send samples off and ask for a foreign animal disease test. We encourage you not to assume anything if there are unusual morbidity or mortalities. We can help with the cost of testing if needed. You can act as a foreign animal disease diagnostician liaison if a state or federal veterinarian is unable to get to your client or your clinic quickly enough. We will help with the necessary forms and shipping arrangements and can usually help with associated expenses.

From a practical regulatory disease perspective, it seems that eradication programs are in name only and are becoming much more focused on controlling diseases versus eradicating them due to economic and logistical constraints. Risk assessments are also becoming a standard part of discussions and lingo as it pertains to how we can restrict animal movements in a limited way, with more focus on how we need to allow movements of animals within established or contiguous business units. The goal is to avoid market disruption and to make sure that a larger crisis is not caused through unintended consequences of regulations and restrictions such as a food shortage, which can easily happen if you’ve been paying attention to what ASF has done in China and other countries.

A lack of funding, as well as the increasing size of groups of animals, is driving the direction of regulatory programs. We are often told the pie is only so big and funds will be further limited, and in the future tied more to auditable biosecurity plans. Seeking federal funds to cover emergencies was rarely questioned in the past. But now our federal counterparts are told we will likely only have whatever the limited amount of annual funds which are available to USDA-APHIS-VS to address the animal health diseases that still fall under the federal-state-producer cooperative disease programs. There are rare exceptions, such as additional funds approved last year by Congress for a more robust FAD vaccine bank, funding for the NAHLN labs and funding for emergency response and preparedness efforts.
The other trend that is continuing to pick up momentum is the push to have Secure Food Supply plans in place for all commodities. The terms and concept behind the Secure Pork, Secure Poultry and Secure Beef Supply plans have picked up a lot of support. It concerns me that they didn’t call them the Secure Pigs, Secure Chicken or Secure Cattle plans. I hope our vision remains trying to keep diseases out of our national herd, our state herds and our local herds. But the focus has definitely shifted in recent years, first most notably in terminology used, such as FSMA (Food Safety Modernization Act). Yes, we all want to have safe and wholesome food to eat, but someone still needs to remain focused on or continue to prevent the spread of diseases into our animal populations, whether pets or livestock, as a matter of preventing production losses and to help prevent animal suffering due to diseases. Kris Ringwall used to end his articles with “May you find all your tags!” I agree with Kris and would just like to add a suggestion that we need you to pass on to your clients. When you find all the tags, brands, tattoos or the microchip info…. may it be recorded on something and may someone know where that info is, just in case we ever need that info in a hurry.

On behalf of everyone in our office, we thank you all for the work you do and we look forward to hearing from you in the coming year.

May you have a productive, healthy and prosperous new year!
Susan

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### Using Pesticides Safely

Most people use pesticides, and some are not aware they are using a product classified as a pesticide. The definition of a pesticide is any substance or mixture of substances intended for preventing, destroying, repelling or mitigating any pest. By this definition, disinfectants, which are commonly used in healthcare facilities, veterinary clinics, daycares and most homes are classified as pesticides.

We are reaching out to create awareness and give some tips on how to safely use pesticides.

1. **Always read the label** - The label gives you the required information on how to use the product safely. Some important information you will find on the label is the use rate, proper equipment you need to wear to apply the product, first aid in case you have an accident, and how to store and dispose of the product.

2. **Use registered products** - It is the law that all pesticides need to be registered by the North Dakota Department of Agriculture. If you go to www.kellysolutions.com/ND, you can do a search for the product you intend to use. If you do not see your product listed on the website it is likely not registered for use in North Dakota and is illegal to use.

3. **Storage** - Keep concentrated products in the original container. If you are mixing up a solution from concentrate, you may put the mixed solution in another container such as a spray bottle. It is good practice to write the name of the product on the new bottle, so others are aware of what is mixed. If your container has a label that can be removed it must remain on that container as long as there is product left in the container. Store pesticides away from food and water and keep in a location away from unauthorized access.

4. **Usage** - It is imperative to read and understand the label to use products safely. Certain products require proper ventilation, specific personal protective equipment and other safeguards to protect users and others from adverse health effects. Several labels specify drying times or re-entry intervals. Do not allow others or animals to come in contact with treated areas until these conditions are met.

If you have any questions regarding pesticides or pesticide use, please contact the North Dakota Department of Agriculture’s Pesticide Outreach Specialist. This position is non-regulatory and was designed to assist all pesticide users with the requirements and reasons to use pesticides safely. Communication with the Pesticide Outreach Specialist will be kept confidential. Pesticides are important tools and when used properly, ensure safe and healthy communities with minimal risk to human health and the environment.

Jeremiah Lien
Pesticide Outreach Specialist
701-425-3016
jjlien@nd.gov
Preventing Pentobarbital Residues and Unintentional Poisonings

The Food and Drug Administration (FDA) has determined that:

- Pentobarbital is a hazard in ingredients fed to pets and other animals.
- Animals euthanized with pentobarbital cannot be used to make animal food.

Because the FDA has not established a tolerance for pentobarbital, animal proteins (such as meat and bone meal) and animal fats tested and found to have detectable levels of pentobarbital present cannot be used in food for any animal. This means that animals euthanized with pentobarbital cannot be rendered and should be properly disposed of immediately.

Non-chemical forms of euthanasia must be used if animals are to be rendered, such as captive bolt or gunshot. If using pentobarbital, please clearly communicate, preferably in writing, that rendering is not an option to dispose of the carcass with your client. The North American Renderer’s Association recommends calling the rendering plant that services the client’s farm or operation to notify the dispatcher of the farm and type of animal euthanized with pentobarbital and establishing a system for permanently marking animals euthanized with pentobarbital.

Ear tags can be easily removed or lost which makes them unacceptable for identifying animals given pentobarbital. Therefore, the preferred method for identifying pentobarbital-euthanized livestock and other large animals is by prominently marking the head with a large “P” using fluorescent orange-colored “All-Weather Paintstik.”

Please be aware that individual renderers may have different marking requirements or may not accept horses or euthanized animals at all. Producers should always disclose the cause of death when requesting rendering services.

Why is rendering animals euthanized with pentobarbital an issue now?

Historically, horses and other livestock euthanized with pentobarbital or other barbiturates were rendered. This practice was allowed because FDA data indicated animal proteins and fats derived from rendering euthanized animals mixed with other animal byproducts were safe to use in animal food. However, the FDA changed its thinking about pentobarbital because canned pet foods made with meat harvested from euthanized livestock was thought to be the cause of death for several dogs. The tainted pet food contained meat/organs harvested from cattle that had not been rendered. Even though no rendered products were implicated in the death of these pets, the FDA banned any detectable amount of pentobarbital in any food for pets and other animals. The scope of this ban means that animals euthanized with pentobarbital can no longer be rendered. The detection limit of the method FDA uses to test for pentobarbital is so low (10 ppb) that rendering one euthanized cow or horse of average size could contaminate an entire day’s production of finished animal fat and proteins with detectable levels of the drug.

Rendered products, such as meat and bone meal and tallow, are frequently used as ingredients in nutritionally-balanced foods manufactured for livestock, poultry and companion animals to consume.

Why is it important to permanently identify animals euthanized with pentobarbital or use other methods for euthanasia?

The rendering process does not inactivate or destroy some chemical hazards, including pentobarbital. Renderers must either prevent such hazards from entering a rendering plant or test for chemical hazards to make sure contaminated product is sold for non-feed uses. Such test and positive release programs work for rendered fats but are not feasible for animal proteins because of lack of storage space. Therefore, renderers must exclude materials likely to contain the chemical hazard. Horses are considered a high risk for pentobarbital because they are often considered pets and it is difficult to determine if a horse was euthanized with pentobarbital or died from other causes. As a result, most renderers have stopped processing horses. The remaining challenge then is to avoid rendering other sources of pentobarbital, including some dairy cattle and livestock from hobby farms.

Even though rendering is not an option in North Dakota at this time, it is still important to be aware of this issue.

The U.S. Fish and Wildlife Service (FWS) published the FWS Fact Sheet Secondary Pentobarbital Poisoning of Wildlife (https://www.fws.gov/mountain-prairie/poison.pdf) which discussed reports from 16 states where bald and golden eagles, other wildlife and domestic dogs died after scavenging pentobarbital euthanized animals. FWS concluded that pentobarbital-euthanized carcasses should not be rendered, nor should they be disposed of where wild and other animals can access the carcass. To prevent instances of secondary poisoning, only deep burial, incineration or landfills able to quickly cover carcasses should be considered. Most composting options and certainly abandonment should not be viable options. In some cases, livestock owners and veterinarians causing such unintentional poisonings may be held liable and subject to fines and/or criminal prosecution under the Migratory Bird Treaty Act, The Bald and Golden Eagle Protection Act or The Endangered Species Act.

Thanks to the North American Renderer’s Association for providing information for this article.
Program Updates

ADT
- USDA recently announced that a limited number of low frequency RFID tags will be made available to states, in addition to the metal brite tags provided for regulatory purposes. North Dakota could receive up to 160,000 low frequency RFID tags from USDA. The Animal Health Division continues to offer orange RFID tags for brucellosis vaccination purposes at a minimal cost. Please see the link to the order form at the end of the newsletter (and on our website, under “forms”) for information regarding all supplies available from the office. [https://www.nd.gov/ndda/sites/default/files/Order%20Request%202019365%201-2019.pdf](https://www.nd.gov/ndda/sites/default/files/Order%20Request%202019365%201-2019.pdf)

*There are also 840 Ultra-High frequency (UHF) tags which are recognized as official, but USDA is not providing UHF tags at this time.

Johne’s
- Johne’s disease continues to be a serious problem affecting the livestock industry in North Dakota. The North Dakota Johne’s Disease Control Program has been quite helpful for many producers and continues to provide testing cost share for herds in the first three years of participation in the program. After the first three years, herd owners are encouraged to continue testing. Herd owners should work with their veterinarians to develop a testing strategy most appropriate, considering the estimated level of infection, risk of within herd transmission, likelihood of spreading infection to another herd via sale of breeding animals and financial resources.

Non-Traditional Livestock
- Non-Traditional Livestock (NTL) includes almost all privately owned animals typically thought of as exotic or non-domestic. It includes such species as pheasants, Muscovy ducks, bobcats, wolf-hybrid dogs, monkeys, servals, farmed deer, pet fox and reticulated pythons. Farmed elk are technically not NTL, but they are treated very similarly for regulatory purposes. Specific licensing, health and housing requirements are in place for many species. If a request is made to import a species which has not yet been classified, the NTL Advisory Council will make recommendations to the Board of Animal Health on what requirements are appropriate. Individuals interested in obtaining any NTL or farmed elk, including game birds, should contact the Animal Health Division prior to obtaining the animal to ensure that all requirements are met. Veterinarians should report any unlicensed NTL to the office.
Disease updates

Asian Longhorned Tick

*H. longicornis* may be responsible for recent infections of cattle with *Theileria orientalis* in West Virginia and Virginia. It is believed that the invasive tick was introduced on multiple occasions to the U.S. mainland via international movement of people and pets. As of December 2019, the tick has been identified in 12 states and reported on a variety of wildlife, livestock and domestic animals. The Asian Longhorned tick has been documented to bite humans. Recent experiments have shown that *H. longicornis* is not a competent vector of Lyme disease and will not readily feed on rodents.

African Swine Fever

African Swine Fever continues to spread in European wild boar and commercial swine in southeast Asia. There is no effective treatment and an effective commercial vaccine is still years away from production. The risk of introduction into the U.S. is highest through illegally imported pork products, agritourism and contaminated feedstuffs. To build animal health response capacity in the event of an ASF outbreak in the U.S., the North Dakota reserve veterinary corps focused training efforts on identifying this and other foreign and emerging diseases, practiced sample collection and submission and discussed biosecurity and depopulation, disposal and decontamination options for commercial and feral swine.

Rabies

2019 Data from ND DOH website

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The Rabies FA test cannot be reported as negative unless performed on both halves of fresh tissue. If only half of the brain is submitted, rabies cannot be definitively ruled out and the test will be reported as “inconclusive”.

If rabies is suspected...

SEND WHOLE FRESH BRAIN TO THE LAB.

DO NOT put half of the brain in formalin.

As a reminder, please use appropriate Personal Protective Equipment (PPE) when removing brains. In addition to gloves, ocular and respiratory protection is recommended, especially if using power tools.
EHM update
North Dakota has reported nine cases of Equine Herpes Myeloencephalopathy (EHM) in 2019 on two premises. The first case occurred in July in McKenzie county. A single horse was identified and quarantined while receiving care. Three other exposed horses did not exhibit signs and quarantine was released following recovery of the affected animal and subsequent negative PCR tests.

Eight additional EHM cases - two confirmed and six presumptive - were reported in December in Bottineau county. Of these, five horses died or were euthanized due to progressive neurologic signs. The remaining three affected horses are recovering from mild hindlimb ataxia and/or urine dribbling. Within this group of 150 unvaccinated horses, four abortions were also reported and 10 other horses were reported presumptively affected with Strangles due to the presence of submandibular lymphadenopathy and draining lesions; samples were not submitted for laboratory confirmation. None of the horses with abscesses have showed neurologic signs, and none of the neurologic horses have had lymphadenopathy or draining lesions. One additional horse exhibiting single limb edema is thought to be an unrelated traumatic injury. No horses have demonstrated cough, notable nasal discharge or other respiratory signs and the group remains under quarantine per the Board of Animal Health EHM response protocol.

Since January 2019, 22 states have reported outbreaks of EHM, primarily in competition Quarter Horses and Warmbloods. Based on available information in press releases, the majority of cases occurred in unvaccinated horses, with vaccination history unknown, incomplete or overdue in the remainder. Vaccination against EHV-1 and EHV-4 does not protect against development of the neurologic form; however, viremia and shedding are significantly reduced and may limit extent and duration of outbreaks. Vaccination in the face of active infection and clinical signs remains controversial.

Signs of herpesvirus infection may be mild with a wide range of symptoms; neuropathy typically occurs one to two weeks after fever and nasal shedding have peaked. Fever is often of short duration and missed by owners or trainers. Diagnosis may be made from nasal swab, blood samples, or testing of nervous tissue or spinal fluid. Because the timing of exposure is generally unknown and presence of virus in body fluids or nasal secretions may not be at detectable levels, submission of more than one type of sample is recommended. It is expected that any horse that dies or is euthanized after showing any degree of neurologic abnormality should be tested for rabies due to public health concerns. If rabies negative, a definitive cause of death should be pursued including testing for WNV and equine encephalopathies (EEE, WEE, VEE) in addition to EHM.
Bovine Tuberculosis

The last year has kept the Animal Health Division busy with TB investigations. It would not have been possible to complete the investigations without the cooperation of the herd owners and the assistance of USDA-Veterinary Services, USDA Wildlife Services field staff, and Dr. Brett Webb at NDSU.

Oliver County Dairy

- An Oliver County Dairy herd was tested in 2013 after an employee was diagnosed with advanced tuberculosis. Herd testing identified a total of three positive cows. Due to the size and type of operation, a test and remove protocol was utilized. After three negative whole herd tests, the herd was released from quarantine and placed on a five-year herd plan, which required annual herd tests. The final herd test was completed in November of 2019. Epidemiologic information strongly supports that the employee was the source of infection.

South Dakota Feedlot Trace

- In the summer of 2018, a black steer with no official identification was slaughtered at a South Dakota processing plant and was confirmed to have TB. An investigation by the South Dakota Animal Industry Board led to a feedlot that sourced the calves from 99 herds in five states. Twenty-four of those herds were located in North Dakota, and 21 of those herds were still operating and in business. Whole herd testing of all cattle 24 months of age and older in those herds began in November of 2018 and was completed in December of 2019. In total, 4,300 cattle and six goats were tested in North Dakota. No herds were identified as having bovine TB. A small number of herds in other states remain to be tested, but the majority of testing in other states is complete. Unfortunately, due to the lack of official ID and negative test results thus far, the source of infection may not be identified.

Sargent County Beef Herd

- Late in the fall of 2018, two cull cows from a Sargent County beef herd were found to have TB lesions at slaughter. A whole herd test was completed in December. Of the 103 cattle tested, 14 were suspect on the caudal fold test (CFT). Following the comparative cervical test (CCT), all were classified as TB reactors. Due to the size of the herd and the estimated prevalence in the herd, federal indemnity for the entire herd was requested and approved. The reactors were euthanized on farm and necropsied at the NDSU Veterinary Diagnostic Laboratory in January and February. Seven of those caudal fold suspects were positive for TB by PCR and/or culture, including two that tested negative on the CCT. The remaining adult cattle which tested negative on the CFT were shipped to slaughter and underwent enhanced inspection. As a result, two additional positive cattle were identified. In total, eleven cattle from this farm were confirmed to have TB. After all cattle were removed, the premises was cleaned, hard surfaces were disinfected, and the facility sat empty for more than 60 days. The herd is approved to restock, but will need to undergo a herd test of all cattle more than 24 months of age 6-12 months after restocking.

Texas Dairy Trace

- In August of 2018, 315 dairy heifers were legally shipped from Kansas to North Dakota. In the spring of 2019, the Animal Health Division was notified that an unknown number of heifers within that group originated from a dairy in Texas that was now TB affected. An inventory of the heifers was completed, which identified 29 heifers with official ID that traced back to the TB Affected Dairy and 28 additional heifers that had lost their official ID, but had secondary ID that suggested that they originated from the TB Affected Dairy. USDA approved indemnity for the 29 with official ID but not for the 28 with only secondary ID. The State Board of Animal Health and the Agriculture Commissioner worked cooperatively to provide state funding to provide indemnity for the 28 heifers. The remaining heifers in the group were TB tested twice, 6 months apart and have been released from quarantine.

Updated Guidance for Euthanasia

The American Veterinary Medical Association recently revised guidance for euthanasia. “AVMA Guidelines for the Euthanasia of Animals: 2020 Edition” is now available online. The AVMA Panel on Euthanasia develops the content of the guidelines, with support from its working groups. The panel is required to do a comprehensive review and update of the report at least every 10 years, although more frequent major revisions are possible based on substantive information gleaned from new research and experience with practical implementation.


North Dakota State Board of Animal Health

For more information on these and other topics, please contact us:

Office: (701) 328-2655 | Toll Free: 1-800-242-7535
Email: doa-bah@nd.gov

Email Updates

Veterinarians wishing to receive timely information regarding disease situations can sign up for periodic email updates from the Board of Animal Health. To get on the list, contact tcelley@nd.gov, or call (701) 328-2655.
One Health Corner: Leptospirosis

Leptospirosis is an emerging zoonotic disease found across the U.S. with increasing incidence. Human leptospirosis infections are rising, despite under-diagnosis and under-reporting. Infection typically causes mild to moderate influenza-like illness that is self-limiting or resolves after antibiotic therapy. However, up to 10% of infected people develop a serious form of the illness which can result in high fever, jaundice, meningitis, kidney failure, internal bleeding and, occasionally, death.

The Gram-negative spirochete enters the body through cuts in the skin and through mucosal linings of the eyes, nose and throat. NIAID and Johns Hopkins investigators identified Leptospira interrogans in 19 of 21 rats trapped in Baltimore alleys where two patients had sustained cuts before illnesses developed. One patient cut their foot walking barefoot in the alley. The second cut a hand on broken glass. Although a variety of mammals worldwide harbor the infection, the most common carriers are rats, dogs and livestock. Human-to-human transmission has not been reported.

People traditionally recognized at highest risk for leptospirosis are those engaged in certain occupations (farmers, veterinarians and sanitation workers) or recreational activities (campers, freshwater swimmers) and those exposed to flood water. Travel to endemic tropical areas such as Hawaii is also a risk factor. Several studies have now established an increased risk of unrecognized leptospirosis to residents of U.S. inner cities including one article that reported about one-third of children tested in Detroit had antibodies to, yet none had been diagnosed with, leptospirosis.

Leptospires do not replicate in soil or water but remain viable for months to years in moist conditions. In livestock and dogs, ingestion of infected meat or feed, contact with urine-contaminated water, bedding or soil, and direct contact with wildlife are the most common routes of transmission. Animals are also at risk for leptospirosis following flooding, as well as during drought when wildlife may be sharing available water sources with domestic animals. In all mammals, including humans, transmission can occur through bite wounds. Outdoor, intact, and working dogs are at highest risk, though any canine may be affected. Seasonal increases in cases are diagnosed following fall hunting and harvest activities. Small dogs in suburban settings with backyard wildlife contact are also at risk, with most cases exposed between July and October.

Livestock and dogs are commonly vaccinated against leptospirosis, however, 23 pathogenic serovars are now recognized and cross-protection between strains is poor. Chronic carrier states can be established in livestock and pets. Treatment failures are common, though whether this is a result of ineffective antibiotic use or due to re-exposure is unclear. Diagnostic and treatment guidelines for livestock have been recommended by AABP and Merck. ACVIM published a Consensus Statement on canine leptospirosis in 2010.

Reminder: Leptospirosis is a laboratory-reportable disease in North Dakota. Veterinarians who submit samples for testing to out-of-state or unaccredited laboratories should forward positive test results for Leptospirosis, Campylobacter, West Nile Virus and other laboratory-reportable diseases to the Animal Health division of the North Dakota Department of Agriculture. For veterinarians who are uncomfortable discussing zoonotic implications and recommendations for self-protection activities with owners of Leptospira positive animals, staff at the Department of Health are glad to facilitate that conversation.
How to Obtain Official ID in 2020

Producers and veterinarians can order official 840 RFID tags direct from manufacturers or from AIN managers. A complete list of approved devices can be found online at:

Before ordering official RFID tags, a registered premises ID number (PIN) is needed. To update your information or to request a PIN, call the Animal Health Division at 701-328-2655.

The Animal Health Division currently has a supply of orange RFID brucellosis vaccination tags available, which can be ordered by veterinarians at minimal cost (while supplies last). These tags may only be used by veterinarians when applied to cattle and bison at the time of calfhood brucellosis vaccination.

Official USDA metal tags, or “brite” tags, and traditional metal brucellosis tags are available to veterinarians from the Animal Health Division as well.

Veterinarians can order tags and other supplies using the form found at the following link:
https://www.nd.gov/ndda/sites/default/files/Order%20Request%202019365%201-2019.pdf

As a reminder, all official tags display the U.S. shield, and a record of official identification applied must be kept for at least five years.
In this Animal Health News...

- Where To Order Official ID in 2020
- One Health Corner: Leptospirosis
- Disease Updates
- Program Updates
- Preventing Pento- and Unintentional Poisonings
- Using Pesticides Safely
- A note from the State Veterinarian