

*American Association of Extension Veterinarians
2020 Applied Animal and Public Health Research and Extension Symposium
10:00 – 1:00 pm EDT October 21, 2020 (virtual)
Chair: Molly Lee Vice Chair: Jim Fairles*

Agenda

10:00-10:15	Presentation	<i>“Extension Veterinarians – Who we are, What we do, Why you should join us!”</i>
10:15-10:20	Q&A	Danelle Bickett-Weddle
10:20-10:35	Presentation	<i>“Seroprevalence of Brucella canis in dogs rescued from South Dakota Indian Reservations, 2015-2019”</i>
10:35-10:40	Q&A	Russ Daly
10:40-10:55	Presentation	<i>“Designing and Implementing Biosecurity Program for Youth Equine Events”</i>
10:55-11:00	Q&A	Karl Hoopes
11:00-11:15	Presentation	<i>“Honey Bees, Disease and Regulatory and Inspection Programs That Address These in North America”</i>
11:15-11:20	Q&A	Paul Kozak
11:20-11:35	Presentation	<i>“Intraobserver and interobserver reliability of mud scoring systems for use in cattle at slaughter”</i>
11:35-11:40	Q&A	Sage Mijares
11:40-11:55	Presentation	<i>“Communicating about pets and other animals during the COVID-19 pandemic”</i>
11:55-12:00	Q&A	Laura Murrell
12:00-12:15	Presentation	<i>“Attitudes, behaviors, and knowledge of Utah agritourism operations”</i>
12:15-12:20	Q&A	Kerry Rood
12:20-12:35	Presentation	<i>“Rat Lungworm Disease Outreach to the Veterinary Community & Beyond”</i>
12:35-12:40	Q&A	Jenee Odani
12:40-12:55	Presentation	<i>“National Animal Health Monitoring System Update”</i>
12:55-1:00	Q&A	Katherine Marshall

To participate in the symposium as an attendee, visit the AAVLD/USAHA Annual Meeting 2020 virtual event platform online!

Seroprevalence of *Brucella canis* in dogs rescued from South Dakota Indian Reservations, 2015-2019

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¹South Dakota State University, Brookings SD; ²Lightshine Canine: A Rez Dog Rescue, Longmont CO; ³Butler Veterinary Clinic, Valentine NE; ⁴Fall River Veterinary Clinic, Hot Springs SD; ⁵Beguin Veterinary Service, Rushville NE; ⁶High Plains Veterinary Clinic, Martin, SD

Background

Brucella canis causes reproductive failure and chronic infections in dogs and is recognized as a zoonotic threat. The identification of infected dogs originating from and around two South Dakota reservations prompted an examination of the seroprevalence of *B. canis* in stray or owner-surrendered dogs from these communities.

Methods

Serum samples from stray or surrendered dogs from 2 South Dakota Indian reservations and surrounding areas presented to cooperating veterinary clinics from November 2015 through December 2019 for adoption were tested for *B. canis* by either indirect fluorescent antibody assay or rapid slide agglutination followed by 2-mercaptoethanol. Test results and demographic information for each dog were recorded, compiled, and analyzed.

Results

Test results were obtained for 3,898 dogs, with an overall seroprevalence of 6.8% (adjusted estimated true prevalence of 29.4%). Seroprevalence decreased over time, from 8.6% in 2015 to 5.1% in 2019. The proportion of male dogs testing positive (6.6%) was similar to that of female dogs (6.4%). Seroprevalence was higher in intact dogs (6.9%) vs. altered dogs (2.8%), but this difference was not statistically significant.

Brucella canis seroprevalence increased with the age of dog tested, with the highest rates in dogs estimated to be over 2 years of age (8.5%), and lowest in dogs less than 15 weeks old (3.2%).

The geographic origin of dogs affected *B. canis* seropositivity rates, with higher rates in dogs from one reservation (21.6%) compared to the other reservation (6.0%).

Conclusions

The apparent *B. canis* seroprevalence in this population was similar to rates in shelter and/or stray dogs elsewhere in the US. The lower seroprevalence in spayed or neutered dogs and younger dogs also agreed with previous work.

Brucella canis seroprevalence declined over time, potentially due to removal of seropositive dogs from the area over the study period. Higher seroprevalence on one reservation suggests that local differences in transmission dynamics may exist.

Because of the potential for *B. canis* to infect other dogs and people, stray dog populations should be screened for *B. canis* before those animals are placed in adoptive homes.

Designing and Implementing Biosecurity Program for Youth Equine Events

KH Hoopes, J Hadfield, M Hendrickson

Utah State University, Logan UT

Recent outbreaks of life-threatening diseases at equine events has increased awareness of and the need for biosecurity policies at equine events. Designing and implementing an equine biosecurity program can be a daunting undertaking. Lack of knowledge and tradition seem to be the biggest hurdles to overcome while implementing these programs. Recently, Utah 4-H Horse Programs in collaboration with Utah State University Extension Specialists developed and implemented a successful biosecurity policy and program specific for youth equine events. The new biosecurity policy focuses on education of best practices before, during, and after an equine event. Implementation included the delivery of the policy, creating and distributing educational events and materials, and putting the policy into action. The new biosecurity policy and program was successfully adopted with minimal negative feedback and successful equine events.

Honey Bees, Disease and Regulatory and Inspection Programs That Address These in North America.

P.R. Kozak

Provincial Apiarist / Apiary Specialist – Ontario Ministry of Agriculture, Food and Rural Affairs

B. Stanford

Assistant Bureau Chief, Apiary Inspection Section, Bureau of Plant and Apiary Inspection, Florida
Department of Agriculture and Consumer Services

Veterinarians in North America have become more engaged in apiculture due to the need for a veterinary prescription to obtain and use antibiotics that beekeepers apply to their honey bee colonies to address brood diseases. There have been various strategies and initiatives to facilitate veterinary-beekeeper communication – at a national level and at the provincial and state level. Some of these have involved webinars, classes, and in-person trainings hosted by extension specialists or government agencies. Many groups have come together to facilitate these relationships, including apiary inspectors, veterinarians, beekeepers, and professional and industry associations to name a few. Given that bees are such a new livestock species (or companion animal) to the majority of veterinarians, there may not be an awareness of the regulations, requirements and programs (both regulatory and advisory) that exist as part of the apiary framework in North America. This will provide some background and insight into the world of bees, examples of inspection activities and regulations, as well as how pests and diseases in apiculture are addressed in two inspection programs in North America.

Intraobserver and interobserver reliability of mud scoring systems for use in cattle at slaughter

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In feedlots and at slaughter plants, live cattle are often scored for the amount of mud on their hides. Mud on hides is a public health concern and potential food safety issue as mud and manure on hides of cattle processed at slaughter facilities presents a source of possible carcass contamination. To facilitate food safety risk assessment and to deploy appropriate interventions during processing, slaughter plant employees must be able to objectively assess the mud coverage of cattle hides prior to processing. Currently, there is no single standardized method utilized to assess mud coverage on cattle. The aim of this study was to determine the intraobserver and interobserver reliability of 3, 4, and 5 point mud scoring systems at a commercial slaughter facility. Beef cattle (n=110) were videotaped during movement to holding pens upon arrival at a commercial slaughter facility. Five scorers were randomly assigned to a 3, 4, or 5 point scoring system (n=15). Each scoring system quantified the percentage of hide covered, plus the size of mud clumps on the hide. Scorers reviewed the video and assigned each individual animal a mud score, repeating the process 3 times with the order of the video clips randomized each time. A multi-rater weighted kappa analysis was used to determine intraobserver and interobserver reliability for each system. Some scorers demonstrated moderate intraobserver reliability, with the greatest intraobserver kappa for 3, 4, and 5 point scoring systems being 0.85, 0.45 and 0.61 respectively. However, the interobserver reliability kappa for 3, 4, and 5 point systems (0.12, 0.08 and 0.04 respectively) all indicated poor agreement. Results from this study suggest that the scoring systems utilized are not a repeatable method for mud scoring cattle. Further exploration to develop a suitable system that is repeatable is recommended in order to increase intraobserver and interobserver reliability.

Communicating about pets and other animals during the COVID-19 pandemic

A. Carpenter, C. Barton Behravesh, L.S. Murrell

Centers for Disease Control and Prevention

At the beginning of the COVID-19 pandemic, little was known about the susceptibility of animals to SARS-CoV-2 infection and signs of disease in animals. This lack of knowledge made communicating risks of SARS-CoV-2 transmission to and from animals difficult. Throughout the response, the CDC COVID-19 One Health Working Group has led the development of messaging and guidance related to animals and SARS-CoV-2. As our understanding of the virus has evolved, so have CDC's messages regarding the transmission dynamics of SARS-CoV-2 between people and animals.

From the start of the CDC response to COVID-19, the One Health Working Group has released messaging to relay the uncertainty of risk related to animals while emphasizing that the primary risk of spread is from person to person. Interest in the potential role animals can play in the spread of COVID-19 increased as reports of infected animals emerged from multiple countries, including the United States. Since the emergency response began, CDC has received and responded to more than 2,100 inquiries from the public and others related to the One Health aspects of COVID-19.

As cases of SARS-CoV-2 infection in animals, including pets, were identified, CDC updated messaging to highlight the risk that people with COVID-19 posed to pet and addressed concerns about the potential for spread from animals to people. CDC also provided actions for pet owners and others to take to protect pets and people. As the pandemic progressed, CDC collaborated with partners using a One Health approach to develop messaging and guidance to address specific concerns from stakeholders, including veterinarians, pet owners, therapy and service animal handlers, public and animal health officials, the pet industry, and more. Outreach included website content, social media, webinar presentations, and calls with partners from government, industry, and other areas to collaboratively discuss concerns, evaluate needs, and answer questions. Through close collaboration with partners, the One Health Working Group has been able to provide timely, evidence-based messaging for One Health audiences to protect both people and animals.

This presentation will provide an overview of the One Health Working Group's communication activities and guidance development during the COVID-19 pandemic.

Rat Lungworm Disease Outreach to the Veterinary Community & Beyond

J. Odani

University of Hawaii at Manoa, College of Tropical Agriculture & Human Resources

Angiostrongylus cantonensis is a parasitic nematode that causes eosinophilic meningitis in man and many species of domestic animals and wildlife. The first human case of neuroangiostrongyliasis, also known as rat lungworm disease, was first described in Taiwan in 1944.¹ Hawaii reported its first human case in 1961 and have reported cases sporadically since then.² Now considered endemic in Hawaii, this zoonotic parasite has been described in Florida and the southeastern United States, involving dogs, horses, and non-human primates. Briefly, the life cycle of this parasite typically involves a rat as the definitive host and a mollusk as an intermediate host. Accidental hosts such as humans, dogs, and horses may develop neuroangiostrongyliasis. Paratenic host species include freshwater prawns/shrimp, amphibians, and reptiles. The clinical presentation in animals varies greatly in severity from inapparent to paralysis. Gross and microscopic findings have been described in the literature and will be reviewed.

Here we describe the activities of the Hawaii Rat Lungworm Disease Task Force and its efforts to reach out to the veterinary community to increase awareness and provide information regarding diagnosis, treatment, prevention, and control. Development of a diagnostic assay for the parasite will be briefly described and was critical in convincing the local veterinary community of the emergence of this disease. Public outreach regarding snail/slug control, food safety, and the disease in pet animals will also be discussed.

¹ Beaver, P.C., & Rosen, L. (1964). Memorandum on the first report of *Angiostrongylus* in man, by Nomura and Lin, 1945. *American Journal of Tropical Medicine & Hygiene* 13, 589–90

² Cowie, R.H. (2017). *Angiostrongylus cantonensis*: agent of a sometimes fatal globally emerging infectious disease (rat lungworm disease). *ACS Chemical Neuroscience* 8, 2102–2104.