

NEWSLETTER

Spring – 2020

IOWA STATE UNIVERSITY
College of Veterinary Medicine

**Veterinary
Diagnostic
Laboratory**

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Veterinary Diagnostic Laboratory
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Ames, IA 50011-1134

Someone Got a New Name

Recently several bacteria that are commonly tested for at the ISU VDL received new names. You may have noticed a few of these on our reports lately:

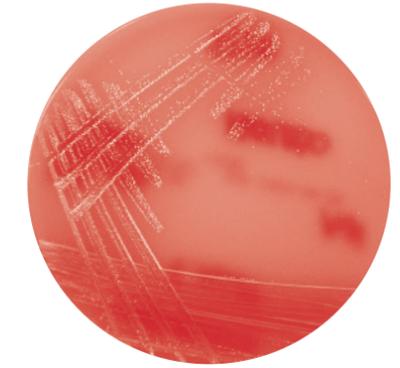
	PREVIOUSLY		NOW
	Clostridium difficile	→	Clostridioides difficile
	Clostridium sordellii	→	Paeniclostridium sordellii
	Haemophilus parasuis	→	Glaesserella parasuis
	Enterobacter aerogenes	→	Klebsiella aerogenes
	Propionibacterium acnes	→	Cutibacterium acnes



Clostridium difficile is now
Clostridioides difficile



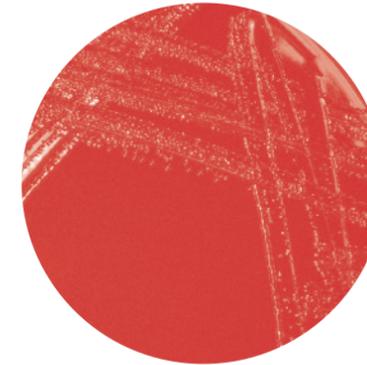
Clostridium sordellii is now
Paeniclostridium sordellii



Haemophilus parasuis is now
Glaesserella parasuis



Enterobacter aerogenes is now
Klebsiella aerogenes



Propionibacterium acnes is now
Cutibacterium acnes

Did you know?

The International Committee on Systematics of Prokaryotes (ICSP) and the International Code of Nomenclature of Bacteria are responsible for the naming of prokaryotes, including both eubacteria and archaeobacteria or archaea. These are generally published in the International Journal of Systematic and Evolutionary Microbiology when changes are proposed/completed.

We have updated our test names to be consistent with the new nomenclature.



Michael Rahe Pathology

Dr. Michael Rahe grew up in Dyersville, Iowa where he enjoyed playing sports, raising feeder pigs, and helping his veterinarian father on calls. He received his undergraduate degree from Iowa State University and continued on at ISU to receive a DVM degree in 2013. After graduation, he moved to Minnesota where he completed a PhD in porcine immunology in 2017 at the University of Minnesota. He then returned to Iowa State in a cooperative anatomic pathology residency between the ISU VDL and the veterinary pathology department before transitioning into a clinical faculty position in May 2019.

At the VDL, Michael appreciates the opportunity to solve complex diagnostic questions and cases with the superb individuals that make up the veterinary profession. In his spare time, Michael enjoys spending time with his wife, whether it's traveling, hiking, or working on their home. He is an ardent supporter of Iowa State football and basketball.

Chronic Wasting Disease in Iowa

Rachel Ruden, VMD
State Wildlife Veterinarian, Iowa DNR
and Affiliate Assistant Professor, Iowa
State Veterinary Diagnostic Laboratory

Chronic Wasting Disease (CWD) is a transmissible spongiform encephalopathy of cervids that is uniformly fatal. Unlike mad cow disease, but similar to scrapie, infectious prions are excreted in all body fluids (saliva, urine, feces) and distributed throughout all tissues—yes, even meat! Clients may refer to it as “zombie deer disease” which, while inaccurate, can also be confusing when diseases like Epizootic Hemorrhagic Disease (EHD, caused by an arthropod-vector-borne orbivirus) strike. Here in Iowa, the 2019 outbreak caused mass deer mortality on a much larger and more visible (acute) scale than CWD. However, while populations can recover from sporadic incursions of EHD, CWD can become a formidable population regulator, as we are beginning to see out West.

CWD will be the issue of the decade for many natural resource agencies as more states come online with free-ranging positives and endemic areas continue to expand across North America. In Iowa, the Department of Natural Resources (DNR) began CWD surveillance in 2002 following initial detections in Wisconsin and Illinois. Today, we screen samples from all 99 counties in the state, with increased sampling effort within Disease Management Zones (DMZs), established around free-ranging positives, and affected captive facilities. The bulk of our samples originate from voluntary submissions collected during the hunter harvest, with lesser contributions from roadkill and “target” (sick) animals. However, as the DNR transitions toward a weighted surveillance approach, to increase the bang for our literal buck,

we just launched a hunter submission pathway through the ISU VDL which will roll-out in full force for the 2020-2021 hunting season. This will provide a critical service to hunters interested in testing their harvest from an area that has exceeded our surveillance targets.

On the farmed cervid side, there are currently 81 captive herds in Iowa, all of which are enrolled in the Chronic Wasting Disease Herd Certification Program (CWD HCP) administered by the Iowa Department of Agriculture and Land Stewardship (IDALS). All animals must have 2 forms of individual identification and cervids >12 months of age must be tested for CWD upon death. Herd status is assessed per annum and herds are recognized as CWD Certified at completion of their fifth year in the program. Captive samples are tested at the National Veterinary Services Laboratory (NVSL) in Ames and should include the retropharyngeal lymph node (RPLN), obex (brainstem), and official identification with tissue surrounding the ear tag as proof of ID.

Though often stocked by captive facilities, hunting preserves are permitted by the DNR. As such, field staff facilitate CWD testing of animals that die of natural causes, submitting both the RPLN and obex, whereas only the RPLN is required for free-ranging deer. Of note, states with wild or reintroduced elk populations test both the lymph node and obex in these animals to reduce the incidence of false negatives.

As we close out the 2019-2020 sampling season, the DNR has tested upwards of 7,000 deer state-wide for CWD, with the majority of samples submitted to the VDL for screening via enzyme-linked immunosorbent assay (ELISA). This diagnostic test measures the intensity of antibody binding to the PrPres (prion) protein marker for detection of “initial reactors.” These samples are then confirmed positive at the NVSL using immunohistochemistry (IHC) to visualize the presence of PrPres in the fixed tissue. In the next couple of months, the VDL will bring CWD IHC online which will become the new home for our confirmatory testing. This will both streamline and expedite the process of confirming our free-ranging positives, which can help us keep prions out of the human food chain. It is important to remember that while CWD testing is not a food safety test, it can prevent known exposures in accordance with recommendation put forth by the Centers for Disease Control and Prevention (CDC).

References:
Angers RC, Browning SR, Seward TS, Sigurdson CJ, Miller MW, Hoover EA, and Telling, GC. 2006. Prions in skeletal muscles of deer with chronic wasting disease. *Science* 311(5764): 1117.

Gough KC and Maddison BC. 2010. Prion transmission: Prion excretion and occurrence in the environment. *Prion* 4(4): 275-282.

Spraker TR, Balachandran A, Zhuang D, and O'Rourke KI. 2004. Variable patterns of distribution of PrPCWD in the obex and cranial lymphoid tissues of Rocky Mountain elk (*Cervus elaphus nelsoni*) with subclinical chronic wasting disease. *Veterinary Record* 155: 295-302.

ANNOUNCEMENTS:

Upcoming University Holidays:

Memorial Day – Monday, May 25th

HATS will be receiving drop-offs as normal on Monday, May 25th.

ISU VDL EZ Ship

ISU VDL EZ Ship facilitates easier shipping to the ISU VDL while also providing significant cost savings to our clients. Shipping costs are assessed once the shipping label is scanned by UPS and charges are placed on the case invoice (or split evenly among the cases within that box).

It is extremely important that the required weight field be as close to the actual weight as possible. Packages with a grossly incorrect label weight will be price adjusted as necessary. This notice is for those packages that are significantly over what was described on the label, example being the label says 5 pounds and the actual package weight was 20 pounds. Additionally, packages over 50 pounds will be charged on an individual basis, and those shipping costs will vary in price depending on package weight.

Package dimensions:

Height (inches)

Length (inches)

Width (inches)

Weight (lbs)

Number of labels requested:

STAFF HIGHLIGHT

Questions?

Please contact ISU VDL Client Services
515-294-1950 ___ isuvdl@iastate.edu