

Issue 53 September 2020

OLPC 2020

Membership Meetings

All meeting dates are currently tentative.

- October 16, 2020
- December 11, 2020

Note: The October 16th meeting will also be the annual general meeting. It will be held via Zoom. Connection details have been provided to members.

Rabies Numbers in Canada

As at the end of August, there have been 1,984 samples submitted in 2020 for rabies testing from across Canada. Nationally, 79 samples tested positive. Ontario accounted for 1,141 samples of which 40 tested positive. The breakdown from which species the positive samples were taken are as follows:

	Can.	Ont.
Arctic fox	1	
Bat	57	33
Bovine	2	
Cat	1	
Dog	3	
Raccoon	4	3
Skunk	11	4
Total	79	40

ASF Surveillance

CanSpotASF, for enhanced African swine Fever (ASF) passive surveillance, was launched in August. All Canadian Animal Health Surveillance Network (CAHSN) labs can test for ASF.

The primary goal of CanSpotASF is early detection so that ASF can be quickly contained. It will allow approved laboratories to conduct ASF testing on certain diagnostic cases when requested by a veterinarian or pathologist.

Biosecurity Stop Signs

The OLPC office still has biosecurity stop signs in stock and can be ordered by calling the office 519-669-3350 or

Detection of Zoonotic Pathogens Carried by Urban Norway Rats

Sarah Robinson, DVM, University of Guelph gave a presentation on her research project investigating rat-associated zoonoses in urban rats in Ontario as part of the INKY 2020 Research Bites webinar series.

Norway rats are among the most pervasive rodents in the world and can carry a variety of zoonotic pathogens that affect humans. Sarah's project started in the Fall of 2018 and will continue through 2021 with pest control company submissions of rat carcasses. The three selected study locations were: Windsor, Hamilton, and Toronto as these are in the top 10 "rattiest" cities in Ontario.

Carcasses are collected and frozen until they can be delivered to the University of Guelph. To date, 123 urban rats have been fully processed. Seoul hantavirus and Rickettsia were not found. MRSA was not found in Windsor but was present in Hamilton and Toronto.

Pathogen	% Positive Range	
Leptospira interrogans	9.1	18.5
Streptobacillus moniliformis	14.8	44.4
Rickettsia spp.	0.0	0.0
Clostridioides difficile	7.1	11.1
Methicillin-resistant staphylococcus aureus	0.0	29.6
Seoul hantavirus	0.0	0.0
Hepatitis E virus	3.7	11.1

The study is ongoing with the goal of estimating the potential health risks posed by urban rats and then developing informed and effective strategies to monitor and potentially mitigate those risks.

Role of Raccoons in the Epidemiology of Campylobacter and Other Zoonotic Pathogens

Another INKY 2020 presenter was Dr. Nadine Vogt, DVM and PhD candidate in the Department of Population Medicine at the University of Guelph. She presented results from previous research as well as some on-going studies.

A three-year study conducted near Guelph from May through November in 2011 to 2013 live trapped and sampled raccoons at five swine farms and five conservation areas. Trapped raccoons had their paws swabbed for Salmonella. Fecal swabs were tested for: Salmonella and associated AMR; Clostridium difficile; generic Escherichia coli and associated AMR; and Campylobacter spp. The environment was also sampled, e.g. dirt, dumpsters, manure pits, etc.

There was an overall moderate prevalence of Salmonella in raccoon fecal samples (26%) which was similar to prevalence in environment samples (including manure pits) although soil was lower at 8%. Occurrence was not associated with farms versus conservation areas. It did tend to be associated with season, year, rainfall and raccoon sex (males being higher).

completing an order form from the website www.ontlpc.ca under the resources tab.

We also have biosecurity videos on DVD and a few poultry biosecurity manuals left. You can view the videos at <http://www.ontlpc.ca/videos.php> The videos work well for training non-agricultural staff and for 4-H or school groups.

Denmark to Cull One Million Mink – excerpt from [British Herald](#)

Denmark will cull around one million mink after finding coronavirus infections at additional fur farms. There have been 41 recently registered positive mink farms and an additional 20 are suspect. Mink farms within a radius of 8 km of an infected farm will also be culled as a precaution.

Previously, there was a monitoring strategy and strict restrictions for infected mink farms but no culling. The Danish veterinary services and the health authorities assessed that it was justifiable to let infected mink live as the risk of spreading infection to humans was seen as minimal. This policy has apparently changed.

The Netherlands reported a similar outbreak and undertook a cull after two people were reported to have been infected by mink, though such cases of animal-to-human transmission are believed to be extremely rare.

Twelve countries have reported confirmed cases of COVID-19 in animals to the OIE. Four countries listed mink: Netherlands, Spain, Denmark, and U.S. Links to all COVID-19 reports, and other information on the disease in animals, are available on OIE's [COVID-19 website](#).

A sub-set of animals were tested for Clostridium difficile which was isolated from 9% of raccoon fecal samples. There were 19 ribotypes identified: five matched international designations causing human disease. The occurrence of C. difficile was not associated with farms versus conservations areas however there was a distinct distribution of ribotypes by location with ribotype 078 significantly associated with farms.

In looking at antimicrobial resistant Escherichia coli, prevalence was highest in manure pit samples (57%) and lower in in soil, dumpsters and raccoons (~10%). There was no difference in rates between farms and conservation areas however there were qualitative differences with conservation authorities being higher for certain beta-lactamases and different resistant genes.

Mutschall et al. 2020 found a high prevalence (46%) of Campylobacter in trapped raccoons. The Campylobacter genotypes common to livestock and human infections were prevalent in raccoons (66%). Raccoon specific genotypes were also identified. Rainfall, temperature and season were significantly associated with Campylobacter jejuni in raccoons but effects were not consistent, and varied by location type and year.

Raccoons did not appear ill but carried a diversity of pathogens known to cause illness in humans. Climatic and seasonal factors were consistently important predictors. Prevalence was not associated with location type but differences between farms and conservation areas were seen with more detailed data.

You can watch all the videos from the INKY 2020 series on the conference Facebook page <https://www.facebook.com/INKYzoonosis>

Can Animals be Infected with SARS-CoV-2?

The following article is taken from the OIE [COVID-19 Portal](#)

Cats (domestic and large cats), mink, and dogs have tested positive for SARS-CoV-2 following contact with humans known or suspected to be infected with SARS-CoV-2. Cats have shown clinical signs of disease including respiratory and gastro-intestinal signs. SARS-CoV-2 infection in farmed mink has been characterized by respiratory disease and an increased mortality rate.

Laboratory studies suggest that cats are the most susceptible species and can be affected with clinical disease. In an experimental setting, cats were able to transmit infection to other cats. Under laboratory conditions, ferrets were also susceptible to infection and able to transmit infection to other ferrets, although they appear to be less affected by clinical disease. Golden Syrian hamsters, as well as cynomolgus and rhesus macaques can be consistently infected with SARS-CoV-2 and may show clinical signs. Dogs appear to be susceptible to infection but are less affected than ferrets or cats. Egyptian fruit bats were also infected in the laboratory setting but did not show signs of disease. The infected fruit bats were able to transmit infection to other fruit bats.

To date, findings from experimental infection studies suggest that poultry and pigs are not susceptible to SARS-CoV-2 infection.

Our Mission

Provide a forum to facilitate the development and coordination of an Ontario strategy to deal with foreign animal disease and other transmissible livestock and poultry diseases.