Divergent white-tailed deer SARS-CoV-2 with potential deer-to-human transmission

February 25, 2022 – A new lineage of SARS-CoV-2, the virus that causes COVID-19, has been identified in white-tailed deer in Southwestern Ontario. One human case from the same geographic region has been identified within this deer lineage cluster, suggesting the potential for deer-to-human transmission of SARS CoV-2.

A collaborative team of scientists, and wildlife and public health experts from across Canada have reported a unique lineage of SARS-CoV-2 in white-tailed deer that also includes a viral genome from a human case from southwestern Ontario. According to the paper, the human case had contact with deer prior to contracting COVID-19. This is the first report of this new SARS-CoV-2 lineage and potential deer-to-human transmission of the virus.

More research is required to understand how widespread the new lineage is in deer populations, how the virus is transmitted between species, and how this virus differs from existing SARS-CoV-2 lineages in terms of transmission and potential to cause disease.

On January 4, 2022, the Canadian Food Inspection Agency confirmed the first detections of SARS-CoV-2 in Ontario in five white-tailed deer. Further testing has identified SARS-CoV-2 in 12 additional white-tailed deer which were all part of a group of 298 deer tested in 2021. SARS CoV-2 had previously been found in deer in Quebec and Saskatchewan. Recent reports in the United States have revealed evidence of spillover of SARS-CoV-2 from humans to wild white-tailed deer, with subsequent spread of the virus amongst deer.

While there is limited information on the susceptibility of wildlife to SARS-CoV-2, the virus has infected multiple animal species globally, including farmed mink, companion animals (e.g., cats, dogs, ferrets), and zoo animals (e.g., tigers, lions, gorillas, cougars, otters). To date, the risk of animals spreading SARS-CoV-2 to people is low, but this new study underscores the value of implementing a One Health approach in response to emerging zoonoses and emphasizes the need for robust wildlife health surveillance.

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For more information about SARS-CoV-2 and animals, including safe meat preparation practices, please refer to guidance from the Public Health Agency of Canada here. For best practices when working with wildlife, please see the *Wildlife Health and SARS-CoV-2: Handling Guidelines.*