

SARS-COV2 OUTBREAKS IN FARMED MINK, NETHERLANDS, 2020

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Coronavirus infection outbreaks were observed in 69 Dutch mink farms in 2020. More than 2 million mink have been culled because of coronavirus (SARS-CoV-2). Outbreaks of SARS-CoV-2 on the mink farms were associated with respiratory disease and increased mortality. Before it was decided to cull the farms, the clinical outbreaks lasted for about 4 weeks. However, a number of the animals were still PCR-positive for SARS-CoV-2 in throat swabs after clinical sign had disappeared. The most prominent post-mortem finding was an acute interstitial pneumonia, which was found in nearly 100% of the necropsied mink examined at the peak of the outbreaks. Acute alveolar damage was a consistent histopathological finding in minks that died with pneumonia. SARS-CoV-2 infections were confirmed by detection of viral RNA in throat swabs and by antigen expression in trachea, lung and nasal conchae. In at least two farms, a worker had coronavirus disease-associated symptoms before the outbreak. Variations in mink-derived viral genomes showed between-mink transmission. Viruses from humans exposed to mink clearly clustered with the animal viruses and not with the viruses detected in unrelated SARS-CoV-2 patients living in the vicinity of the farms. Sequences from infected mink farms fell into five distinct clusters, showing between mink farm transmission. Inhalable dust contained viral RNA, indicating possible exposure of workers. SARS-Cov2 RNA appeared to be rather stable in mink manure whereas in spiked manure samples the virus could not be culture anymore after 6 hours. In several farms, based on the collected data, it is assumed that workers and owners have attracted the virus from mink. From June on all infected farms were culled because of the public health risk, and by Jan 1st 2021 mink farming was banned in the Netherlands.