

# Eliminating a potential reservoir of SARS-CoV-2 virus on EU fur farms

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**HUMANE SOCIETY  
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## Eliminating a potential reservoir of SARS-CoV-2 virus on EU fur farms

The global COVID-19 pandemic has led to high mortality, sickness and unprecedented damage to our economy. Our healthcare system is overburdened, levels of unemployment are rising and people's everyday lives have been extraordinarily disrupted by this emerging, deadly zoonotic disease.

While the EU has taken some important steps to co-ordinately mitigate the impact of the disease, one aspect of the pandemic that has thus far not received a sufficiently harmonised response is with regard to the continuing outbreaks of the SARS-CoV-2 virus on European fur farms. These pose a threat to human health not only for those working with mink occupationally, but also for those living in the vicinity of fur farms, especially if medically vulnerable, and have potential implications at European level for COVID-19 diagnosis, treatment and vaccine development.<sup>1</sup>

We understand that the Commission is currently preparing a working paper on the issue of COVID-19 and mink production. With this position paper, we hope to contribute to this process. It outlines the key issues at stake with respect to COVID-19 and fur farming and makes various **recommendations to ensure that the production of fur does not impede efforts to eradicate this disease by preserving a reservoir for SARS-CoV-2, or undermining the efficacy of future vaccines.**



<sup>1</sup> [European Centre for Disease Prevention and Control. Detection of new SARS-CoV-2 variants related to mink – 12 November 2020. ECDC: Stockholm; 2020.](#)

## Background

Since April 2020, when the first case of COVID-19 in American mink (*Neovison vison*) was confirmed on a Dutch fur farm, the SARS-CoV-2, the virus that causes COVID-19, has continued to rage throughout farmed mink herds in various EU Member States. To date, the virus has been detected in mink on 289 mink farms in Denmark, 70 in the Netherlands, 10 in Sweden, 10 in Greece, 1 in Spain, 1 in Italy, 1 in France, 1 in Lithuania and a still undefined number in Poland. This is despite strict biosecurity measures supposedly having been taken by fur farmers to prevent the further spread of COVID-19 among their herds.

It has also become evident that SARS-CoV-2 is capable of jumping back and forth between humans and mink, with potential for the virus to mutate in mink prior to re-infecting people. Farm workers infected with COVID-19 appear to be the initial source of infection in mink herds. Mustelid species, such as mink, seem to be particularly susceptible to the virus. One of the features of SARS-CoV-2 is that it has a special attraction for cells in the respiratory systems of mink, just as with people.<sup>2</sup> As a result, symptomatic, sick mink most likely will experience severe respiratory distress before dying. This also makes COVID-19 infection an animal welfare problem.

The welfare of animals on fur farms is already poor. The housing systems in which mink - ostensibly undomesticated animals that lead a solitary existence in the wild - are kept provide no opportunity to satisfy these basic needs, such as a strong desire to range, forage for food, swim and engage in social and breeding behaviour. Such unnatural confinement can result in frustration and crippling mental distress, expressed in stereotypical behaviour, such as pacing or auto-mutilation, and aggression towards and injury to cage mates. These symptoms are regularly seen on fur farms across Europe, despite industry assurances that they have been working to improve and have high levels of animal welfare.<sup>2,3</sup>

Indeed, the breeding of animals for the purposes of fur production is opposed by a growing number of European countries. Fur farming has already been prohibited and/or is presently being phased out in 8 Member States including Austria, Belgium, the Netherlands, Luxembourg, Slovenia, Czech Republic, Slovakia and Croatia. Legislative proposals to ban fur farming are currently also under consideration, or have been announced, in 6 countries including Poland, Lithuania, France, Ireland, Bulgaria and Estonia. In addition to these fur farming bans and industry phase-outs, Germany adopted stricter regulations, which have effectively eliminated the breeding of all animals for fur; Sweden similarly eliminated fox and chinchilla production in this way. Denmark has also prohibited and is phasing out the breeding of foxes on animal welfare grounds. Hungary has also just announced a ban on mink, fox, ferret and coypu production as a precautionary measure due to animal welfare and COVID-19 concerns to prevent fur producers from moving their operations there.<sup>5</sup>

<sup>2</sup> [HSVMA Statement on Fur-Farmed Animals and the Risk of Disease](#)

<sup>3</sup> [Humane Society International \(2019\) The Five Freedoms and the International Fur Trade](#)

<sup>4</sup> <https://animainternational.org/blog/goreczki-investigation>

<sup>5</sup> <https://kormany.hu/hirek/ujabb-fontos-lepes-az-allatok-vedelmeert>

Given that mink are already stressed from their unnatural living conditions and being kept intensively in large groups in wire cages, this stress, which suppresses the immune system, may also make them more susceptible to infectious diseases. Additionally, the bedding used in these cages – as well as the dried faeces under the cages – generates a lot of dust, which creates opportunities for the transmission of SARS-CoV-2 between the animals and to people working on the fur farms.<sup>6</sup>

## Developments in the Netherlands

Nearly three million mink have already been preventatively culled as a result of SARS-CoV-2 being detected on fur farms in the Netherlands. All mink on affected fur farms have been swiftly killed and a rapid warning system established to identify possible new cases. After more than forty cases and steadily growing public health concerns, the Dutch government finally decided to effectuate the early closing of the mink sector, which was already being phased-out due to a ban that would have fully entered into force on 1<sup>st</sup> January 2024. The current mink fur production cycle will, therefore, be the very last.

One of the key reasons that precipitated this political decision were the findings of scientific research into the Dutch mink farm outbreaks. Using whole genome sequencing to investigate outbreaks on 16 fur farms, the researchers found that, after the detection of SARS-CoV-2 on mink farms, 66 of 97 (67%) persons (occupationally) associated with these farms tested were shown to be infected with SARS-CoV-2. Crucially, genetic analysis showed that the mutated variant of SARS-CoV-2 virus were the same as those found in mink, and were not identical to those found in unrelated SARS-CoV-2 patients living in the vicinity of farms.<sup>7</sup>

## Developments in Denmark

In Denmark, COVID-19 was first detected on a mink farm in June 2020. The animals on this and the next two affected farms were preventatively culled, but the competent authorities decided to cease culling after the third and instead to rely on strict biosecurity measures. This decision was later reversed when, by September, the disease had rapidly spread to dozens more farms bringing the total to around 60. The continued spread of the virus indicates that biosecurity measures were insufficient to prevent further transmission of the disease.

<sup>6</sup> M. Koopmans (2020) SARS-CoV-2 and the human-animal interface: outbreaks on mink farms. *The Lancet, Infect Dis* 2020  
<sup>7</sup> Bas B. Oude Munnink et al (2020) Jumping back and forth: anthroozoonotic and zoonotic transmission of SARS-CoV-2 on mink farms

A cull of mink on around 100 of the 1147 Danish fur farms, primarily in the north of Denmark, was set in motion in early October with animals on farms within a 7.8km radius of COVID-19 positive ones also being killed. It was at this point that experts from the State Serum Institute noted that fur farmers had a greater risk of contracting COVID-19 than doctors and nurses.<sup>8</sup>

Matters escalated a few weeks later when a new mink variant of the SARS-CoV-2 virus was detected. It was feared that this Covid-19 mutation moving from mink to humans could jeopardise future vaccines. In short, the genetic mutations found – and dubbed Cluster 5 – affected the part of the virus where spike-proteins bind to the so-called ACE-2 receptors, which are an important first step in infections taking hold. The vaccines under development focus on making antibodies to these very spike-proteins.

It became known that 12 people in northern Denmark had already been infected with this dangerously mutated virus. Half of 783 infected people in this region, where many fur farms are situated, had been found to have had infections stemming from the mink farms.

In response to these findings, on 3<sup>rd</sup> November 2020, the Danish government announced the radical step of culling all mink on the remaining fur farms and a temporary ban on mink production in the country. With a population of up to 17 million farmed mink, this highlights the enormity of the problem and the need to take decisive action to eliminate the reservoir of SARS-CoV-2 and dangerous mutations of the virus.



<sup>8</sup> <https://landbrugsavisen.dk/k%C3%A5re-m%C3%B8lbak-minkavlere-har-st%C3%B8rre-coronarisiko-end-l%C3%A6ger-og-sygeplejersker>

## COVID-19 and other fur farmed species

To date, the focus of research, testing and political debate with regard to COVID-19 has primarily focused on mink farming. We, however, note that other species are also exploited for fur production in Europe, in particular foxes and raccoon dogs. It is unclear what measures have been taken by the Member States (where the breeding of these species is still permitted) to monitor and test them for COVID-19. It is known that raccoon dogs are susceptible to coronaviruses and that this species may have been an intermediate host for the SARS-CoV virus.<sup>9</sup> A more recent scientific paper has concluded that this species is susceptible to and can efficiently transmit SARS-CoV2 and may serve as intermediate host for this virus too.<sup>10</sup>

With respect to foxes, researchers in China found red foxes sold on a wildlife market to have been infected with SARS-CoV-2.<sup>11</sup> Scientists found that fox host cell binding sites were capable of binding to SARS-CoV-2, which causes COVID-19, and SARS-CoV, which causes SARS.<sup>12</sup> No studies have been yet conducted with regard to the susceptibility of chinchilla for the virus, but it cannot be excluded that they pose a possible risk.<sup>13</sup>



9 Y. Guan, B. J. Zheng, Y. Q. He, et al., Isolation and characterization of viruses related to the SARS coronavirus from animals in southern China. *Science* 302, 276-278 (2003).

10 <https://www.biorxiv.org/content/10.1101/2020.08.19.256800v1>

11 Wang, M., Jing, H. Q., Xu, H. F., Jiang, X. G., Kan, B., Liu, Q. Y., ... & Yan, M. Y. (2005). Surveillance on severe acute respiratory syndrome associated coronavirus in animals at a live animal market of Guangzhou in 2004. *Zhonghua liu xing bing xue zazhi= Zhonghua liuxingbingxue zazhi*, 26(2), 84-87.

12 Luan, J., Lu, Y., Jin, X., & Zhang, L. (2020). Spike protein recognition of mammalian ACE2 predicts the host range and an optimized ACE2 for SARS-CoV-2 infection. *Biochemical and biophysical research communications*

13 CDC, COVID-19 Recommendations for Pet Stores, Pet Distributors, and Pet Breeding Facilities

## Rationale for taking harmonised action on EU mink farms

It is evident that mink – and most likely also raccoon dog - farming creates a potential reservoir for SARS-CoV-2 and future strains of this coronavirus. Decisive action must be taken to mitigate this present risk and to preclude risks in the future.

### Prevent the establishment of SARS-CoV-2 reservoirs

From a public health perspective, the continued presence of mink farms in Europe would serve to maintain reservoirs of SARS-CoV-2 within human communities. Moreover, genetic mutations in the virus in mink, which have already been seen in Denmark, may affect our ability to halt the spread of and eliminate the disease and undermine the efficacy of any future vaccine. Or could potentially even be the cause of a new pandemic. It is therefore necessary to eliminate this viral reservoir to avoid undermining efforts to control and eradicate COVID-19.

### Flaws in national surveillance programmes

Another concerning discovery is that Member States do not necessarily know exactly how many fur farms exist within their borders. In mid-October, the Danish Veterinary and Food Authority gave the figure of 1137 mink farms on their website, while a month later the number had increased to 1147. Likewise, the Swedish authorities do not seem to know just how many fur farms there are still in existence there with the total varying between 34 and 40. This raises serious concerns about the ability of the competent authorities to effectively implement a COVID-19 surveillance programme, let alone carry out animal welfare checks on mink farms throughout the production cycle and at the time of killing. Under the terms of Regulation (EC) 1099/2009, fur farmers are obliged to inform the authorities before commencing slaughter to provide the opportunity for inspection.

### Risks to native biodiversity

The continued existence of this disease reservoir also poses a risk to native wildlife. American mink is an invasive alien species. Fur farms have always been the key pathway of the introduction thereof and this species has long been implicated in the displacement of native mammals and biodiversity loss. If infection by SARS-CoV-2 spills into wild mustelids, these have the potential to become a permanent reservoir of infection for humans and other animal species. Such a scenario has been seen before with rabies in raccoons and skunks.<sup>14</sup> In some countries, this could also pose a risk to the European mink, which is a critically endangered species and extinct in most of its original range, partly due to competition with the invasive American mink.<sup>15</sup>

<sup>14</sup> C. Manes et al (2020) Could Mustelids spur COVID-19 into a panzootic?

<sup>15</sup> Maran, T., Skumatov, D., Gomez, A., Pödra, M., Abramov, A.V. & Dinets, V. 2016. *Mustela lutreola*. The IUCN Red List of Threatened Species 2016: e.T14018A45199861.

## Animal welfare

As animal protection organisations, we do not relish the prospect of millions of animals being killed. On the other hand, it is worth noting that these animals were only born to live short, miserable lives in confinement in order to be gassed to death to produce fur, a luxury product that no-one actually needs and for which there are many humane alternatives. Indeed, both the animal welfare and ethical problems associated with breeding animals for fur have already led many EU Member States to prohibit and phase-out the practice.



## Recommendations

In view of the disease risks – as well as inherent animal welfare problems - posed by the continued operation of mink fur farms in Europe, **we strongly advocate the permanent closure of such operations**. However, we recognise that emergency and proportionate EU action is urgently needed to prevent the risk of maintaining reservoirs of SARS-CoV-2 and of jeopardising the effectiveness of the vaccines under development. Given the devastating economic and social crisis caused by the pandemic, the risk of a mutated virus compromising the effectiveness of vaccines for humans cannot be afforded.

Notwithstanding proposals to end fur farming at a national level, in the interim we call on the European Commission to swiftly adopt the following **emergency actions** to ensure a harmonised approach to the mink and COVID-19 issue in the EU:

- We urge the Commission to take a precautionary approach and suspend mink production throughout the Union. This would necessarily entail that no breeding – or restocking of mink farms where animals have been culled - takes place for at least as long as the SARS-CoV-2 virus persists. In the event of infectious animal disease outbreaks, including zoonoses, the Commission has the necessary powers, to adopt protective emergency measures.
- All cross-border transportation of live mink within the EU should be prohibited and Member States should prohibit the transport of live mink between farms for the same period.
- The import of live mink to EU Member States from non-EU countries, as well as the export of live mink outside the EU, should be prohibited for the same period.
- The export and import of raw mink pelts both within the EU and to/from third countries should be prohibited for the same period.
- Until all mink farms have ceased operating, Member States should be required to implement a mandatory COVID-19 programme to diagnostically test (with mandatory genome sequencing) mink and other fur farmed species, such as raccoon dogs<sup>16</sup> and foxes, including the compulsory registration of all operations engaged in fur farming.
- Ensure that all culling of mink is conducted under the supervision of the competent authorities.
- Ensure that proportionate financial support is made available exclusively to cover costs of dismantling of mink farm operations, professional retraining and assistance with transitioning to other (non-animal) activities.
- Adopt preventive restrictions on the breeding, transport and live export/import of live raccoon dogs and foxes, plus raw furskins from these species, to also eliminate any potential risk of disease transmission from trade involving these species.

<sup>16</sup> [Susceptibility of Raccoon Dogs for Experimental SARS-CoV-2 Infection - Volume 26, Number 12–December 2020 - Emerging Infectious Diseases journal - CDC](#)

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