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# Besvarelse vedr.

## Risiko ved pelsning og minkskind

### Bestilling

Der er konstateret COVID-19 i mink i Danmark. I det tænkte scenarie, at COVID-19 positive minkfarme ikke slås ned, men får lov at gennemleve udbruddet, skal det vurderes om minkskind efterfølgende udgøre en smitterisiko. Til brug for udarbejdelse af en fremadrettet håndteringsstrategi COVID-19 positive minkfarme, ønsker Fødevarestyrelsen DK-Vets vurdering af nedenstående:

1. Risiko for medarbejdere, der deltager i pelsning af potentielt COIVD-19 positive mink. Herunder hvilke værnemidler medarbejderne skal anvende.
2. I tilfælde af, at en COVID-19 positiv mink pelses, udgør skindet en smitterisiko? Hvis ja, hvor længe? Kan skindet behandles på en måde, så smitterisikoen forsvinder?
3. DK-Vets bedes i besvarelsen anføre om svaret gælder seropositive og/eller viruspositive mink.

### Svar

1. Risk for employees participating in removing fur skin of potentially COVID-19 positive mink. This includes which protective equipment the employees must use.

**Response:** It seems that asymptomatic infection of mink can occur. Thus, it will not be apparent that a particular mink is or has been infected with SARS-CoV-2. It is not known how long SARS-CoV-2 infection can be maintained in a mink farm. Infected mink are most likely to transmit the virus while alive, from exhaling virus in droplet form (>5 μM) but fecal waste also contains viral RNA (although it is not yet established if this viral RNA is present within infectious virus). There is no data on the occurrence of virus on the fur of mink, but, it is expected

that virus will be found on the fur of the mink. During handling of a dead or alive, infected, mink, it seems likely that some release of virus will occur from the animal and thus it would seem necessary for employees handling the animals to wear personal protection equipment (PPE).

De anbefalede værnemidler ved pelsning af potentielt COVID-19 positive mink er brug af arbejdshandsker samt åndedrætsværn sammen med tætsiddende øjenbeskyttelse. Der anvendes arbejdsdragt samt arbejdshandsker. Åndedrætsværn og øjenbeskyttelse aftages efter brug. Såfremt det kan genbruges skal disse genbehandles efter producentens foreskrifter. Hvis det er engangsudstyr bortskaffes udstyret. Arbejdsdragten, fodtøj og arbejdshandsker skal aftages når arbejderen forlader pelsningsområdet, og der udføres håndhygiejne. De anvendte genstande sendes til vask førend genbrug – vask ved 60 graders varme. Det anbefales at arbejderen tager bad førend arbejdsområdet forlades.

2. In the case of a mink skin from a COVID-19 positive animal, does the skin pose a risk of infection? If so, how long? Can the skin be treated in such a way that the risk of infection disappears?

Response: Mink skins from infected animals are very likely to be contaminated with exhaled and excreted virus. While alive, the infected animal skins will continually be exposed to virus. Once outside of the body, e.g. on the skin, the virus will gradually be inactivated and this process is temperature dependent. Virus survival is longer at cool temperatures (e.g. at 5°C) compared to room temperature or body temperature (37°C). As described previously, for a different coronavirus (transmissible gastroenteritis virus (TGEV)), complete virus inactivation in slurry required storage for 8 weeks at 5°C and required about 2 weeks at 20°C. Heat treatment rapidly inactivates the virus, e.g. inactivation of TGEV occurs within 30 min at 55°C. The SARS

coronavirus can also be inactivated at low pH (<3) or under alkaline conditions (pH >13) (Darnell et al, 2004). The SARS-CoV-2 is readily inactivated by detergents (WHO, May 2020).

SARS-CoV-2 can retain infectivity on various surfaces (plastic, ceramics, glass and stainless steel) for up to 3 days (van Doremalen et al., 2020). There is no data for the survival of SARS-CoV-2 on skin or fur, but the aforementioned timespan is likely to be true for SARS-CoV-2 on animal skin.

The nature and duration of the processing of the skin will determine the level of residual infectivity present. After pelting and removal of fat the skin is dried for minimum of 48 hours at 18-20° C and ca. 50% relative humidity. Afterwards the skin is further dried in most cases. A slightly increased drying temperature might improve the "decontamination" further and faster. During this process, the virus will be inactivated to a very large extent, if not 100%. The use of detergents or low or high pH, as mentioned above, is not appropriate as it will spoil the fur.

3. DK-Vet is asked in the answer whether the answer applies to seropositive and / or virus positive mink.

Analyses of samples from the infected mink farms in Denmark have shown that mink can simultaneously be seropositive and virus positive (in throat swabs, as measured by RT-qPCR). Furthermore, a mink skin can potentially be contaminated from droplets produced by another mink kept in close vicinity. The infection can spread very rapidly within mink farms. Thus, if the farm has infected mink then it seems prudent to treat all animals as potentially infected.

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