

Qualitative assessment of the risk of SARS-CoV-2 to human health through food exposures to deer in the UK: Risk characterisation

Even if deer are infected, there is little evidence that viable virus would be present in the muscle tissue (**uncertainty**). Levels of virus in the different deer organs consumed as offal is also unknown (**uncertainty**). Most deer meat will likely be cooked (**uncertainty**), reducing the number of any viable virus present in the meat. Cross-contamination of surfaces prior to cooking is a concern, although risk assessments determined the risk of acquiring COVID-19 from cross-contamination from food sources to be negligible to very low (Locas et al. 2022). Finally, as SARS-CoV-2 is a respiratory illness, the ability to be infected from ingestion of virus particles is not currently known (**uncertainty**).

Despite the high prevalence of SARS-CoV-2 in some deer populations in the United States, the USDA still indicates there “is no evidence that people can get COVID-19 by preparing or eating meat from an animal infected with SARS-CoV-2, including wild game meat” (USDA Animal and Plant Health Inspection Service 2021). Similarly, several risk assessments and literature reviews from different organisations have not identified any evidence for infection from SARS-CoV-2 from food (BfR (German Federal Institute for Risk Assessment) 2022; FSA 2020; ICMSF 2020; New Zealand Food Safety Science and Research Centre 2022). Two of these have updated their evidence for 2022 and, despite over two years of the global SARS-CoV-2 pandemic, still did not find evidence for infections of SARS-CoV-2 from food (BfR (German Federal Institute for Risk Assessment) 2022; New Zealand Food Safety Science and Research Centre 2022)

Given the above, the risk of contracting COVID-19 associated with handling or consuming UK-produced deer meat and offal is **negligible** (so rare that it does not merit to be considered) with a **medium uncertainty**. This uncertainty is primarily due to the lack of data on the presence of viable virus in deer meat and offal and ability of SARS-CoV-2 to infect via the oral route, aka through the ingestion of contaminated food.

Uncertainties

1. Whether deer meat / musculature / offal may have viable virus associated with it when a deer is actively infected with SARS-CoV-2 and, if so, at what level
2. Whether SARS-CoV-2 be transmitted to people via the oral route and, if so, how this is affected by dose and vehicle
3. Whether there are visible signs of infection with SARS-CoV-2 in UK deer and if these would be sufficient for removal of the carcass from the human foodchain via inspection to be likely
4. Proportion of deer meat in the UK eaten less than thoroughly cooked
5. Quantity of deer offal consumed in the UK and typical preparation
6. Proportion of the UK raw pet food market made up of UK-produced deer meat and offal