Global GASL Online Multi-stakeholder Meeting: Europe
From Crisis to Action – Lessons from COVID-19 for Building a Better Future through Sustainable
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COVID-19 AND ANIMAL HEALTH AND WELFARE: IMPACT, PERCEIVED RISK AND RESPONSE

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“to improve animal health, veterinary public health and animal welfare worldwide”
GASL From Crisis to Action – Lessons from COVID-19 for Building a Better Future through Sustainable Livestock

Objectives
Take-stock of impacts of pandemic on four areas of development and the role of livestock

1. Food and nutrition security
2. Livelihoods and economic growth
3. Animal health and welfare
4. Climate and natural resource use

Identify change priorities and pathways to build forward sustainable food systems via livestock.

Share current livestock related activities to minimise impacts of COVID-19
Summary

- COVID-19 animal susceptibility
  - What do we know and what we do not know

- COVID-19 impact on livestock health and welfare
  - Direct impact
  - Indirect implications
  - Impact on other animals

- COVID-19 response
  - Implemented actions
  - Opportunities and lessons learnt
Roles of animals in COVID-19

- Natural reservoir
- Intermediate host (?)
- Amplifying host
- Spillback host
- New “unnatural” reservoir

Bats → Animal X? → Humans → American minks, Cats/ dogs → Animals X, Y, Z?

Credits: Dr Linfa Wang, modified
Estimation of host range of SARS-CoV-2 predicted by comparative and structural analysis of ACE2 in vertebrates

Limitations
- Only based on in silico analyses
- Need confirmation by direct experimental data
- Prediction accuracy of the model to be confirmed
- Possibility of infection through other receptors
- Possible lower-affinity interactions with ACE2
- Does not consider immune response

Starting point for the selection of animal model and species to be further investigated

Credits: CDC

Damas et al., 2020
## Susceptibility of domestic animals

<table>
<thead>
<tr>
<th>Species</th>
<th>Type of infection</th>
<th>Susceptibility to infection</th>
<th>Clinical signs</th>
<th>Transmission</th>
</tr>
</thead>
<tbody>
<tr>
<td>American mink (Neovison vison)</td>
<td>Natural</td>
<td>Yes</td>
<td>Yes (in some cases)</td>
<td>Yes, between minks and suggested from mink to humans</td>
</tr>
<tr>
<td>Cattle (Bos taurus)</td>
<td>Experimental</td>
<td>Low</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Cats (domestic)</td>
<td>Natural and experimental</td>
<td>Yes</td>
<td>Yes (none to very mild in some cases)</td>
<td>Yes, between cats</td>
</tr>
<tr>
<td>Dogs</td>
<td>Natural and experimental</td>
<td>Yes</td>
<td>Yes (possible in few cases)</td>
<td>No</td>
</tr>
<tr>
<td>Ferrets</td>
<td>Experimental</td>
<td>Yes</td>
<td>Yes (very mild in few cases)</td>
<td>Yes, between ferrets</td>
</tr>
<tr>
<td>Pigs</td>
<td>Experimental</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Poultry (chicken, ducks, and turkeys)</td>
<td>Experimental</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Rabbits (New Zealand White rabbits, Oryctolagus cuniculus)</td>
<td>Experimental</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>
COVID-19 impact on livestock health and welfare

- As livestock species are not susceptible to SARS-CoV-2 infection, the disease had no direct impact on food producing animals.

- Nevertheless, the COVID-19 pandemic had/could have a range of short and medium-long term indirect impacts on the health and welfare of livestock.
Short term impact: animal welfare

Reintroduction of border checks and disruption of travel routes

Increase transport stress

Changes in food demand and COVID-19 hotspots in slaughterhouses

Overstocking/culling of animals

 Meat Plant Closures Mean Pigs Are Gassed or Shot Instead
Coronavirus outbreaks at meatpacking plants have created a backlog of animals ready for slaughter but with nowhere to go. Farmers are having
Short term potential impacts: control of animal diseases

- During 2001 foot-and-mouth disease (FMD) epidemic in the UK, veterinary services energies were diverted to FMD control and eradication
- Delays in the implementation of other activities
- Delay in cattle testing for bovine tuberculosis (bTB) (1 year)
- Delay in identification/removal of positive animals
- Increase spread of bTB

Will COVID-19 have a similar effect?

Vial et al., 2015
Short term potential impacts: control of animal diseases

- Movement restrictions decreased hunting activity
- Decreased effectiveness of African swine fever (ASF) surveillance (active and passive)
- Insufficient wild boar population control

- Veterinary Services’ laboratories have been contributing to process human samples for COVID-19
- Decrease in routine activities?

Gortazar & de la Fuente, 2020
Long term impacts: What can be expected?

- Effects will largely depend on the impact of the crisis on farmer livelihoods and on the capacities of the animal health services.

[Image of Unemployment Insurance Initial Claims, Seasonally Adjusted]

6.6 Million (March 28, 2020)

695,000 (October 2, 1982)

SOURCE: Department of Labor. Data is seasonally adjusted.

BBC News

Coronavirus: Vets 'may not survive' without financial aid

Wales

The hardest decision farmers will make in their association said of euthanizing herds.
What impact on other domestic animals?

- Highly susceptible
- Can present clinical signs
- Proven mink-to-mink transmission
- Likely mink-to-human transmission

**Healthcare & Pharma**

Mink at Danish farm to be culled after catching coronavirus

By Reuters Staff

**Highly susceptible**

**Can present clinical signs**

**Proven mink-to-mink transmission**

**Likely mink-to-human transmission**

Stamping out policy put in place

**What impact on other domestic animals?**

The case of mink

**Coronavirus is killing the Dutch mink industry**

The Netherlands, a top exporter of mink, has killed more than 500,000 of the animals this month to stop the spread of disease.
COVID-19 impact on animals: risks of misinformation

What consequences if false information was shared about livestock?
COVID-19 response

- Ensure continuity of activities
- Enhance coordination
- Build new knowledge
- Provide reliable information
Recognition of workers in the food sector as critical and allowed to reach their occupation during lockdown

Ensure maintaining efforts to fight animal diseases in times of COVID-19

Defining essential veterinary activities

Ensure no unjustified trade barriers are put in place
Improving knowledge of SARS-CoV-2 infection in animals

- The current uncertainty about coronavirus breeds opportunity for misinformation
- Scientific knowledge need building in the area of SARS-CoV-2 infection at the human-animal interface

Develop new tools and strategies, raise awareness and support risk assessment
2019 novel Coronavirus
Global research and innovation forum: towards a research roadmap

Thematic Area 2:
Animal and environmental research on the virus origin, and management measures at the human-animal interface

https://www.who.int/blueprint/priority-diseases/key-action/Roadmap-version-FINAL-for-WEB.pdf?ua=1
COVID-19 and farmed and domestic animals

Questions and Answers

Check out NOW the new OIE COVID-19 Portal

Discover the new portal now

INFECTION WITH SARS-COV-2 IN ANIMALS

Aetiology Epidemiology Diagnosis Prevention and Control References

SARS-CoV-2 (SARS-CoV-2) is the pathogenic agent that causes the disease COVID-19 and was first reported in December 2019. SARS-CoV-2 is thought to have emerged from an animal source and then spilled-over to the human population. Although genetically closely related viruses have been isolated from Rhinolophus bats, the exact source of SARS-CoV-2 and route of introduction into the human population has not been established.

The current pandemic of COVID-19 is being sustained through human to human transmission. Animal infections with SARS-CoV-2 have been reported in several countries. Several animal species have proven to be susceptible (Table 1) to infection with SARS-CoV-2 either naturally or by experimental infection. Important livestock species (pigs and poultry) have been demonstrated not to be susceptible to infection through experimental studies. Further studies are needed to understand if and how different animals could be affected by SARS-CoV-2.

It is important to monitor infections in animals to better understand their epidemiological significance for animal health, biodiversity, and human health. Evidence from risk assessments, epidemiological investigations, and experimental studies do not suggest that live animals or animal products play a role in SARS-CoV-2 infection of humans.

The importance of coordination
Opportunities: strengthening Veterinary and Health Services

60% of existing human infectious diseases are zoonotic

At least 75% of emerging infectious diseases of humans (including Ebola, HIV, and influenza) have an animal origin
Opportunities

Will COVID-19 push the digital revolution in agriculture?
Conclusion

- The food system in Europe is managing the crisis without significant disruption to the food chain → resilience
- Veterinary Services had to work managing unusually high level of uncertainty, with good results → adaptation
- Unprecedented mobilisation of the research community: science responded faster to risk managers needs → collaboration
- Implementation of a response in a One Health framework → interdisciplinarity

Are these changes here to stay?

Despite Covid-19, EU agricultural firms want to expand further

By Florence Schulz | EURACTIV.de | translated by Sarah Lawton

17-08-2020
Thank you for your attention