



Infection with SARS-CoV-2,
Greece

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Information received on 15/12/2020 from Mrs Chrysoula Dile, Head, Animal Health Directorate, Ministry of Rural Development and Food, ATHENS, Greece

Summary

Report type	Immediate notification
Date of start of the event	04/12/2020
Date of confirmation of the event	08/12/2020
Report date	15/12/2020
Date submitted to OIE	15/12/2020
Reason for notification	Emerging disease
Morbidity	2 (scale 0 to 5)
Mortality	1 (scale 0 to 5)
Zoonotic impact	The Y453F mutation in the spike (S) protein of the virus, referred to as mink-related-variant, has been detected in 5 sequenced SARS-CoV-2 genomes from human cases directly related to mink (farm workers/owners). With regard to the sequenced mink samples, the latest results show the presence of the Y453F mutation in 1 of the farms tested so far. None of the other mutations described on the Rapid Risk Assessment of the 12th November 2020 from EU agencies (ECDC, EFSA, EMA) has been found up to now neither in humans nor animals. Sequencing of virus genomes from human and mink samples is ongoing
Causal agent	SARS-CoV-2

New outbreaks (3)

Outbreak 1 (KOZANI_7)	Regional Unit of Kozani, Local Community of Klima, Municipality of Voio, Dytiki Makedonia					
Date of start of the outbreak	04/12/2020					
Outbreak status	Continuing (or date resolved not provided)					
Epidemiological unit	Farm					
Affected animals	Species	Susceptible	Cases	Deaths	Killed and disposed of	Slaughtered
	Mustelidae	2300	43	43	0	0
Affected population	The animals are bred in a commercial farm for their fur. Suspicion was raised in the framework of passive surveillance following notification about a) increased mortality and b) a confirmed human case (farm owner) for COVID-19. Samples (oropharyngeal swabs) were collected from ten dead animals and all of them were tested positive with RT-PCR. Mink that died were relatively old and fat and showed mild respiratory symptoms and reduced feed intake. It is assumed that more animals were infected but their number cannot be calculated because of missing information.					

Outbreak 2 (KOZANI_8)	Regional Unit of Kozani, Local Community of Peponia, Municipality of Voio, Dytiki Makedonia					
Date of start of the outbreak	04/12/2020					
Outbreak status	Continuing (or date resolved not provided)					
Epidemiological unit	Farm					
Affected animals	Species	Susceptible	Cases	Deaths	Killed and disposed of	Slaughtered
	Mustelidae	7500	900	160	0	0
Affected population	The animals are bred in a commercial farm for their fur. Suspicion was raised in the framework of passive surveillance following notification about a) increased mortality and b) four confirmed human cases (farm owner and workers) for COVID-19. Samples (oropharyngeal swabs) were collected from ten dead animals and all of them were tested positive with RT-PCR. Infected mink showed respiratory symptoms and reduced feed intake.					

Outbreak 3 (GREVENA_3)	Regional Unit of Grevena, Local Community of Kivotos, Municipality of Grevena, Dytiki Makedonia					
Date of start of the outbreak	04/12/2020					
Outbreak status	Continuing (or date resolved not provided)					

Epidemiological unit	Farm					
Affected animals	Species	Susceptible	Cases	Deaths	Killed and disposed of	Slaughtered
	Mustelidae	4000	0	0	0	0
Affected population	The animals are bred in a commercial farm for their fur. Suspicion was raised in the framework of passive surveillance following notification about a confirmed human case (farm worker) for COVID-19. Samples (oropharyngeal swabs) were collected from twenty animals and were tested positive with RT-PCR. Mink showed no respiratory symptoms and feed intake was not reduced. Mortality did not increase. It was negligible and within the expected range based on the farm records, thus is considered unrelated to the outbreak.					

Summary of outbreaks	Total outbreaks: 3					
Total animals affected	Species	Susceptible	Cases	Deaths	Killed and disposed of	Slaughtered
	Mustelidae	13800	943	203	0	0
Outbreak statistics	Species	Apparent morbidity rate	Apparent mortality rate	Apparent case fatality rate	Proportion susceptible animals lost*	
	Mustelidae	6.83%	1.47%	21.53%	1.47%	
*Removed from the susceptible population through death, destruction and/or slaughter						

Epidemiology

Source of the outbreak(s) or origin of infection	Unknown or inconclusive Farm staff from all infected farms tested positive for COVID-19
Epidemiological comments	In total, 15 out of 91 mink farms have been tested positive for SARS-CoV-2 since the first outbreak was confirmed on 13/11/2020. Stamping out and official disposal of carcasses were only applied to the first confirmed farm. At that point, it was decided to stop culling animals. The whole country is practically considered a single zone. Movement restrictions (complete standstill for live animals) and strict biosecurity measures, including the mandatory use of personal protective equipment (PPE), have been imposed not only to the infected mink farms, but also to all fur farms in Greece. Reporting of increased mink morbidity and mortality to the veterinary authorities is obligatory at national level. When human vaccines become available, everyone who comes in close contact with mink (farm workers, owners, veterinarians) shall be included in the highest priority group to receive vaccination. In the framework of the one-health approach, veterinary and health authorities have been closely collaborating both at local and central level. Active repeated weekly surveillance (rapid tests and RT-PCR) is conducted by health authorities in all mink farm workers/owners. Results are notified directly to veterinary authorities which investigate every farm that is epidemiologically linked to a confirmed human case. In addition, veterinary authorities investigate every notification for increased animal morbidity and mortality. Oropharyngeal swabs are collected from the animals and tested with RT-PCR. Sequencing of virus genomes from human and mink samples is conducted.

Control measures

Measures applied	Movement control inside the country Surveillance outside containment and/or protection zone Surveillance within containment and/or protection zone Traceability Quarantine Zoning Vaccination permitted (if a vaccine exists) No treatment of affected animals
Measures to be applied	No other measures

Diagnostic test results

Laboratory name and type	Species	Test	Test date	Result
Centre for Research and Technology Hellas (CERTH) (National laboratory)	Mustelidae	real-time PCR	08/12/2020	Positive

Future Reporting

The event is continuing. Weekly follow-up reports will be submitted.
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Map of outbreak locations

