

AQUATIC ANIMAL DISEASE REPORT - 2021

Country/territory: Singapore		Disease status/occurrence code a/b/												Level of diagnosis	Epidemiological comment numbers
Item	Month														
DISEASES PREVALENT IN THE REGION	January	February	March	April	May	June	July	August	September	October	November	December			
FINFISH DISEASES															
OIE-listed diseases															
1. Infection with epizootic haematopoietic necrosis virus	0000	0000	0000	0000	0000	0000									
2. Infection with infectious haematopoietic necrosis virus	0000	0000	0000	0000	0000	0000									
3. Infection with spring viraemia of carp virus	0000	0000	0000	0000	0000	0000									
4. Infection with viral haemorrhagic septicaemia virus	0000	0000	0000	0000	0000	0000									
5. Infection with <i>Aphanomyces invadans</i> (EUS)	0000	0000	0000	0000	0000	0000									
6. Infection with red sea bream iridovirus	(2019)	(2019)	(2019)	(2019)	(2019)	(2019)									
7. Infection with koi herpesvirus	(2019)	(2019)	(2019)	(2019)	(2019)	(2019)									
Non OIE-listed diseases															
8. Grouper iridoviral disease	(2014)	(2014)	(2014)	(2014)	(2014)	(2014)									
9. Viral encephalopathy and retinopathy	(2020)	(2020)	(2020)	(2020)	(2020)	(2020)									
10. Enteric septicaemia of catfish	****	****	****	****	****	****							III	5	
11. Carp Edema Virus Disease	****	****	****	****	****	****									
12. Tilapia lake virus (TILV)	0000	0000	0000	0000	0000	0000									
MOLLUSC DISEASES															
OIE-listed diseases															
1. Infection with <i>Bonamia exitiosa</i>	****	****	****	****	****	****									
2. Infection with <i>Perkinsus olseni</i>	****	****	****	****	****	****									
3. Infection with abalone herpesvirus	****	****	****	****	****	****									
4. Infection with <i>Xenohallotis californiensis</i>	****	****	****	****	****	****									
5. Infection with <i>Bonamia ostreae</i>	****	****	****	****	****	****									
Non OIE-listed diseases															
6. Infection with <i>Marteilioides chungmuensis</i>	****	****	****	****	****	****									
7. Acute viral necrosis (in scallops)	****	****	****	****	****	****									
CRUSTACEAN DISEASES															
OIE-listed diseases															
1. Infection with Taura syndrome virus	0000	0000	0000	0000	0000	0000									
2. Infection with white spot syndrome virus	(2018)	(2018)	+	(2021)	(2021)	(2021)							III	1	
3. Infection with yellow head virus genotype 1	0000	0000	0000	0000	0000	0000									
4. Infection with infectious hypodermal and haematopoietic necrosis virus	0000	0000	0000	0000	0000	0000									
5. Infection with infectious myonecrosis virus	0000	0000	0000	0000	0000	0000									
6. Infection with <i>Macrobrachium rosenbergii</i> nodavirus (White Tail disease)	****	****	****	****	****	****									
7. Infection with <i>Hepatobacter penaei</i> (Necrotising hepatopancreatitis)	0000	0000	0000	0000	0000	0000									
8. Acute hepatopancreatic necrosis disease (AHPND)	0000	0000	0000	0000	0000	0000									
9. Infection with <i>Aphanomyces astaci</i> (Crayfish plague)	****	****	****	****	****	****									
Non OIE-listed diseases															
10. Hepatopancreatic Microsporidiosis caused by <i>Enterocytozoon hepatopenaei</i> (HPM-EHP)	****	****	****	****	****	****									
11. Viral covert mortality disease (VCMD) of shrimps	****	****	****	****	****	****									
12. <i>Spiroplasma eriocheitis</i> infection	****	****	****	****	****	****									
13. Decapod iridescent virus 1 (DIV-1)	****	****	****	****	****	****									
AMPHIBIAN DISEASES															
OIE-listed diseases															
1. Infection with <i>Ranavirus</i> species	****	****	****	****	****	****									
2. Infection with <i>Batrachochytrium dendrobatidis</i>	(2020)	(2020)	(2020)	(2020)	(2020)	(2020)									
3. Infection with <i>Batrachochytrium salamandrivorans</i>	(2018)	(2018)	(2018)	(2018)	(2018)	(2018)									

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 Date: 20 July 2021

ANY OTHER DISEASES OF IMPORTANCE												
1 Infection with Scale Drop Disease Virus	+	(2021)	(2021)	(2021)	(2021)	(2021)					III	2
2 Infection with Big Belly bacterium	+	(2021)	(2021)	(2021)	(2021)	(2021)					II	2
3 Infection with Lymphocystis virus	0000	0000	+	(2021)	(2021)	(2021)					III	3
4 Infection with <i>Nocardia</i> sp.	(2018)	(2018)	(2018)	+	+	+					III	4,6
5 Infection with <i>Streptococcus iniae</i>	(2020)	(2020)	(2020)	+	(2021)	+					III	4,6,8
6 Infection with <i>Tenacibaculum</i> sp.	(2019)	(2019)	(2019)	(2019)	(2019)	+					II	7

DISEASES PRESUMED EXOTIC TO THE REGION^a

LISTED BY THE OIE

Finfish: Infection with HPR-deleted or HPR0 salmon anaemia virus; Infection with salmon pancreas disease virus; Infection with *Gyrodactylus salaris*.

Molluscs: Infection with *Marteilia refringens*; *Perkinsus marinus*.

NOT LISTED BY THE OIE

Finfish: Channel catfish virus disease

^a Please use the following occurrence code:

Occurrence code and symbol	Definition	Occurrence code and symbol	Definition
Disease present +	The disease is present with clinical signs in the whole country (in domestic species or wildlife)	Disease absent -	The disease was absent in the country during the reporting period (in domestic species or wildlife).
Disease limited to one or more zones +()	The disease is present with clinical signs, and limited to one or more zones/compartments (in domestic species or wildlife)	Never reported 0000	The disease has "never been reported" (historically absent) for the whole country in domestic species and wildlife.
Infection/infestation +?	Confirmed infestation or infection using diagnostic tests, but no clinical signs observed (in domestic species or wildlife)	No information ***	No information is available regarding the presence or the absence of this disease during the reporting period (in domestic species or wildlife).
Infection/infestation limited to one or more zones +?()	Confirmed infestation or infection using diagnostic tests, but no clinical signs observed and limited to one or more zones/compartments (in domestic species or wildlife)		
Disease suspected +	The presence of the disease was suspected but not confirmed (in domestic species or wildlife)		
Disease suspected but not confirmed and limited to one or more zones +?()	The presence of the disease was suspected but not confirmed and limited to one or more zones/compartments (in domestic species or wildlife)		

^b If there is any changes on historical data, please highlight in RED.

1. Epidemiological comments:

(Comments should include: 1) Origin of the disease or pathogen (history of the disease); 2) Species affected; 3) Disease characteristics (unusual clinical signs or lesions); 4) Pathogen (isolated/sero-typed); 5) Mortality rate (high/low; decreasing/increasing); 6) Death toll (economic loss, etc); 7) Size of infected areas or names of infected areas; 8) Preventive/control measures taken; 9) Samples sent to national or international laboratories for confirmation (indicate the names of laboratories); 10) Published paper (articles in journals/website, etc). and 11) Unknown diseases: describe details as much as possible.)

Comment No.

1	White Spot Syndrome Virus (WSSV) DNA was detected by real-time PCR in a batch of ornamental crayfish imported by a local ornamental fish trading facility. All specimens of the affected batch were culled. The premises were inspected by the competent animal health authority and found to have good biosecurity practices.
2	Scale Drop Disease Virus (SDDV) was detected through a combination of PCR and histopathology in a batch of diseased Asian seabass (<i>Lates calcarifer</i>) submitted by a commercial offshore flow-through farming system. In 1 fish, histopathology analysis of the intestine also detected evidence of Big Belly bacterium infection. A disease investigation was conducted jointly by the competent animal health authority and farm staff, and identified the growout tanks as being a reservoir of pathogens. The farm was advised to consider vaccinating the nursery fish and shifting the growout stages to flow-through netcages.
3	Lymphocystis virus was detected via a combination of PCR and histopathology in a batch of diseased Red snapper submitted by a commercial offshore netcage farm. The fish presented with black wart-like lesions on the skin. The farm was advised on the mode of fish to fish transmission and management of this virus.
4	<i>Nocardia seriolae</i> infection was detected by a combination of histopathology, culture and sequencing in two batches of diseased threadfin submitted by an offshore commercial netcage farm in April and May respectively. Concurrently, fish from the April submission also showed histopathologic evidence of gram-positive cocci infection, which was supported by culture and PCR confirming the aetiological agent as <i>Streptococcus iniae</i> . The farm was informed of the detection and advised on the results of <i>in vitro</i> antibiotic sensitivity tests to inform their selection of antimicrobial treatment. The farm also adopted frequent removal of dead and moribund fish to reduce shedding of pathogen into the water column.
5	Viral Nervous Necrosis Virus (VNNV) was detected via a combination of PCR and histopathology in a batch of diseased pompano and two batches of diseased grouper, all submitted by the same offshore netcage farm, in May. VNNV was detected from a separate batch of diseased pompano from the same farm, in June. The farm's attending veterinarian was informed of the detection.
6	<i>Nocardia</i> sp. infection was detected by a combination of histopathology, culture and isolation in a batch of diseased red snapper submitted by an offshore netcage farm in June. Concurrently, the same batch of snapper also showed histopathologic evidence of gram-positive cocci infection, which was supported by culture, PCR and sequencing confirming the aetiological agent as <i>Streptococcus iniae</i> . The farm's attending veterinarian was informed of the detection and advised on the results of <i>in vitro</i> antibiotic sensitivity tests to inform their selection of antimicrobial treatment. The farm also adopted frequent removal of dead and moribund fish to reduce shedding of pathogen into the water column.
7	Histopathologic findings compatible with Tenacibaculosis were detected in a batch of diseased pompano fingerlings submitted in June. The farm's attending veterinarian was promptly informed of the diagnosis.
8	<i>Streptococcus iniae</i> infection was detected by a combination of histopathology, culture and PCR in a batch of diseased red snapper submitted by an offshore farm in June. Concurrently the fish had a significant infestation with <i>Benedenia</i> sp. The farm's attending veterinarian was promptly informed of the diagnosis.

2. New aquatic animal health regulations introduced within past six months (with effective date):

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