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QUARTERLY AQUATIC ANIMAL DISEASE REPORT (Asia and Pacific Region)

January-March 2003

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Network of Aquaculture Centres in Asia-Pacific

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Contents

Editorial v

Reports Received by the NACA Secretariat 1

Australia 3
China 6
Hong Kong, China 8
India 10
Japan 12
Lao PDR 14
Malaysia 16
Myanmar 18
Nepal 20
Pakistan 22
Philippines 24
Republic of Korea 26
Singapore 28
Sri Lanka 30
Thailand 32
Vietnam 34

Related publications 36
List of National Coordinators 38
List of Diseases under the Asia-Pacific Quarterly Aquatic Animal Disease Report 42
New Instructions on how to fill in the *Quarterly Aquatic Animal Disease Report* 43

Editorial

The Quarterly Aquatic Animal Disease (QAAD) reporting system for the Asia-Pacific region developed and implemented jointly by NACA/FAO/OIE is one of the key activities of NACA's regional aquatic animal health management program.

The goal is to reduce the economic impact of aquatic animal diseases and minimize the risk of regional and international spread of aquatic animal pathogens. Systematic and transparent regional disease reporting will assist to promote responsible trade.

The benefits of disease reporting for a participating country are many. Participating countries stand to benefit in terms of international trade. Because of their commitment to regional disease reporting, they also attract international support to strengthen their national capabilities in aquatic animal health management.

The first QAAD report for the period July-September 1998, compiled by the National Coordinators of the FAO/NACA regional project was published in April 1999. Since then, QAAD reports have been published regularly. This report is the 19th in the series.

Disease reporting is one of the main components of the national strategies on aquatic animal health management. During the last five years, considerable national, regional and international resources have been invested to promote development and implementation of national aquatic animal health strategies in the countries of the region.

There is no end to improvement. The reports can be significantly improved in terms of quality, accuracy and compliance. Quality reports serve as reliable tools for countries in the region and elsewhere to make decisions regarding trade in aquatic animals. Reports coming from some of the participating countries in the region can serve as useful models for other countries to emulate. The work being done by National Coordinators and Focal Points for disease reporting are commendable and we hope that it will continue to improve to make Asia-Pacific regional aquatic animal disease reporting a model for the whole world.

Reports Received by the NACA Secretariat

Country: **Australia** Period: January-March 2003

Item	Disease status [a]			Level of diagnosis	Epidemiolo-gical comment numbers
	Month				
Diseases prevalent in some parts of the region	January	February	March		
Finfish diseases					
1. Epizootic haematopoietic necrosis*	+	-(2003)	-(2003)	III	1
2. Infectious haematopoietic necrosis*	0000	0000	0000		
3. *Oncorhynchus masou* virus disease*	0000	0000	0000		
4. Viral haemorrhagic septicaemia*	0000	0000	0000		
5. Infectious pancreatic necrosis	0000	0000	0000		
6. Viral encephalopathy and retinopathy	-(2002)	-(2002)	+	III	2
7. Epizootic ulcerative syndrome (EUS)	-(2002)	+	-(2003)	II	3
8. Bacterial kidney disease	0000	0000	0000		
9. Red sea bream iridoviral disease	0000	0000	0000		
Mollusc diseases					
1. Bonamiosis (*B. exitiosus*., *B. ostreae , M. roughleyi*)*	0000/0000/-(2002)	0000/0000/-(2002)	0000/0000/-(2002)		4
2. Marteiliosis (*Marteilia refringens, M. sydneyi*)*	0000/-(2002)	0000/-(2002)	0000/-(2002)		5
3. Mikrocytosis (*Mikrocytos mackini*)*	0000	0000	0000		
4. Perkinsosis (*Perkinsus marinus, P. olseni/atlanticus* [c/])*	0000 / +	0000 / +	0000 / +	I	6
5. MSX disease (*Haplosporidium. nelsoni*)*	0000	0000	0000		
Crustacean diseases					
1. Yellowhead disease (YH virus; gill-associated virus)*	0000 / -(2002)	0000 / +	0000 / +	III	7
2. White spot disease*	0000	0000	0000		
3. Taura syndrome*	0000	0000	0000		
4. Infectious hypodermal and haematopoietic necrosis	0000	0000	0000		
5. Spawner-isolated mortality virus disease	?	?	?		8
Diseases presumed exotic to the region, but reportable to the OIE					
Finfish disease					
1. Spring viraemia of carp*	0000	0000	0000		
Any other diseases of importance [b/]					
Unknown diseases of serious nature					
1. Koi mass mortality	***	***	***		
2. Akoya oyster disease	0000	0000	0000		

b/ In particular, these include the following diseases:
Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Epitheliocystis; Gyrodactylosis (*Gyrodactylus salaris*); Enteric septicaemia of catfish; White sturgeon iridoviral disease; Grouper iridoviral disease
Mollusc: Withering syndrome of abalones (*Candidatus* Xenohaliotis californiensis); SSO disease (*Haplosporidium costale*); Marteilioides infection (*Marteilioides chungmuensis*)
Crustacean: Tetrahedral baculovirosis (*Baculovirus penaei*); Crayfish plague (*Aphanomyces astaci*); Necrotising hepatopancreatitis; Baculoviral midgut gland necrosis

c/ Although *Perkinsus olseni* and *P. altanticus* are now considered conspecific, they may have different host species in different regions, and countries are encouraged to provide epidemiological comments where either of these agents occurs.

* OIE notifiable diseases
[a] Please use the following symbols:
+ Disease reported or known to be present
+? Serological evidence and/or isolation of causative agent but no clinical diseases
? Suspected by reporting officer but presence not confirmed
+() Occurrence limited to certain zones
*** No information available
0000 Never reported
- Not reported (but disease is known to occur
(year) year of last occurrence

1. Epidemiological comments:

Comment No.	
1	**Epizootic haematopoietic necrosis** was reported from Victoria in dead redfin (*Perca fluviatilus*) in a reservoir in January 2003 (passive surveillance). Not reported this period despite passive surveillance but known to have previously occurred in New South Wales (last year reported 2000) and South Australia (last year reported 1992). Targeted active surveillance and never reported in Tasmania. Passive surveillance and never reported in Queensland or Western Australia. Annual occurrence of the disease in the Australian Capital Territory, but no laboratory confirmation. No information available this quarter from the Northern Territory.
2	**Viral encephalopathy and retinopathy** was detected in Queensland by nested RT-PCR in barramundi larvae (*Lates calcarifer*) in a hatchery in March 2003 (passive surveillance). Not reported from Tasmania this period despite active surveillance (last year reported 2000) and South Australia (last year reported 1998). Never reported from New South Wales, Victoria or Western Australia despite passive surveillance. No information available in the Australian Capital Territory or the Northern Territory.
3	**Epizootic ulcerative syndrome** was detected in Queensland by histology in silver perch (*Bidyanus bidyanus*) in February 2003. EUS was not reported during this period but is known to have occurred in 2002 in Victoria and New South Wales (active surveillance) and Western Australia (passive surveillance). Passive surveillance and never reported in South Australia and Tasmania. No information available in the Australian Capital Territory or the Northern Territory.
4	***Bonamia ostreae*** and ***B.exitiosus*****:** Never reported in South Australia despite active surveillance. Passive surveillance and never reported in New South Wales, Queensland, Tasmania, Victoria and Western Australia. No information available in the Australian Capital Territory (no marine water responsibility). No information available from the Northern Territory. ***Mikrocytos roughleyi:*** Never reported in South Australia or Tasmania despite active surveillance. Not reported during this period (passive surveillance) but known to have occurred in New South Wales (last year reported 2002) and Western Australia (last year reported 1996). Considered enzootic in Queensland but lack of diagnostic submissions. Passive surveillance and never reported in Victoria. No information available in the Australian Capital Territory (no marine water responsibility). No information available in the Northern Territory.
5	***Marteilia refringens:*** Active surveillance and never reported in South Australia or Tasmania. Passive surveillance and never reported in New South Wales, Queensland, Victoria and Western Australia. No information available in the Australian Capital Territory (no marine water responsibility). No information available in the Northern Territory. ***Marteilia sydneyi*****:** Not reported this period despite passive surveillance from New South Wales and Queensland (last year reported 2002), or Western Australia (last year 1994). Active surveillance and never reported in South Australia or Tasmania. Passive surveillance and never reported in Victoria. No information available in the Australian Capital Territory (no marine water responsibility). No information available in the Northern Territory.

6	***Perkinsus marinus**:* Active surveillance and never reported from South Australia or Tasmania. Passive surveillance and never reported in New South Wales, Queensland, Victoria and Western Australia. No information available for the Australian Capital Territory (no marine water responsibility). No information available for the Northern Territory. ***Perkinsus olseni/atlanticus**:* Reported from South Australia in January, February and March 2003 in wild, but not in cultured, *Haliotis* spp. (targeted active surveillance). Not reported this quarter from New South Wales, despite passive surveillance (last year reported 2002), or Western Australia (last year reported 1995). Targeted active surveillance and never reported in Tasmania. Passive surveillance and never reported in Queensland and Victoria. No information available in the Australian Capital Territory (no marine water responsibility). No information available in the Northern Territory.
7	**Yellowhead disease**: Active surveillance and never reported in New South Wales and Western Australia. Passive surveillance and never reported in Queensland, South Australia and Victoria. No information available from Tasmania (susceptible species not present). No information available from the Australian Capital Territory (no marine water responsibility). No information available from the Northern Territory. **Gill-associated virus**: Outbreaks of peripheral neuropathy and retinopathy, a disease associated with gill-associated virus infection, were detected in farmed *Penaeus monodon* prawns in New South Wales in February and March 2003. In Queensland, gill-associated virus (GAV) can be present as a chronic infection without clinical disease and is considered one of the viruses associated with Mid-Crop Mortality Syndrome and MCMS-like syndromes in farmed prawns. The lack of a clear case definition and an apparent role for mixed virus infections makes reporting of conclusive GAV-specific epizootics in Queensland impossible. Active surveillance and never reported in Western Australia. Passive surveillance and never reported in South Australia and Victoria. No information available in Tasmania (susceptible species not present), the Northern Territory and the Australian Capital Territory (no marine water responsibility).
8	The lack of a clear case definition, of readily available detection tests and an apparent role for mixed virus infections, make any conclusion about the incidence of SMV-related epizootics impossible.

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

The Aquatic Animal Health Committee (AAHC)

On the 5th of September 2002, Australian Governments endorsed the establishment of the AAHC as the primary industry/government interface –for policy, communication and awareness related to aquatic animal health issues. The AAHC was subsequently formed in December 2002 and held its inaugural meeting on 6 February 2003. The role of the AAHC is to:

- Identify emerging aquatic animal health issues and make recommendations for policy development and management;
- Take a lead role in developing and reviewing national aquatic animal health policies and programs;
- Actively respond to identified resource requirements of national aquatic animal health policies and programs;
- Provide advice and submit recommendations to governments and other stakeholders on those issues;
- Report on strategic issues and submit recommendations relating to AQUAPLAN and its implementation to governments and other stakeholders; and
- Review communication and extension strategies on aquatic animal health issues and facilitate implementation of those strategies.

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Country: **China PR** Period: January-March 2003

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
	Month				
Diseases prevalent in some parts of the region	January	February	March		
Finfish diseases					
1. Epizootic haematopoietic necrosis*	0000	0000	0000		
2. Infectious haematopoietic necrosis*	—	—	—		
3. *Oncorhynchus masou* virus disease*	0000	0000	0000		
4. Viral haemorrhagic septicaemia*	0000	0000	0000		
5. Infectious pancreatic necrosis	0000	0000	0000		
6. Viral encephalopathy and retinopathy	0000	0000	0000		
7. Epizootic ulcerative syndrome (EUS)	0000	0000	0000		
8. Bacterial kidney disease	0000	0000	0000		
9. Red sea bream iridoviral disease	0000	0000	0000		
Mollusc diseases					
1. Bonamiosis (*B. exitiosus*., *B. ostreae , M. roughleyi*)*	0000	0000	0000		
2. Marteiliosis (*Marteilia refringens, M. sydneyi*)*	0000	0000	0000		
3. Mikrocytosis (*Mikrocytos mackini*)*	0000	0000	0000		
4. Perkinsosis (*Perkinsus marinus, P. olseni/atlanticus*[c/])*	0000	0000	0000		
5. MSX disease (*Haplosporidium. nelsoni*)*	0000	0000	0000		
Crustacean diseases					
1. Yellowhead disease (YH virus; gill-associated virus)*	0000	0000	0000		
2. White spot disease*	0000	0000	+ ( )		
3. Taura syndrome*	0000	0000	+ ( )		
4. Infectious hypodermal and haematopoietic necrosis	***	***	***		
5. Spawner-isolated mortality virus disease	0000	0000	?		
Diseases presumed exotic to the region, but reportable to the OIE					
Finfish disease					
1. Spring viraemia of carp*	***	***	***		
Any other diseases of importance [b/]					
Unknown diseases of serious nature					
1. Koi mass mortality	0000	0000	0000		
2. Akoya oyster disease	0000	0000	0000		

b/ In particular, these include the following diseases:
Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Epitheliocystis; Gyrodactylosis (*Gyrodactylus salaris*); Enteric septicaemia of catfish; White sturgeon iridoviral disease; Grouper iridoviral disease
Mollusc: Withering syndrome of abalones (*Candidatus* Xenohaliotis californiensis); SSO disease (*Haplosporidium costale*); Marteilioides infection (*Marteilioides chungmuensis*)
Crustacean: Tetrahedral baculovirosis (*Baculovirus penaei*); Crayfish plague (*Aphanomyces astaci*); Necrotising hepatopancreatitis; Baculoviral midgut gland necrosis
c/ Although *Perkinsus olseni* and *P. altanticus* are now considered conspecific, they may have different host species in different regions, and countries are encouraged to provide epidemiological comments where either of these agents occurs.

* OIE notifiable diseases
[a] Please use the following symbols:
\+ Disease reported or known to be present
+? Serological evidence and/or isolation of causative agent but no clinical diseases
? Suspected by reporting officer but presence not confirmed
+() Occurrence limited to certain zones
*** No information available
0000 Never reported
\- Not reported (but disease is known to occur
(year) year of last occurrence

1. Epidemiological comments:

Comment No.	
1	The first quarter is not the fishery production period in China; therefore there is no important aquatic animal disease report in most areas of China.
2	We received the disease report of White spot disease and Taura syndrome in Southern White shrimp *(Penaeus vannamei Boone*) in Hainan province (the most southern province of China) in March 2003. The average mortality rate reached 30 percent.
3	In 1998, the U.K. inspected SVC in the Ornamental fish imported from China. However SVC had not been confirmed by authorities, and also no reports on its occurrence in China has been received as yet.

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

Country: **Hong Kong China** Period: January-March 2003

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
	Month				
Diseases prevalent in some parts of the region	January	February	March		
Finfish diseases					
1. Epizootic haematopoietic necrosis*	0000	0000	0000	II	
2. Infectious haematopoietic necrosis*	0000	0000	0000	III	
3. *Oncorhynchus masou* virus disease*	0000	0000	0000	II	
4. Viral haemorrhagic septicaemia*	0000	0000	0000	III	
5. Infectious pancreatic necrosis	0000	0000	0000	III	
6. Viral encephalopathy and retinopathy	(+? 2001)			III	1
7. Epizootic ulcerative syndrome (EUS)	0000	0000	0000	II	
8. Bacterial kidney disease	0000	0000	0000	III	
9. Red sea bream iridoviral disease	0000	0000	0000	III	
Mollusc diseases					
1. Bonamiosis (*B. exitiosus*., *B. ostreae , M. roughleyi*)*	0000	0000	0000	II	
2. Marteiliosis (*Marteilia refringens, M. sydneyi*)*	0000	0000	0000	II	
3. Mikrocytosis (*Mikrocytos mackini*)*	0000	0000	0000	II	
4. Perkinsosis (*Perkinsus marinus, P.*	0000	0000	0000	II	
5. MSX disease (*Haplosporidium. nelsoni*)*	0000	0000	0000	II	
Crustacean diseases					
1. Yellowhead disease (YH virus; gill-associated virus)*	0000	0000	0000	III	
2. White spot disease*	+?	+?	+?	III	2
3. Taura syndrome*	0000	0000	0000	III	
4. Infectious hypodermal and haematopoietic necrosis	0000	0000	0000	II	
5. Spawner-isolated mortality virus disease	0000	0000	0000	II	
Diseases presumed exotic to the region, but reportable to the OIE					
Finfish disease					
1. Spring viraemia of carp*	0000	0000	0000	III	
Any other diseases of importance [b/]					
1. Grouper Iridoviral Disease	(2002)			III	3
2. Epitheliocystis	+?(2002)	+?	+?	II	4
Unknown diseases of serious nature					
1. Koi mass mortality	0000	0000	0000	II	
2. Akoya oyster disease	0000	0000	0000	II	

b/ In particular, these include the following diseases:
Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Epitheliocystis; Gyrodactylosis (*Gyrodactylus salaris*); Enteric septicaemia of catfish; White sturgeon iridoviral disease; Grouper iridoviral disease
Mollusc: Withering syndrome of abalones (*Candidatus* Xenohaliotis californiensis); SSO disease (*Haplosporidium costale*); Marteilioides infection (*Marteilioides chungmuensis*)
Crustacean: Tetrahedral baculovirosis (*Baculovirus penaei*); Crayfish plague (*Aphanomyces astaci*); Necrotising hepatopancreatitis; Baculoviral midgut gland necrosis

c/ Although *Perkinsus olseni* and *P. altanticus* are now considered conspecific, they may have different host species in different regions, and countries are encouraged to provide epidemiological comments where either of these agents occurs.

* OIE notifiable diseases

[a] Please use the following symbols:

+ Disease reported or known to be present
+? Serological evidence and/or isolation of causative agent but no clinical diseases
? Suspected by reporting officer but presence not confirmed
+() Occurrence limited to certain zones
*** No information available
0000 Never reported
- Not reported (but disease is known to occur
(year) year of last occurrence

1. Epidemiological comments:

Comment No.	
1	No further nodavirus isolations or disease for the reporting period.
2	First report in Hong Kong. White Spot Syndrome Virus (WSSV) infection was detected in asymptomatic ornamental Red Lobster (*Procambarus paeninsulanus*) in Jan 2003; affecting one farm. No mortalities were reported from the infection although 131 lobsters were quarantined and destroyed. Of the animals sampled, the infection rate was 37.5%. Diagnosis was confirmed by PCR, Immunosquash, Immunostain (DiagXostics), and histopathological demonstration of hyperthrophied gill and subcuticle epithelial cells. Cytological changes were verified by OIE crustacean disease expert Professor Donald Lightner to be consistent with WSSV infection. Precautionary stock quarantine included ornamental shrimps which came from the same source although these tested negative for WSSV. Restriction of export and import of crustacea from this farm was implemented from 30.1.2002 until 7.4.2003. Farm disinfection was carried out with chlorine solution and bleach powder under veterinary supervision. Repeat environmental testing indicated eradication of WSSV from the farm. Follow-up screening of new sources of crustacea (shrimps) were negative for WSSV and only shrimps from these clean sources were stocked and exported after lifting of the quarantine. The farm manager elected not to export *Procambarus paeninsulanus* until further testing and clearance which will be done when new sources of the species are available at the follow-up six monthly farm inspection and sampling scheduled for July 2003. Monitoring of other farms under the health certification program showed freedom from WSSV and no restrictions were placed on their export of crustacea.
3	No further iridovirus isolations or disease for the reporting period.
4	Observed from histological samples of gill in Goldfish Red Oranda associated with mild to moderate lamellar hyperplasia. Another case observed in gill of marine fish associated with severe lamellar oedema and fusion. As there were only 1-2 lesions in both cases, their causal link to the gill changes are not considered clinically significant.

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

Country: **India** Period: January-March 2003

Item	Disease status [a/] Month			Level of diagnosis	Epidemiological comment numbers
Diseases prevalent in some parts of the region	January	February	March		
Finfish diseases					
1. Epizootic haematopoietic necrosis*	?	?	?	I	
2. Infectious haematopoietic necrosis*	?	?	?	I	
3. *Oncorhynchus masou* virus disease*					
4. Viral haemorrhagic septicaemia*	?	?	?	I	
5. Infectious pancreatic necrosis	?	?	?	I	
6. Viral encephalopathy and retinopathy					
7. Epizootic ulcerative syndrome (EUS)	+()	+()	+()	II	
8. Bacterial kidney disease					
9. Red sea bream iridoviral disease					
Mollusc diseases					
1. Bonamiosis (*B. exitiosus*., *B. ostreae , M.*					
2. Marteiliosis (*Marteilia refringens, M. sydneyi*)*					
3. Mikrocytosis (*Mikrocytos mackini*)*					
4. Perkinsosis (*Perkinsus marinus, P.*					
5. MSX disease (*Haplosporidium. nelsoni*)*					
Crustacean diseases					
1. Yellowhead disease (YH virus; gill-associated	***	***	***		
2. White spot disease*	+()	+()	+()	III	
3. Taura syndrome*	***	***	***		
4. Infectious hypodermal and haematopoietic	***	***	***		
5. Spawner-isolated mortality virus disease	***	***	***		
Diseases presumed exotic to the region, but reportable to the					
Finfish disease					
1. Spring viraemia of carp*					
Any other diseases of importance [b/]					
Unknown diseases of serious nature					
1. Koi mass mortality					
2. Akoya oyster disease					

b/ In particular, these include the following diseases:
Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Epitheliocystis; Gyrodactylosis (*Gyrodactylus salaris*); Enteric septicaemia of catfish; White sturgeon iridoviral disease; Grouper iridoviral disease
Mollusc: Withering syndrome of abalones (*Candidatus* Xenohaliotis californiensis); SSO disease (*Haplosporidium costale*); Marteilioides infection (*Marteilioides chungmuensis*)
Crustacean: Tetrahedral baculovirosis (*Baculovirus penaei*); Crayfish plague (*Aphanomyces astaci*); Necrotising hepatopancreatitis; Baculoviral midgut gland necrosis

c/ Although *Perkinsus olseni* and *P. altanticus* are now considered conspecific, they may have different host species in different regions, and countries are encouraged to provide epidemiological comments where either of these agents occurs.

* OIE notifiable diseases

[a] Please use the following symbols:

+ Disease reported or known to be present
+? Serological evidence and/or isolation of causative agent but no clinical diseases
? Suspected by reporting officer but presence not confirmed
+() Occurrence limited to certain zones
*** No information available
0000 Never reported
- Not reported (but disease is known to occur
(year) year of last occurrence

1. **Epidemiological comments: Nil**

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

Country: **Japan** Period: January-March 2003

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
	Month				
Diseases prevalent in some parts of the region	January	February	March		
Finfish diseases					
1. Epizootic haematopoietic necrosis*	0000	0000	0000	I	
2. Infectious haematopoietic necrosis*	+	+	+	III	
3. *Oncorhynchus masou* virus disease*	+	+	+	III	
4. Viral haemorrhagic septicaemia*	+	+	+	III	
5. Infectious pancreatic necrosis	-	+	+	III	
6. Viral encephalopathy and retinopathy	-	-	-	I	
7. Epizootic ulcerative syndrome (EUS)	-	-	-	I	
8. Bacterial kidney disease	+	+	+	III	
9. Red sea bream iridoviral disease	-	+	+	III	
Mollusc diseases					
1. Bonamiosis (*B. exitiosus*., *B. ostreae , M. roughleyi*)*	0000	0000	0000	I	
2. Marteiliosis (*Marteilia refringens, M. sydneyi*)*	0000	0000	0000	I	
3. Mikrocytosis (*Mikrocytos mackini*)*	0000	0000	0000	I	
4. Perkinsosis (*Perkinsus marinus, P.*	0000	0000	0000	I	
5. MSX disease (*Haplosporidium. nelsoni*)*				I	1
Crustacean diseases					
1. Yellowhead disease (YH virus; gill-associated virus)*	0000	0000	0000	I	
2. White spot disease*	-	-	-	I	
3. Taura syndrome*	0000	0000	0000	I	
4. Infectious hypodermal and haematopoietic necrosis	0000	0000	0000	I	
5. Spawner-isolated mortality virus disease	0000	0000	0000	I	
Diseases presumed exotic to the region, but reportable to the OIE					
Finfish disease					
1. Spring viraemia of carp*	0000	0000	0000	I	
Any other diseases of importance [b/]					
Epitheliocystis	+	+	+	II	
Marteilioides infection (*Marteilioides chungmuensis*	-	-	-	I	
Unknown diseases of serious nature					
1. Koi mass mortality	0000	0000	0000	I	
2. Akoya oyster disease	-	-	-	I	

b/ In particular, these include the following diseases:
Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Epitheliocystis; Gyrodactylosis (*Gyrodactylus salaris*); Enteric septicaemia of catfish; White sturgeon iridoviral disease; Grouper iridoviral disease
Mollusc: Withering syndrome of abalones (*Candidatus* Xenohaliotis californiensis); SSO disease (*Haplosporidium costale*); Marteilioides infection (*Marteilioides chungmuensis*)
Crustacean: Tetrahedral baculovirosis (*Baculovirus penaei*); Crayfish plague (*Aphanomyces astaci*); Necrotising hepatopancreatitis; Baculoviral midgut gland necrosis

c/ Although *Perkinsus olseni* and *P. altanticus* are now considered conspecific, they may have different host species in different regions, and countries are encouraged to provide epidemiological comments where either of these agents occurs.

* OIE notifiable diseases

[a] Please use the following symbols:

+ Disease reported or known to be present
+? Serological evidence and/or isolation of causative agent but no clinical diseases
? Suspected by reporting officer but presence not confirmed
+() Occurrence limited to certain zones
*** No information available
0000 Never reported
- Not reported (but disease is known to occur
(year) year of last occurrence

1. Epidemiological comments:

Comment No.	
1	***Haplosporidium nelsoni*** was detected at 2% positive in Pacific oyster (*Crassostrea gigas*) spats collected from the North-eastern part of Japan (see OIE disease Information on the 5 October 2001 on the OIE internet homepage). However, mortality of disease of Pacific oyster associated with *H. nelsoni* has not been reported at all. Therefore, the symbol is not described at the portion of Haplosporidiosis in this report form.

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

Country: **Lao PDR** Period: January-March 2003

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
	Month				
Diseases prevalent in some parts of the region	January	February	March		
Finfish diseases					
1. Epizootic haematopoietic necrosis*	***	***	***		
2. Infectious haematopoietic necrosis*	***	***	***		
3. *Oncorhynchus masou* virus disease*	***	***	***		
4. Viral haemorrhagic septicaemia*	***	***	***		
5. Infectious pancreatic necrosis	***	***	***		
6. Viral encephalopathy and retinopathy	***	***	***		
7. Epizootic ulcerative syndrome (EUS)	***	***	***		
8. Bacterial kidney disease	***	***	***		
9. Red sea bream iridoviral disease	***	***	***		
Mollusc diseases					
1. Bonamiosis (*B. exitiosus*., *B. ostreae , M. roughleyi*)*	***	***	***		
2. Marteiliosis (*Marteilia refringens, M. sydneyi*)*	***	***	***		
3. Mikrocytosis (*Mikrocytos mackini*)*	***	***	***		
4. Perkinsosis (*Perkinsus marinus, P.*	***	***	***		
5. MSX disease (*Haplosporidium. nelsoni*)*	***	***	***		
Crustacean diseases					
1. Yellowhead disease (YH virus; gill-associated virus)*	***	***	***		
2. White spot disease*	***	***	***		
3. Taura syndrome*	***	***	***		
4. Infectious hypodermal and haematopoietic necrosis	***	***	***		
5. Spawner-isolated mortality virus disease	***	***	***		
Diseases presumed exotic to the region, but reportable to the OIE					
Finfish disease					
1. Spring viraemia of carp*	***	***	***		
Any other diseases of importance [b/]					
Unknown diseases of serious nature					
1. Koi mass mortality	***	***	***		
2. Akoya oyster disease	***	***	***		

b/ In particular, these include the following diseases:

Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Epitheliocystis; Gyrodactylosis (*Gyrodactylus salaris*); Enteric septicaemia of catfish; White sturgeon iridoviral disease; Grouper iridoviral disease

Mollusc: Withering syndrome of abalones (*Candidatus* Xenohaliotis californiensis); SSO disease (*Haplosporidium costale*); Marteilioides infection (*Marteilioides chungmuensis*)

Crustacean: Tetrahedral baculovirosis (*Baculovirus penaei*); Crayfish plague (*Aphanomyces astaci*); Necrotising hepatopancreatitis; Baculoviral midgut gland necrosis

c/ Although *Perkinsus olseni* and *P. altanticus* are now considered conspecific, they may have different host species in different regions, and countries are encouraged to provide epidemiological comments where either of these agents occurs.

* OIE notifiable diseases

[a] Please use the following symbols:

\+ Disease reported or known to be present

+? Serological evidence and/or isolation of causative agent but no clinical diseases

? Suspected by reporting officer but presence not confirmed

+() Occurrence limited to certain zones

*** No information available

0000 Never reported

\- Not reported (but disease is known to occur

(year) year of last occurrence

1. **Epidemiological comments: Nil**

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

Country: **Malaysia** Period: January-March 2003

Item	Disease status [a/] Month			Level of diagnosis	Epidemiological comment numbers
Diseases prevalent in some parts of the region	January	February	March		
Finfish diseases					
1. Epizootic haematopoietic necrosis*	0000	0000	0000		
2. Infectious haematopoietic necrosis*	0000	0000	0000		
3. *Oncorhynchus masou* virus disease*	0000	0000	0000		
4. Viral haemorrhagic septicaemia*	0000	0000	0000		
5. Infectious pancreatic necrosis	0000	0000	0000		
6. Viral encephalopathy and retinopathy	-	-	-		
7. Epizootic ulcerative syndrome (EUS)	(1987)	(1987)	(1987)	I & II	1
8. Bacterial kidney disease	0000	0000	0000		
9. Red sea bream iridoviral disease	0000	0000	0000		
Mollusc diseases					
1. Bonamiosis (*B. exitiosus*., *B. ostreae , M. roughleyi*)*	***	***	***		
2. Marteiliosis (*Marteilia refringens, M. sydneyi*)*	***	***	***		
3. Mikrocytosis (*Mikrocytos mackini*)*	***	***	***		
4. Perkinsosis (*Perkinsus marinus, P.*	***	***	***		
5. MSX disease (*Haplosporidium. nelsoni*)*	***	***	***		
Crustacean diseases					
1. Yellowhead disease (YH virus; gill-associated virus)*	-	-	-		
2. White spot disease*	+	-	+	I & III	2
3. Taura syndrome*	0000	0000	0000		
4. Infectious hypodermal and haematopoietic necrosis	0000	0000	0000		
5. Spawner-isolated mortality virus disease	0000	0000	0000		
Diseases presumed exotic to the region, but reportable to the OIE					
Finfish disease					
1. Spring viraemia of carp*	0000	0000	0000		
Any other diseases of importance [b/]					
Unknown diseases of serious nature					
1. Koi mass mortality	0000	0000	0000		
2. Akoya oyster disease	***	***	***		

b/ In particular, these include the following diseases:

Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Epitheliocystis; Gyrodactylosis (*Gyrodactylus salaris*); Enteric septicaemia of catfish; White sturgeon iridoviral disease; Grouper iridoviral disease

Mollusc: Withering syndrome of abalones (*Candidatus* Xenohaliotis californiensis); SSO disease (*Haplosporidium costale*); Marteilioides infection (*Marteilioides chungmuensis*)

Crustacean: Tetrahedral baculovirosis (*Baculovirus penaei*); Crayfish plague (*Aphanomyces astaci*); Necrotising hepatopancreatitis; Baculoviral midgut gland necrosis

c/ Although *Perkinsus olseni* and *P. altanticus* are now considered conspecific, they may have different host species in different regions, and countries are encouraged to provide epidemiological comments where either of these agents occurs.

* OIE notifiable diseases

[a] Please use the following symbols:

\+ Disease reported or known to be present

+? Serological evidence and/or isolation of causative agent but no clinical diseases

? Suspected by reporting officer but presence not confirmed

+() Occurrence limited to certain zones

*** No information available

0000 Never reported

\- Not reported (but disease is known to occur

(year) year of last occurrence

1. Epidemiological comments:

Comment No.	
1	EUS was reported as early as 1979 in Malaysia in paddy field fishes particularly snakehead, catfish and gouramy. In 1987, two clinical cases were submtited to the Regional Veterinary Laboratory for diagnosis and since then there were no known reported cases.
2	A case of White Spot Disease was detected in a 1-2 month grow-out pond in Kerpan, Kedah by PCR in the laboratory of the affected farm in January 2003. The stocks were destroyed by chlorination. Another case was reported in March 2003 in two newly stocked PL $_{35\text{-}50}$ grow-out ponds in Mersing, Johore by PCR in the laboratory of the affected farm. The stocks were also destroyed by chlorination.

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

Country: **Myanmar** Period: January-March 2003

Item	Disease status [a/] Month			Level of diagnosis	Epidemiological comment numbers
Diseases prevalent in some parts of the region	January	February	March		
Finfish diseases					
1. Epizootic haematopoietic necrosis*	***	***	***		
2. Infectious haematopoietic necrosis*	***	***	***		
3. *Oncorhynchus masou* virus disease*					
4. Viral haemorrhagic septicaemia*	***	***	***		
5. Infectious pancreatic necrosis	***	***	***		
6. Viral encephalopathy and retinopathy	***	***	***		
7. Epizootic ulcerative syndrome (EUS)	***	***	***		
8. Bacterial kidney disease	***	***	***		
9. Red sea bream iridoviral disease	***	***	***		
Mollusc diseases					
1. Bonamiosis (*B. exitiosus*., *B. ostreae , M.*					
2. Marteiliosis (*Marteilia refringens, M. sydneyi*)*					
3. Mikrocytosis (*Mikrocytos mackini*)*					
4. Perkinsosis (*Perkinsus marinus, P.*					
5. MSX disease (*Haplosporidium. nelsoni*)*					
Crustacean diseases					
1. Yellowhead disease (YH virus; gill-associated	***	***	***		
2. White spot disease*	+()	+()	***	III	1
3. Taura syndrome*	***	***	***		
4. Infectious hypodermal and haematopoietic	***	***	***		
5. Spawner-isolated mortality virus disease	***	***	***		
Diseases presumed exotic to the region, but reportable to the					
Finfish disease					
1. Spring viraemia of carp*	***	***	***		
Any other diseases of importance [b/]					
Unknown diseases of serious nature					
1. Koi mass mortality					
2. Akoya oyster disease					

b/ In particular, these include the following diseases:
Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Epitheliocystis; Gyrodactylosis (*Gyrodactylus salaris*); Enteric septicaemia of catfish; White sturgeon iridoviral disease; Grouper iridoviral disease
Mollusc: Withering syndrome of abalones (*Candidatus* Xenohaliotis californiensis); SSO disease (*Haplosporidium costale*); Marteilioides infection (*Marteilioides chungmuensis*)
Crustacean: Tetrahedral baculovirosis (*Baculovirus penaei*); Crayfish plague (*Aphanomyces astaci*); Necrotising hepatopancreatitis; Baculoviral midgut gland necrosis

c/ Although *Perkinsus olseni* and *P. altanticus* are now considered conspecific, they may have different host species in different regions, and countries are encouraged to provide epidemiological comments where either of these agents occurs.

* OIE notifiable diseases

[a] Please use the following symbols:

+ Disease reported or known to be present
+? Serological evidence and/or isolation of causative agent but no clinical diseases
? Suspected by reporting officer but presence not confirmed
+() Occurrence limited to certain zones
*** No information available
0000 Never reported
- Not reported (but disease is known to occur
(year) year of last occurrence

1. Epidemiological comments:

Comment No.	
1	Samples of *P.monodon* taken from farms and hatcheries showed positive results when tested with nested PCR amplification for WSSV disease. Intensity of occurrence was low and limited to few locations

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

Country: **Nepal** Period: January-March 2003

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
	Month				
Diseases prevalent in some parts of the region	January	February	March		
Finfish diseases					
1. Epizootic haematopoietic necrosis*	***	***	***		
2. Infectious haematopoietic necrosis*	***	***	***		
3. *Oncorhynchus masou* virus disease*	***	***	***		
4. Viral haemorrhagic septicaemia*	***	***	***		
5. Infectious pancreatic necrosis	***	***	***		
6. Viral encephalopathy and retinopathy	***	***	***		
7. Epizootic ulcerative syndrome (EUS)	+	+	+	I	1,2,3,4,5,6
8. Bacterial kidney disease	***	***	***		
9. Red sea bream iridoviral disease	***	***	***		
Mollusc diseases					
1. Bonamiosis (*B. exitiosus*., *B. ostreae , M. roughleyi*)*	***	***	***		
2. Marteiliosis (*Marteilia refringens, M. sydneyi*)*	***	***	***		
3. Mikrocytosis (*Mikrocytos mackini*)*	***	***	***		
4. Perkinsosis (*Perkinsus marinus, P.*	***	***	***		
5. MSX disease (*Haplosporidium. nelsoni*)*	***	***	***		
Crustacean diseases					
1. Yellowhead disease (YH virus; gill-associated virus)*	***	***	***		
2. White spot disease*	***	***	***		
3. Taura syndrome*	***	***	***		
4. Infectious hypodermal and haematopoietic necrosis	***	***	***		
5. Spawner-isolated mortality virus disease	***	***	***		
Diseases presumed exotic to the region, but reportable to the OIE					
Finfish disease					
1. Spring viraemia of carp*	***	***	***		
Any other diseases of importance [b/]					
Unknown diseases of serious nature					
1. Koi mass mortality	***	***	***		
2. Akoya oyster disease	***	***	***		

b/ In particular, these include the following diseases:

Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Epitheliocystis; Gyrodactylosis (*Gyrodactylus salaris*); Enteric septicaemia of catfish; White sturgeon iridoviral disease; Grouper iridoviral disease

Mollusc: Withering syndrome of abalones (*Candidatus* Xenohaliotis californiensis); SSO disease (*Haplosporidium costale*); Marteilioides infection (*Marteilioides chungmuensis*)

Crustacean: Tetrahedral baculovirosis (*Baculovirus penaei*); Crayfish plague (*Aphanomyces astaci*); Necrotising hepatopancreatitis; Baculoviral midgut gland necrosis

c/ Although *Perkinsus olseni* and *P. altanticus* are now considered conspecific, they may have different host species in different regions, and countries are encouraged to provide epidemiological comments where either of these agents occurs.

* OIE notifiable diseases

[a] Please use the following symbols:

+ Disease reported or known to be present

+? Serological evidence and/or isolation of causative agent but no clinical diseases

? Suspected by reporting officer but presence not confirmed

+() Occurrence limited to certain zones

*** No information available

0000 Never reported

- Not reported (but disease is known to occur

(year) year of last occurrence

1. Epidemiological comments:

Comment No.	
1	EUS cases were mostly reported from fish ponds of Terai plain areas of the country
2	Most cases of EUS were found to occur in ponds with high density of fish seed stocking and poor pond management
3	Most EUS affected fish ponds treated with lime for prevention
4	The fish loss due to EUS infestation was reported to be not significant
5	Gross clinical observation-the affected fish showed slow surface swimming and isolated behavior. Lesions and wounds seen on the abdomen and near the caudal fins of the affected fish
6	During this period EUS affected fish species were *Labeo rohita* (Rohu), *Cirrhina mrigala* (Naini), *Puntius* and *Clarias* spp.

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

Country: **Pakistan** Period: January-March 2003

Item	Disease status [a/] Month			Level of diagnosis	Epidemiological comment numbers
Diseases prevalent in some parts of the region	January	February	March		
Finfish diseases					
1. Epizootic haematopoietic necrosis*	***	***	***		
2. Infectious haematopoietic necrosis*	***	***	***		
3. *Oncorhynchus masou* virus disease*	***	***	***		
4. Viral haemorrhagic septicaemia*	***	***	***		
5. Infectious pancreatic necrosis	***	***	***		
6. Viral encephalopathy and retinopathy	***	***	***		
7. Epizootic ulcerative syndrome (EUS)	***	***	***		
8. Bacterial kidney disease	***	***	***		
9. Red sea bream iridoviral disease	***	***	***		
Mollusc diseases					
1. Bonamiosis (*B. exitiosus*., *B. ostreae , M. roughleyi*)*	***	***	***		
2. Marteiliosis (*Marteilia refringens, M. sydneyi*)*	***	***	***		
3. Mikrocytosis (*Mikrocytos mackini*)*	***	***	***		
4. Perkinsosis (*Perkinsus marinus, P.*	***	***	***		
5. MSX disease (*Haplosporidium. nelsoni*)*	***	***	***		
Crustacean diseases					
1. Yellowhead disease (YH virus; gill-associated virus)*	***	***	***		
2. White spot disease*	***	***	***		
3. Taura syndrome*	***	***	***		
4. Infectious hypodermal and haematopoietic necrosis	***	***	***		
5. Spawner-isolated mortality virus disease	***	***	***		
Diseases presumed exotic to the region, but reportable to the OIE					
Finfish disease					
1. Spring viraemia of carp*	***	***	***		
Any other diseases of importance [b/]					
Lernaeasis		+	+		1
Red spot disease		+			2
Unknown diseases of serious nature					
1. Koi mass mortality					
2. Akoya oyster disease					

b/ In particular, these include the following diseases:
Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Epitheliocystis; Gyrodactylosis (*Gyrodactylus salaris*); Enteric septicaemia of catfish; White sturgeon iridoviral disease; Grouper iridoviral disease
Mollusc: Withering syndrome of abalones (*Candidatus* Xenohaliotis californiensis); SSO disease (*Haplosporidium costale*); Marteilioides infection (*Marteilioides chungmuensis*)
Crustacean: Tetrahedral baculovirosis (*Baculovirus penaei*); Crayfish plague (*Aphanomyces astaci*); Necrotising hepatopancreatitis; Baculoviral midgut gland necrosis
c/ Although *Perkinsus olseni* and *P. altanticus* are now considered conspecific, they may have different host species in different regions, and countries are encouraged to provide epidemiological comments where either of these agents occurs.

* OIE notifiable diseases
[a] Please use the following symbols:
\+ Disease reported or known to be present
+? Serological evidence and/or isolation of causative agent but no clinical diseases
? Suspected by reporting officer but presence not confirmed
+() Occurrence limited to certain zones
*** No information available
0000 Never reported
\- Not reported (but disease is known to occur
(year) year of last occurrence

1. Epidemiological comments:

Comment No.	
1	Three cases of Lernaeasis were reported from private fish farms (infected area 13.5 acres). Dipterex @ 0.2 ppm was suggested to be used in their ponds
2	One case of red spot disease was reported from a private fish farm (infected area 5.0 acres). Oxytetracycline @100gm/4 kg fish feed for 10 days was suggested to be used to treat the fish

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

Country: **Philippines** Period: January-March 2003

Item	Disease status [a/] Month			Level of diagnosis	Epidemiological comment numbers
Diseases prevalent in some parts of the region	January	February	March		
Finfish diseases					
1. Epizootic haematopoietic necrosis*	***	***	***		
2. Infectious haematopoietic necrosis*	***	***	***		
3. *Oncorhynchus masou* virus disease*	***	***	***		
4. Viral haemorrhagic septicaemia*	***	***	***		
5. Infectious pancreatic necrosis	***	***	***		
6. Viral encephalopathy and retinopathy	-	-	+	III	1
7. Epizootic ulcerative syndrome (EUS)	-	-	-		2
8. Bacterial kidney disease	***	***	***		
9. Red sea bream iridoviral disease					
Mollusc diseases					
1. Bonamiosis (*B. exitiosus*., *B. ostreae , M. roughleyi*)*	***	***	***		
2. Marteiliosis (*Marteilia refringens, M. sydneyi*)*	***	***	***		
3. Mikrocytosis (*Mikrocytos mackini*)*	***	***	***		
4. Perkinsosis (*Perkinsus marinus, P.*	***	***	***		
5. MSX disease (*Haplosporidium. nelsoni*)*	***	***	***		
Crustacean diseases					
1. Yellowhead disease (YH virus; gill-associated virus)*	***	***	***		
2. White spot disease*	+	+	+	III	3
3. Taura syndrome*	***	***	***		
4. Infectious hypodermal and haematopoietic necrosis	***	***	***		
5. Spawner-isolated mortality virus disease	***	***	***		
Diseases presumed exotic to the region, but reportable to the OIE					
Finfish disease					
1. Spring viraemia of carp*	***	***	***		
Any other diseases of importance [b/]					
Unknown diseases of serious nature					
1. Koi mass mortality	0000	0000	0000		
2. Akoya oyster disease	***	***	***		

b/ In particular, these include the following diseases:

Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Epitheliocystis; Gyrodactylosis (*Gyrodactylus salaris*); Enteric septicaemia of catfish; White sturgeon iridoviral disease; Grouper iridoviral disease

Mollusc: Withering syndrome of abalones (*Candidatus* Xenohaliotis californiensis); SSO disease (*Haplosporidium costale*); Marteilioides infection (*Marteilioides chungmuensis*)

Crustacean: Tetrahedral baculovirosis (*Baculovirus penaei*); Crayfish plague (*Aphanomyces astaci*); Necrotising hepatopancreatitis; Baculoviral midgut gland necrosis

c/ Although *Perkinsus olseni* and *P. altanticus* are now considered conspecific, they may have different host species in different regions, and countries are encouraged to provide epidemiological comments where either of these agents occurs.

* OIE notifiable diseases

[a] Please use the following symbols:

\+ Disease reported or known to be present

+? Serological evidence and/or isolation of causative agent but no clinical diseases

? Suspected by reporting officer but presence not confirmed

+() Occurrence limited to certain zones

*** No information available

0000 Never reported

\- Not reported (but disease is known to occur

(year) year of last occurrence

1. Epidemiological comments:

Comment No.	
1	Tilapia fry (freshwater) from Negros Occidental and Iloilo and grouper (*Epinephelus coioides*) fry from Negros Occidental examined in March 2003 produced positive results for VER by RT-PCR. (Examination conducted by SEAFDEC-AQD Fish Health Laboratory.)
2	Reported last October 2002 in *Clarias gariepinus* from grow-out pond in Sta. Barbara, Iloilo. (laboratory examination through histopathology showed mycotic granuloma) Examination conducted by the SEAFDEC-AQD Fish Health Lab. No reported case (passive) from January to March 2003
3	January 2003- - *P. monodon* post larvae (7 batches) from Zamboanga, juvenile stage from (9) grow-out ponds from Batangas and Bulacan provinces produced negative results for WSV using PCR technique. -*P. monodon* from grow-out pond (Iloilo) and broodstock from Negros Occidental and Iloilo produced positive results for WSV using PCR February 2003- -*P. monodon* post larvae (9 batches) from hatcheries in Leyte, Batangas, Cavite and Bohol, juveniles from grow-out ponds in Lanao del Norte (36), Camarines Sur (1), Leyte (1), Masbate (1) and wild shrimp and crab in Leyte produced negative results using PCR technique -*P. monodon* post larvae (Quezon province) and juvenile (Lanao del Norte) produced positive results using PCR Technique. Also *P. monodon* samples from six grow-out ponds (harvestable size) in Masbate that experienced massive mortalities produced positive results (crabs taken from this area also produced positive results). March 2003- -*P. monodon* post larvae (14 batches) from hatcheries in Bohol and Cebu produced negative results. *P. monodon* samples from 32 grow-out ponds in Pampanga, Batangas and Pangasinan and spent spawners (6) from Cebu also produced negative results -*P. monodon* (23 samples) at different stages (nauplii, post larva, juvenile, broodstock and spent spawner) from Quezon, Iloilo, Negros Occidental, Bohol, Samar produced positive results

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

Fisheries Administrative Order (FAO) No. 221 Series of 2003 – *Further regulating the importation of live fish and fishery/aquatic products under FAO No. 135 s. 1981 to include microorganisms and biomolecules*. Approved by the Secretary of the Department of Agriculture on 06 March 2003 upon the recommendation of the Undersecretary for Fisheries and Director of the Bureau of Fisheries and Aquatic Resources after several reviews and public consultations.

Salient Features of the FAO 221

The Order does not only cover live fish but also fishery products, microorganisms and biomolecules. Fish and fishery products include not only finfish but also molluscs, crustaceans, echinoderms, marine mammals and other products of aquatic resources in any form. The Import Risk Analysis in this Order focuses on fish health concerns as well as on public health and ecological concerns.

Fish species for importation will be categorized based on risk – 1) low risk species, 2) medium risk species, 3) high risk species, 4) prohibited or banned species. Low risk species include certain aquarium fishes perceived to present no or low ecological, genetic and disease threats to native Philippine species and to aquaculture. Medium risk species are those used in aquaculture or ornamental fish trade and considered by BFAR to pose potential environmental impact. This may include both native or transferred species and previously introduced species in natural bodies of water. High risk species include exotic species that may pose adverse environmental impact. Genetically modified organisms may also be included in this category.

Prohibited or banned species include exotic species with known adverse effect on local fauna, human health and environment Upon categorization of the fishes proposed for importation, the corresponding inspection, certification and quarantine requirements will be imposed.

Country: **Republic of Korea** Period: January-March 2003

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
	Month				
Diseases prevalent in some parts of the region	January	February	March		
Finfish diseases					
1. Epizootic haematopoietic necrosis*	0000	0000	0000		
2. Infectious haematopoietic necrosis*	-	-	-	III	
3. *Oncorhynchus masou* virus disease*	0000	0000	0000		
4. Viral haemorrhagic septicaemia*	+	+	+	III	1
5. Infectious pancreatic necrosis	+	+	+	III	2
6. Viral encephalopathy and retinopathy	-	-	-	III	
7. Epizootic ulcerative syndrome (EUS)	0000	0000	0000		
8. Bacterial kidney disease	0000	0000	0000		
9. Red sea bream iridoviral disease	-	-	-	III	
Mollusc diseases					
1. Bonamiosis (*B. exitiosus*., *B. ostreae , M. roughleyi*)*	0000	0000	0000		
2. Marteiliosis (*Marteilia refringens, M. sydneyi*)*	0000	0000	0000		
3. Mikrocytosis (*Mikrocytos mackini*)*	0000	0000	0000		
4. Perkinsosis (*Perkinsus marinus, P.*	+	+	+	III	3
5. MSX disease (*Haplosporidium. nelsoni*)*	0000	0000	0000		
Crustacean diseases					
1. Yellowhead disease (YH virus; gill-associated virus)*	0000	0000	0000		
2. White spot disease*	-	-	-		
3. Taura syndrome*	-	-	-		
4. Infectious hypodermal and haematopoietic necrosis	0000	0000	0000		
5. Spawner-isolated mortality virus disease	0000	0000	0000		
Diseases presumed exotic to the region, but reportable to the OIE					
Finfish disease					
1. Spring viraemia of carp*	?	?	?		
Any other diseases of importance [b/]					
Marteilioides infection (*Marteilioides chungmuensis*)	+	+	+	III	4
Unknown diseases of serious nature					
1. Koi mass mortality	-	-	-		
2. Akoya oyster disease	0000	0000	0000		

b/ In particular, these include the following diseases:
Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Epitheliocystis; Gyrodactylosis (*Gyrodactylus salaris*); Enteric septicaemia of catfish; White sturgeon iridoviral disease; Grouper iridoviral disease
Mollusc: Withering syndrome of abalones (*Candidatus* Xenohaliotis californiensis); SSO disease (*Haplosporidium costale*); Marteilioides infection (*Marteilioides chungmuensis*)
Crustacean: Tetrahedral baculovirosis (*Baculovirus penaei*); Crayfish plague (*Aphanomyces astaci*); Necrotising hepatopancreatitis; Baculoviral midgut gland necrosis
c/ Although *Perkinsus olseni* and *P. altanticus* are now considered conspecific, they may have different host species in different regions, and countries are encouraged to provide epidemiological comments where either of these agents occurs.

* OIE notifiable diseases
[a] Please use the following symbols:
+ Disease reported or known to be present
+? Serological evidence and/or isolation of causative agent but no clinical diseases
? Suspected by reporting officer but presence not confirmed
+() Occurrence limited to certain zones
*** No information available
0000 Never reported
- Not reported (but disease is known to occur
(year) year of last occurrence

1. Epidemiological comments:

Comment No.	
1	VHS virus was detected from cultured flounder, *Paralichthys olivaceus* by PCR. Remarkable symptom was ascites. Fish from three hatcheries were positive by PCR. Fish from outbreaks were about 10㎝.
2	During survey of IPNV and IHNV from rainbow trout culture farm, fish from 1 culture farm among three hatcheries were detected IPN virus by cell culture and PCR. The mortality of diseased rainbow trout was about 30 percent.
3	Perkinsus atlanticus was observed from manila clam *Ruditapes philippinarum* during disease monitoring on western coast. No mortality was observed.
4	*Marteilioides chungmuensis* was observed from cultured Pacific oyster during disease monitoring on southern coast. Infection rate was no more than 10% during this period. No mortality was observed.

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

Country: **Singapore** Period: January-March 2003

Item	Disease status [a/] Month			Level of diagnosis	Epidemiological comment numbers
Diseases prevalent in some parts of the region	January	February	March		
Finfish diseases					
1. Epizootic haematopoietic necrosis*	0000	0000	0000		
2. Infectious haematopoietic necrosis*	0000	0000	0000		
3. *Oncorhynchus masou* virus disease*	0000	0000	0000		
4. Viral haemorrhagic septicaemia*	0000	0000	0000		
5. Infectious pancreatic necrosis	0000	0000	0000		
6. Viral encephalopathy and retinopathy	+	+	0000	III	1
7. Epizootic ulcerative syndrome (EUS)	0000	0000	0000		
8. Bacterial kidney disease	0000	0000	0000		
9. Red sea bream iridoviral disease	0000	0000	0000		
Mollusc diseases					
1. Bonamiosis (*B. exitiosus*., *B. ostreae , M. roughleyi*)*	***	***	***		
2. Marteiliosis (*Marteilia refringens, M. sydneyi*)*	***	***	***		
3. Mikrocytosis (*Mikrocytos mackini*)*	***	***	***		
4. Perkinsosis (*Perkinsus marinus, P.*	***	***	***		
5. MSX disease (*Haplosporidium. nelsoni*)*	***	***	***		
Crustacean diseases					
1. Yellowhead disease (YH virus; gill-associated virus)*	***	***	***		
2. White spot disease*	-	-	-		
3. Taura syndrome*	***	***	***		
4. Infectious hypodermal and haematopoietic necrosis	***	***	***		
5. Spawner-isolated mortality virus disease	***	***	***		
Diseases presumed exotic to the region, but reportable to the OIE					
Finfish disease					
1. Spring viraemia of carp*	0000	0000	0000		
Any other diseases of importance [b/]					
Unknown diseases of serious nature					
1. Koi mass mortality	0000	0000	0000		
2. Akoya oyster disease	***	***	***		

b/ In particular, these include the following diseases:
Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Epitheliocystis; Gyrodactylosis (*Gyrodactylus salaris*); Enteric septicaemia of catfish; White sturgeon iridoviral disease; Grouper iridoviral disease
Mollusc: Withering syndrome of abalones (*Candidatus* Xenohaliotis californiensis); SSO disease (*Haplosporidium costale*); Marteilioides infection (*Marteilioides chungmuensis*)
Crustacean: Tetrahedral baculovirosis (*Baculovirus penaei*); Crayfish plague (*Aphanomyces astaci*); Necrotising hepatopancreatitis; Baculoviral midgut gland necrosis

c/ Although *Perkinsus olseni* and *P. altanticus* are now considered conspecific, they may have different host species in different regions, and countries are encouraged to provide epidemiological comments where either of these agents occurs.

* OIE notifiable diseases

[a] Please use the following symbols:

+ Disease reported or known to be present
+? Serological evidence and/or isolation of causative agent but no clinical diseases
? Suspected by reporting officer but presence not confirmed
+() Occurrence limited to certain zones
*** No information available
0000 Never reported
- Not reported (but disease is known to occur
(year) year of last occurrence

1. Epidemiological comments:

Comment No.	
1	Viral encephalopathy and retinopathy was diagnosed in two batches of 7-9g tiger grouper (*Epinephelus fuscoguttatus*) fingerlings imported from Indonesia for grow out in one farm. Samples were tested positive as VER by histology, tissue culture and RT-PCR using primers specific for striped jack nodavirus. Affected fish suffered 80% mortality

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

Country: **Sri Lanka** Period: January-March 2003

Item	Disease status [a/] Month			Level of diagnosis	Epidemiological comment numbers
Diseases prevalent in some parts of the region	January	February	March		
Finfish diseases					
1. Epizootic haematopoietic necrosis*	0000	0000	0000		
2. Infectious haematopoietic necrosis*	0000	0000	0000		
3. *Oncorhynchus masou* virus disease*	0000	0000	0000		
4. Viral haemorrhagic septicaemia*	0000	0000	0000		
5. Infectious pancreatic necrosis	0000	0000	0000		
6. Viral encephalopathy and retinopathy	0000	0000	0000		
7. Epizootic ulcerative syndrome (EUS)	?	?	?	I	1
8. Bacterial kidney disease	0000	0000	0000		
9. Red sea bream iridoviral disease	0000	0000	0000		
Mollusc diseases					
1. Bonamiosis (*B. exitiosus*., *B. ostreae , M. roughleyi*)*	0000	0000	0000		
2. Marteiliosis (*Marteilia refringens, M. sydneyi*)*	0000	0000	0000		
3. Mikrocytosis (*Mikrocytos mackini*)*	0000	0000	0000		
4. Perkinsosis (*Perkinsus marinus, P.*	0000	0000	0000		
5. MSX disease (*Haplosporidium. nelsoni*)*	0000	0000	0000		
Crustacean diseases					
1. Yellowhead disease (YH virus; gill-associated virus)*	? 1988	? 1988	? 1988	I	2
2. White spot disease*	+	+	+	III	3
3. Taura syndrome*	0000	0000	0000		
4. Infectious hypodermal and haematopoietic necrosis	0000	0000	0000		
5. Spawner-isolated mortality virus disease	0000	0000	0000		
Diseases presumed exotic to the region, but reportable to the OIE					
Finfish disease					
1. Spring viraemia of carp*	0000	0000	0000		
Any other diseases of importance [b/]					
Unknown diseases of serious nature					
1. Koi mass mortality	0000	0000	0000		
2. Akoya oyster disease	0000	0000	0000		

b/ In particular, these include the following diseases:
Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Epitheliocystis; Gyrodactylosis (*Gyrodactylus salaris*); Enteric septicaemia of catfish; White sturgeon iridoviral disease; Grouper iridoviral disease
Mollusc: Withering syndrome of abalones (*Candidatus* Xenohaliotis californiensis); SSO disease (*Haplosporidium costale*); Marteilioides infection (*Marteilioides chungmuensis*)
Crustacean: Tetrahedral baculovirosis (*Baculovirus penaei*); Crayfish plague (*Aphanomyces astaci*); Necrotising hepatopancreatitis; Baculoviral midgut gland necrosis

c/ Although *Perkinsus olseni* and *P. altanticus* are now considered conspecific, they may have different host species in different regions, and countries are encouraged to provide epidemiological comments where either of these agents occurs.

* OIE notifiable diseases

[a] Please use the following symbols:

+ Disease reported or known to be present
+? Serological evidence and/or isolation of causative agent but no clinical diseases
? Suspected by reporting officer but presence not confirmed
+() Occurrence limited to certain zones
*** No information available
0000 Never reported
- Not reported (but disease is known to occur
(year) year of last occurrence

1. Epidemiological comments:

Comment No.	
1	Clear visual signs were not reported
2	No symptoms were observed
3	Low percentage of *Peneaus monodon* post larvae samples showed positive results fro WSSV using PCR technique. High mortalities occurred in *P.monodon* (different ages) grow out ponds in certain areas of the North Western Province. The shrimp samples obtained from these ponds showed positive results for WSSV using PCR technique. Intensity of the disease occurrence was higher than in the previous two quarters

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

Country: **Thailand** : Period: January-March 2003

Item	Disease status [a/] Month			Level of diagnosis	Epidemiological comment numbers
Diseases prevalent in some parts of the region	January	February	March		
Finfish diseases					
1. Epizootic haematopoietic necrosis*	0000	0000	0000	III	
2. Infectious haematopoietic necrosis*	0000	0000	0000	III	
3. *Oncorhynchus masou* virus disease*	0000	0000	0000	III	
4. Viral haemorrhagic septicaemia*	0000	0000	0000	III	
5. Infectious pancreatic necrosis	(1985)	(1985)	(1985)	III	
6. Viral encephalopathy and retinopathy	-	-	-	III	
7. Epizootic ulcerative syndrome (EUS)	+	-	-	II	1
8. Bacterial kidney disease	0000	0000	0000	II	
9. Red sea bream iridoviral disease	0000	0000	0000	III	
Mollusc diseases					
1. Bonamiosis (*B. exitiosus*., *B. ostreae , M. roughleyi*)*	***	***	***		
2. Marteiliosis (*Marteilia refringens, M. sydneyi*)*	***	***	***		2
3. Mikrocytosis (*Mikrocytos mackini*)*	***	***	***		
4. Perkinsosis (*Perkinsus marinus, P.*	***	***	***		
5. MSX disease (*Haplosporidium. nelsoni*)*	***	***	***		
Crustacean diseases					
1. Yellowhead disease (YH virus; gill-associated virus)*	?	?	?	I	
2. White spot disease*	+	+	+	III	3
3. Taura syndrome*	0000	0000	0000	III	4
4. Infectious hypodermal and haematopoietic necrosis	***	***	***		
5. Spawner-isolated mortality virus disease	***	***	***		
Diseases presumed exotic to the region, but reportable to the OIE					
Finfish disease					
1. Spring viraemia of carp*	0000	0000	0000	III	
Any other diseases of importance [b/]					
Unknown diseases of serious nature					
1. Koi mass mortality	0000	0000	0000	III	5
2. Akoya oyster disease	***	***	***		

b/ In particular, these include the following diseases:
Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Epitheliocystis; Gyrodactylosis (*Gyrodactylus salaris*); Enteric septicaemia of catfish; White sturgeon iridoviral disease; Grouper iridoviral disease
Mollusc: Withering syndrome of abalones (*Candidatus* Xenohaliotis californiensis); SSO disease (*Haplosporidium costale*); Marteilioides infection (*Marteilioides chungmuensis*)
Crustacean: Tetrahedral baculovirosis (*Baculovirus penaei*); Crayfish plague (*Aphanomyces astaci*); Necrotising hepatopancreatitis; Baculoviral midgut gland necrosis

c/ Although *Perkinsus olseni* and *P. altanticus* are now considered conspecific, they may have different host species in different regions, and countries are encouraged to provide epidemiological comments where either of these agents occurs.

* OIE notifiable diseases

[a] Please use the following symbols:

+ Disease reported or known to be present
+? Serological evidence and/or isolation of causative agent but no clinical diseases
? Suspected by reporting officer but presence not confirmed
+() Occurrence limited to certain zones
*** No information available
0000 Never reported
- Not reported (but disease is known to occur
(year) year of last occurrence

1. Epidemiological comments:

Comment No.	
1	There was one confirmed EUS case found in Kampangpetch Inland Fishery Station, North of Thailand. The affected fish was red-cheek barb, *Puntius orphoides*, (4-6 inches total length) which raised in an earthen pond. There were 500 fish in the pond and most of them (>95%) showed EUS clinical signs and died. The pathogen was most likely get into the Station through flooding water during the last rainy season. The fishpond was later dried and disinfected using agricultural lime.
2	A total of 6,244 prawn samples cultured in 29 provinces had been sent to 11 PCR Laboratories of the Department of Fisheries. Most of the prawn samples were post-larvae stage, which were PCR-tested before stocking in culture ponds. 121 samples or 1.96% were recorded as PCR positive or carrying SEMBV gene.
3	There was a doubtful case of Marteilia-like infection in rock oyster, *Saccostrea forskali*, that cultured in Chonburi province, East Coast of Thailand. 29 oyster samples had been collected during a survey research in 1999 of the Department of Fisheries. The Marteilia-like organism was suspected in epithelial cells of stomach of the healthy oysters. However there was no report of any mass mortalities at that time. These specimens were sent to the OIE expert for confirmation. Results will be recorded later.
4	Pacific white shrimp, *Penaeus vannamei,* brooders were sampled at the Aquatic Animal Quarantine, Bangkok Airport, and RT-PCR-tested for Taura syndrome virus (TSV) using a commercial kit. The RT-PCR results were negative. All brooders have been stocked in the registered hatcheries for further quarantine. Theirs seeds will be tested again for TSV-free before transfer in to grow-out ponds. 97,752 shrimp brooders had been imported in to the country during March 2002 – February 2003.
5	Koi herpesvirus has been included in the diseases monitoring program in the ornamental fish exporting farms since August 2002. There was no evidence of KHV in the exporting fish farms using PCR screening test.

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

Country: **Vietnam** Period: January-March 2003

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
	Month				
Diseases prevalent in some parts of the region	January	February	March		
Finfish diseases					
1. Epizootic haematopoietic necrosis*	0000	0000	0000		
2. Infectious haematopoietic necrosis*	0000	0000	0000		
3. *Oncorhynchus masou* virus disease*	0000	0000	0000		
4. Viral haemorrhagic septicaemia*	0000	0000	0000		
5. Infectious pancreatic necrosis	***	***	***		
6. Viral encephalopathy and retinopathy	-	-	-		1
7. Epizootic ulcerative syndrome (EUS)	-	-	-		2
8. Bacterial kidney disease	0000	0000	0000		
9. Red sea bream iridoviral disease	0000	0000	0000		
Mollusc diseases					
1. Bonamiosis (*B. exitiosus*., *B. ostreae , M. roughleyi*)*	0000	0000	0000		
2. Marteiliosis (*Marteilia refringens, M. sydneyi*)*	0000	0000	0000		
3. Mikrocytosis (*Mikrocytos mackini*)*	0000	0000	0000		
4. Perkinsosis (*Perkinsus marinus, P.*	0000	0000	0000		
5. MSX disease (*Haplosporidium. nelsoni*)*	0000	0000	0000		
Crustacean diseases					
1. Yellowhead disease (YH virus; gill-associated virus)*	-	-	-		3
2. White spot disease*	+	+	+	III	4
3. Taura syndrome*	0000	0000	0000		
4. Infectious hypodermal and haematopoietic necrosis	0000	0000	0000		
5. Spawner-isolated mortality virus disease	0000	0000	0000		
Diseases presumed exotic to the region, but reportable to the OIE					
Finfish disease					
1. Spring viraemia of carp*	0000	0000	0000		
Any other diseases of importance [b/]					
Monodon Baculovirus Disease (MBV)	+	+	+	II	5
Unknown diseases of serious nature					
1. Koi mass mortality	0000	0000	0000		
2. Akoya oyster disease	0000	0000	0000		

b/ In particular, these include the following diseases:
Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Epitheliocystis; Gyrodactylosis (*Gyrodactylus salaris*); Enteric septicaemia of catfish; White sturgeon iridoviral disease; Grouper iridoviral disease
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c/ Although *Perkinsus olseni* and *P. altanticus* are now considered conspecific, they may have different host species in different regions, and countries are encouraged to provide epidemiological comments where either of these agents occurs.

* OIE notifiable diseases

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? Suspected by reporting officer but presence not confirmed
+() Occurrence limited to certain zones
*** No information available
0000 Never reported
- Not reported (but disease is known to occur
(year) year of last occurrence

1. Epidemiological comments:

Comment No.	
1	Not reported during this period
2	Not reported during this period
3	Not reported during this period
4	White spot disease in shrimp occurred in Southern Vietnam during this period. However, it is not widely spread. In Northern Vietnam only one batch of shrimp fry affected among 55 batches PCR tested at RIA1
5	MBV was highly present in shrimp fry in the whole of Vietnam

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

Related Publications

Asia Diagnostic Guide to Aquatic Animal Diseases. 2001. Bondad-Reantaso, M.G., McGladdery, S.E., East, I. and Subasinghe, R.P. (eds). FAO Fisheries Technical Paper No. 402, Suppl. 2. Rome, FAO. 2001. 236 pp.

Manual of Procedures for the Implementation of the Asia Regional Technical Guidelines on Health Management for the Responsible Movement of Live Aquatic Animals. 2001. FAO/NACA. Fisheries Technical Paper, No. 402, Suppl. 1. FAO, Rome. 103 p.

DNA-based Molecular Diagnostic Techniques: Research Needs for Standardisation and Validation of the Detection of Aquatic Animal Pathogens and Diseases. 2000. (eds. P. Walker and R.P. Subasinghe). FAO Fisheries Technical Paper 395. Report and Proceedings of the Expert Workshop on DNA-based Molecular Diagnostic Techniques: Research Needs for Standardisation and Validation of the Detection of Aquatic Animal Pathogens and Diseases, Bangkok, Thailand, 7-9 February 1999.

Information from:
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APEC/AAHRI/FHS-AFS/NACA. 2001. Report and proceedings of APEC FWG 02/2000 "Development of a Regional Research Programme on Grouper Virus Transmission and Vaccine Development". M.G. Bondad-Reantaso, J. Humphrey, S. Kanchanakhan and S. Chinabut (eds).

Diagnostic Procedures for Finfish Diseases (by Kamonporn Tonguthai, Supranee Chinabut, Temdoung Somsiri, Pornlerd Chanratchakool, Somkiat Kanchanakhan)

Epizootic Ulcerative Syndrome (EUS) Handbooks. Two new EUS handbooks are available free of charge: (1*) Pathology and Histopathology of EUS* by S. Chinabut and R.J. Roberts; and **(2) *EUS Technical Handbook*** by J.H. Lilley, R.B. Callinan, S. Chinabut, S. Kanchanakhan, I.H. MacRae and M.J. Phillips.

Health Management in Shrimp Ponds. Third Edition (by P. Chanratchakool, JF Turnbull, S.J. Funge-Smith, I.H. MacRae and C Limsuwan).

Information from:
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Thailand's Department of Fisheries, Kasetsart University Campus, Jatujak, Bangkok 10900
E-mail: aahri@fisheries.go.th

APEC/FAO/NACA/SEMARNAP. 2001. Trans-Boundary aquatic animal pathogen transfer and the development of harmonised standards on aquaculture health management. Report of the Joint APEC/FAO/NACA/SEMARNAP Workshop, Puerto Vallarta, Jalisco, Mexico, 24-28 July 2000. Network of Aquaculture Centres in Asia-Pacific, Bangkok, Thailand. 197 pp.

Primary Aquatic Animal Health Care in Rural, Small-Scale, Aquaculture Development: Report of an Asia Regional Scoping Workshop held in Dhaka, Bangladesh, 27th-30th September 1999. Department for International Development, Food and Agriculture Organization of the United Nations and the Network of Aquaculture Centres in Asia-Pacific. 36 pp.

CD-ROM on Diagnosis of Shrimp Diseases (by V. Alday de Graindorge and T.W. Flegel) This CD-Rom provides detailed information on the diagnosis of shrimp disease, with emphasis on *Peneaus monodon***.**

Information from:
NACA Secretariat
E-mail: naca@enaca.org

OIE International Aquatic Animal Health Code. Fourth edition, 2001.

OIE Diagnostic Manual for Aquatic Animal Diseases. Foruth Edition. 2001

Risk Analysis in Aquatic Animal Health. 2001. Proceedings of an International Conference held in Paris, France, 8-10 February 2000 (C.J. Rogers, ed.).
Information from:
Office International des Epizooties
12, rue de Prony, 75017 Paris, France
Tel: 33-(0)1 44 15 18 88
Fax: 33-(0) 1 42 67 09 87
E-mail: oie@oie.int
Web: http://www.oie.int

Diseases in Penaeid Shrimps in the Philippines. Second Edition (2000). C.R. Lavilla-Pitogo, G.D. Lio-Po, E.R. Cruz-Lacierda, E.V. Alapide-Tendencia and L.D. de la Pena

Use of Chemicals in Aquaculture in Asia. 2000. J.R. Arthur, C.R. Lavilla-Pitogo and R.P. Subasinghe (eds). Proceedings of the Meeting on the Use of Chemicals in Aquaculture in Asia, 20-22 May 1996, Tigbauan, Iloilo, Philippines.

Diseases of Penaeid Shrimps in the Philippines. 2000. by C.R. Lavilla-Pitogo, G.D. Lio-Po, E.R. Cruz-Lacierda, E.V. Alapide-Tendencia and L.D. de la Pena. Aquaculture Extension Manual No. 16.

Health Management in Aquaculture. 2001. G.D. Lio-Po, C.R. Lavilla, E.R. Cruz-Lacierda (eds).

Husbandry and Health Management of Grouper. 2001. APEC/SEAFDEC. APEC, Singapore and SEAFDEC, Iloilo, Philippines. 94 p.

Information from:
Training and Information Division
SEAFDEC Aquaculture Department
5021 Tigbauan, Iloilo, Philippines
Fax: (63-33) 335 1008 336 2891
E-mail: aqdchief@aqd.seafdec.org.ph

Reference PCR Protocols for Detection of White Spot Syndrome Virus (WSSV) in Shrimp. Shrimp Biotechnology Service Laboratory. Vol. 1, No. 1, March 2001

Information from:
Shrimp Biotechnology Service Laboratory
73/1 Rama 6 Rd., Rajdhewee, Bangkok 10400
Tel: (662) 644-8150
Fax: (662) 644-8107

Manual for Fish Disease Diagnosis - II: Marine Fish and Crustacean Diseases in Indonesia (2001) by Isti Koesharyani, Des Roza, Ketut Mahardika, Fris Johnny, Zafran and Kei Yuasa, edited by K. Sugama, K. Hatai, and T Nakai

Information frrom:
Gondol Research Station for Coastal Fisheries
P.O. Box 140 Singaraja, Bali, Indonesia
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AQUAPLAN Zoning Policy Guidelines

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Office of the Chief Veterinary Officer
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List of Diseases in the Asia-Pacific

Quarterly Aquatic Animal Disease Reports (Beginning 2003)

I. Diseases prevalent in some parts of the region

Finfish diseases

- Epizootic haematopoietic necrosis*
- Infectious haematopoietic necrosis*
- *Oncorhynchus masou* virus disease*
- Viral haemorrhagic septicaemia*
- Infectious pancreatic necrosis
- Viral encephalopathy and retinopathy
- Epizootic ulcerative syndrome (EUS)
- Bacterial kidney disease
- Red sea bream iridoviral disease

Mollusc diseases

- Bonamiosis (*B. exitiosus*., *B. ostreae , M. roughleyi*)*
- Marteiliosis (*Marteilia refringens, M. sydneyi*)*
- Mikrocytosis (*Mikrocytos mackini*)*
- Perkinsosis (*Perkinsus marinus, P. olseni/atlanticus*)*
- MSX disease (*Haplosporidium. nelsoni*)*

Crustacean diseases

- Yellowhead disease (YH virus; gill-associated virus)*
- White spot disease*
- Taura syndrome*
- Infectious hypodermal and haematopoietic necrosis
- Spawner-isolated mortality virus disease

II. Diseases presumed exotic to the region, but reportable to OIE

Finfish Diseases

- Spring Viraemia of carp*

III. Any other diseases of importance: In particular, these include the following diseases so far presumed, but not proven, to be exotic to this region

Finfish:

- Channel catfish virus disease
- Infectious salmon anaemia
- Piscirickettsiosis
- Epitheliocystis
- Gyrodactylosis (*Gyrodactylus salaris*)
- Enteric septicaemia of catfish
- White sturgeon iridoviral disease
- Grouper iridoviral disease

Mollusc:

- Withering syndrome of abalones (*Candidatus* Xenohaliotis californiensis)
- SSO disease (*Haplosporidium costale*)
- Marteilioides infection (*Marteilioides chungmuensis*)

Crustacean:

- Tetrahedral baculovirosis (*Baculovirus penaei*)
- Crayfish plague (*Aphanomyces astaci*)
- Necrotising hepatopancreatitis
- Baculoviral midgut gland necrosis

IV. Unknown Diseases of serious nature

- Koi mass mortality
- Akoya oyster disease

* OIE notifiable diseases

New Instructions on how to fill in the QUARTERLY AQUATIC ANIMAL DISEASE REPORT

(Revised during the Provisional Meeting of the AG[1], Bangkok, Thailand, November 7-9, 2001)

Symbols used in the report are similar to those used by FAO, OIE and WHO for the *Animal Health Yearbook*. Please read these instructions carefully before you fill in the forms.

Under the heading 'Country', please enter your country.

Under the heading 'Period', please enter the reporting quarter (months) and year, e.g. January to March 2002.

Under the heading "Month", please enter months of a quarter in question, e.g. January, February, March.

In "Level of Diagnosis", please enter the Level of Diagnosis used, e.g., I, II, or III. See Section C below.

In "Epidemiological Comment Numbers", please enter the serial numbers, and write your corresponding epidemiological comments on page 2. See Section D below for guidance on the subjects to be covered under Epidemiological Comments.

If an unknown disease of serious nature appears, please fill in the last line of the form, with additional information on "Level of Diagnosis" and "Epidemiological Comment Numbers" as above.

Please do not fail to enter "*******" or "**-**" as appropriate against each disease, which is essential to incorporate your information on the *Quarterly Aquatic Animal Disease Report (Asia and Pacific Region.)*

If you have new aquatic animal health regulations introduced within the past six months, please describe them under Section 2 on page 2.

Please use the following symbols to fill in the forms.

A. Symbols used for negative occurrence are as follows:

***	This symbol means that no information on a disease in question is available due to reasons such as lack of surveillance systems or expertise.
-	This symbol is used when a disease is not reported during a reporting period. However the disease is known to be present in the country (date of last outbreak is not always known).
0000	This symbol is used when disease surveillance is in place and a disease has never been reported.
(year)	Year of last occurrence (a disease has been absent since then).

B. Symbols used for positive occurrence are shown below.

+	This symbol means that the occurrence of a disease in question is sporadic but it is known to be present. However the occurrence is relatively rare.
+?	This symbol is used when the presence of a disease is suspected but there is no recognised occurrence of clinical signs of the disease in the country. Serological evidence and isolation of the causal agent may indicate the presence of the disease, but no confirmed report is available. **It is important that the species of animals to which it applies is indicated in the "Comments" on page 2 of the form if you use this symbol**.

[1] Regional Advisory Group on Aquatic Animal Health (AG)

+( ) These symbols mean that a disease is present in a very limited zone or zones as exceptional cases. It may also include the occurrence of a disease in a quarantine area.

? This symbol is used only when a disease is suspected by the reporting officer, but the presence of the disease has not been confirmed.

C. Levels of Diagnosis

LEVEL	SITE	ACTIVITY
I	Field	Observation of animal and the environment Clinical examination
II	Laboratory	Parasitology Bacteriology Mycology Histopathology
III	Laboratory	Virology Electron microscopy Molecular biology Immunology

D. Subjects to be covered in the Epidemiological Comments

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

IMPORTANT

Please send the **original report** or the best photocopy thereof to the OIE and/or NACA **by fax** and **registered airmail**. Faxed reports are needed to check whether or not the reports are all right. The deadline for submission of the reports is **two and a half months (75 days)** after the end of the quarterly period.

If you require further explanation, please write to the OIE (Tokyo), NACA (Bangkok) or FAO (Rome) at the following addresses, respectively:

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Notes

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