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QUARTERLY AQUATIC ANIMAL DISEASE REPORT (Asia and Pacific Region)

April-June 2003

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Suraswadi Building, Department of Fisheries
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Editorial

Globally, aquaculture is expanding to new areas, intensifying and diversifying. So is trade in aquaculture species, products and services. Trade, apart from its positive benefits to trading partners, is sometimes associated with risks that can have repercussions on the livelihoods of aquaculture farmers, associated industries and national economies. Introduction of pathogens is one such risk associated with trade and trans-boundary movement of live aquatic animals. Introduction and spread of serious aquatic animal pathogens across countries and continents are well known. The best examples include white spot and taura syndrome in farmed shrimp and epizootic ulcerative syndrome in fish. Importing and exporting countries are now increasingly becoming aware of the potential risks and are beginning to use scientific approaches to minimize such risks.

Risk analysis is increasingly being used to determine risk associated with movement of aquatic animals. The principal components of risk analysis are hazard identification, risk assessment, risk management and risk communication.

When applied to aquatic animal diseases, hazard identification involves the process of identifying pathogenic agents that may be introduced along with aquatic animal movements. Risk assessment (quantitative or qualitative), through a structured process attempts to assess the risks (unwanted outcomes) resulting from an identified hazard (pathogen).

Risk management is the process of mitigating risks to an acceptable level. Risk communication involves exchange of information between the risk assessors, risk managers, decision makers, importer and exporter. To successfully accomplish the four components of a risk analysis, good knowledge of aquatic animal diseases and skills of subject specialists (such as a risk analyst, pathologist, epidemiologist) are essential. Only through a multi-disciplinary and participatory approach can reliable risk analyses be performed. Risk analysis should be done prior to making a decision and not to support a decision already made!

Knowledge of the aquatic animal disease status of the exporting and importing countries are required for identifying hazards and making risk assessments, respectively. The QAAD reports published under the FAO/NACA/OIE joint regional disease reporting program provides information on diseases of concern to the Asia-Pacific region, globally the most important aquaculture producing region. Towards training and capacity building, NACA in collaboration with APEC, FAO, OIE and other partners, conducted two regional workshops on “Capacity and awareness building on import risk analysis for aquatic animals” in 2002. The project report containing technical presentations at the workshops will be made available for wider dissemination soon. In addition, a risk analysis manual, one of the outcomes of the collaboration, will provide valuable technical support to Asia in implementing risk analysis. The OIE publication “Risk analysis in aquatic animal health” offers valuable insight into the concept of risk analysis relevant to aquatic animal health.

Mere establishment of programs and frameworks without appropriate skill and capacity building would be of little value. In the region, some countries have good experience and expertise in conducting risk analysis, but in others awareness and capacity are still low. Asian countries should strongly consider initiating programs to build capacity and skills to undertake risk analysis, and promote cooperation to share experiences and skills. The NACA program along with its partners such as APEC, OIE and FAO, will continue to support capacity building in risk analysis, promote the transparent and scientifically based application of risk analysis in decisions concerning aquatic animal movements, and facilitate sharing of resources and skills, within the region and elsewhere, to its members.

The risk analysis exercise appears to put the onus more on the importing countries. Exporters also have a responsibility to minimize the risks of pathogen introduction with movement of live aquatic animals. Only through responsible trade, with partnership and responsibilities shared between importing and exporting countries, will the risks of serious aquatic animal pathogen introduction and spread be minimized.

Reports Received by the NACA Secretariat

Country: **Australia** Period: April-June 2003

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
	Month				
Diseases prevalent in some parts of the region	April	May	June		
Finfish diseases					
1. Epizootic haematopoietic necrosis*	-(2003)	-(2003)	-(2003)		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	-(2003)	-(2003)	-(2003)		2
7. Epizootic ulcerative syndrome (EUS)	+	+	+	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/+	II	6
5. MSX disease (*Haplosporidium. nelsoni*)*	0000	0000	0000		
Crustacean diseases					
1. Yellowhead disease (YH virus; gill-associated virus)*	0000/-(2003)	0000/+	0000/-(2003)	II	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 not reported this period despite passive surveillance but is known to have previously occurred in Victoria (last reported first quarter 2003), 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 not reported from the Northern Territory this period despite targeted active surveillance (last year reported 2002). Not reported this period despite active surveillance from Tasmania (last year reported 2000) and South Australia (last year reported 1998). Not reported this period from Queensland despite passive surveillance (last reported first quarter 2003). Never reported from New South Wales, Victoria or Western Australia despite passive surveillance. No information available in the Australian Capital Territory.
3	Epizootic ulcerative syndrome was detected in New South Wales in one pond of farmed silver perch (*Bidyanus bidyanus*) using field level diagnosis in June 2003 and in Queensland by histology in one epizootic in pond-farmed barcoo grunter (*Scortum barcoo*) in April and May 2003. EUS was not reported during this period but is known to have occurred in 2002 in Victoria (active surveillance) and Western Australia (passive surveillance). Passive surveillance and never reported in Northern Territory, South Australia and Tasmania. No information available in the Australian Capital Territory. EUS was also diagnosed by histology in silver perch (*Bidyanus bidyanus*) in a research station in New South Wales in February 2003- previously unreported.
4	*Bonamia exitiosus and Bonamia ostreae**:*** 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 in 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 (last year reported 2002) or Western Australia (last year reported 1994). Considered enzootic in Queensland but lack of diagnostic submissions. 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 Northern Territory, New South Wales, Queensland, Victoria and Western Australia. No information available for the Australian Capital Territory (no marine water responsibility). *Perkinsus olseni:* Reported from South Australia in April, May and June 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 Northern Territory, Queensland and Victoria. No information available in the Australian Capital Territory (no marine water responsibility).
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: An outbreak of peripheral neuropathy and retinopathy, a disease associated with gill-associated virus infection, was detected in *Penaeus monodon* on a monitored pond in New South Wales in May 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 Australian Capital Territory (no marine water responsibility) and the Northern Territory.
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):

New animal health controls have been implemented for the importation of a range of products including fish meals and feeds. Bulk products containing fish meal (products packed in bags less than 16 kg are exempt) will be tested on arrival for the presence of ruminant DNA.

Following is a link to the Biosecurity Australia page on stockfeed imports with links to relevant policy documents:
http://www.affa.gov.au/content/publications.cfm?ObjectID=B9E32DC2-578D-456B-927A46F26FE2C070

Alternatively you can link to www.aqis.gov.au/icon which is the AQIS import conditions database and search on stockfeed or look at the quarantine alert PQA0257 which relates to implementation of the new measures.

Country: **Bangladesh** Period: April-June 2003

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
	Month				
Diseases prevalent in some parts of the region	April	May	June		
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)	***	***	***		
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)*	0000	0000	0000		
2. White spot disease*	***	***	***		
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/]					
Bacterial disease	+	+	+	I	1
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	In the central part of the country, *Pangasius sutchi* was seriously affected with bacteria in the fish farms of Mymensingh area during the reported period. *E. tarda* and *Aeromonas* spp were identified from the affected fish. Mortality in silver carp and common carp also reported. Cause of mortality could not be known. Report of incidence of disease outbreak from other part of the country has not come.

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

Country: **Cambodia** Period: April-June 2003

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
	Month				
Diseases prevalent in some parts of the region	April	May	June		
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)	-	-	-		1
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*	+	+	+	I	2
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	Not reported during this period
2	White spot disease in shrimp culture occurred during this period, but it not widely spread. There was no report of any mass mortality

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

Country: **China P.R** Period: **April-June 2003**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
	Month				
Diseases prevalent in some parts of the region	April	May	June		
Finfish diseases					
1. Epizootic haematopoietic necrosis*	0000	0000	0000		
2. Infectious haematopoietic necrosis*	+	+	***		1
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*	+	+	+		2
3. Taura syndrome*	+	+	+		3
4. Infectious hypodermal and haematopoietic necrosis	***	***	***		
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*	***	***	+?		4
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.

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[a] Please use the following symbols:
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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	**Infectious Haematopoietic Necrosis** was detected in Rainbow trout aquaculture in Beijing by PCR in April 2003. The average morality rate reached 30%-50%. The Ministry of Agriculture (MOA), Administration of Quality Supervise, Inspection And Quarantine (AQSIQ) and Beijing fisheries administration sent experts to make an investigation, and take related isolation measures. IHN was successful controlled in Beijing area. In addition, in 2002, Turbot, introduced from France by Shandong province, show positive results for IHN inspection. IHN was also reported in Golden trout culture in Gansu province, but authority does not confirm it.
2	In April 2003, **White Spot Disease** was detected in whiteleg shrimp and Tiger Prawn culture in Hainan, Guangxi, Guangdong, Fujian provinces of South China. The average morality rate reached 35%. Until June 2003, WSD was reported in main Chinese coastal provinces except Jiangsu province.
3	In April 2003, **Taura syndrome** was detected in shrimp culture in Hainan, Guangxi, and Guangdong provinces of South China. The morality of Tiger Prawn culture is relative high. Until June 2003, Taura syndrome was reported in the coastal provinces located south of shanghai metropolises. Especially in Hainan, Guangxi, Guangdong provinces, the disease situation is very serious and the average morality rate reached 30%.
4	**Spring viraemia of carp** was detected in the sample of Koi Carp taken from hatcheries in Tianjian metropolises by the key Lab of Shenzhen Exit and Entry Inspection and Quarantine Bureau. But there is no clinical symptom in aquaculture.

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

Country: **Hong Kong China** Period: April-June 2003

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
	Month				
Diseases prevalent in some parts of the region	April	May	June		
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. olseni/atlanticus*[c/])*	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*	(+?2003)			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	Marine Humpbacked Grouper (*Cromileptes altivelis*) with nodavirus infection detected by PCR showing vacuolative retinopathy and neuronal degeneration in the brain. A mortality of 22.6% affecting a stocking of 1,550 fish in 1 fish culturing facility was reported in fish of 6-7 cm in length. Fish were stocked in March 2003 from Indonesia and disease was reported in late April 2003. Marine pompano (*Trichonitus blochii*) with nodavirus infection detected by PCR showing mainly vacuolative retinopathy and minor vacuolative encephalopathy. A mortality of 20% affecting a stocking of 30,000 fish in 1 fish farm was reported in fish of 5-7 cm length in size. Fish were stocked in May 2003 from mainland China and disease was reported in the beginning of June 2003.
2	No further White Spot Syndrome Virus cases reported during the reporting period.
3	Four separate cases affecting Giant Grouper (*Epinephelus lanceolatus*) in 2 marine Fish Culture Zones (FCZs) detected to have iridoviral infection and disease by histopathology, PCR and immunoperoxidase tests. Histopathology shows presence of Hypertrophic Basophilic Cells (HBCs) in spleen, kidney, liver, gills, eye with hematopoeitic necrosis in spleen and kidney. PCR using RSIV primers and immunoperoxidase using RSIV M10 monoclonal antibody detected iridovirus infected grouper fish. (i) Disease on 26.3.2003 at Yim Tin Tsai(West), 600 giant grouper (GIG) - >65% acute mortality, 92% cumulative mortality . Fish imported from Taiwan on 25.3.2003. (ii) Disease on 7.5.2003 at Yim Tin Tsai (West), 900-1000 giant grouper - 90% acute mortality. Fish imported from Taiwan beginning of May 03. (iii) Disease on 19.5.2003 at Yim Tin Tsai (West), 650 giant grouper - 50% acute mortality. Fish imported from Taiwan in mid-April 03. (iv) Disease reported on 5.6.2003 but started in May 03 at Yim Tin Tsai(East), 1000 giant grouper - 30% mortality. Source of fish undertermined. Fish Health Alert Card issued to all licensed farmers giving instructions on – • Recognition of the disease • Submission of samples for testing • Quarantine and disposal Three Fisheries and one Veterinary Teams were organised to collect history and samples from the 26 FCZs over a period of 4 weeks. A total of 145 fish samples (from 61 farmers approx. 6% of licensed farms) of grouper, non-grouper, local and imported, and wild fish were included in the sampling.
4	No further cases reported for the reporting period.

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

Country: **India** Period: April-June 2003

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
	Month				
Diseases prevalent in some parts of the region	April	May	June		
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	0000	0000	0000		
7. Epizootic ulcerative syndrome (EUS)	+()	+()	+()	I	1
8. Bacterial kidney disease	***	***	***		
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)*	?	?	?	I	2
2. White spot disease*	+()	+()	+()	I	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*	0000	0000	0000		
Any other diseases of importance [b/]					
Bacterial Haemorrhagic Septicaemia	+()	+()	+()	I	4
Vibriosis in shrimp	+()	+()	+()	I	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
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	Reported from Andhra Pradesh (Ongole Area)
2	Reported from Andhra Pradesh (Ongole Area)
3	Reported from Andhra Pradesh (Vijayawada, ongole), West Bengal (Soutn 24 Paraganas, Purba Midnapore), Gujarat, Maharastra and Kerala
4	Reported from Andhra Pradesh (Ongole Area)
5	Reported from Andhra Pradesh (Ongole Area)

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

Country: **Indonesia** 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	+	+	+	III	1
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. olseni/atlanticus*[c/])*	***	***	***		
5. MSX disease (*Haplosporidium. nelsoni*)*	***	***	***		
Crustacean diseases					
1. Yellowhead disease (YH virus; gill-associated virus)*	***	***	***		
2. White spot disease*	+	+	+	III	2
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	+	+	+	III	3
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	VNN occurred in humpback grouper (*Cromileptes altivelis*) from Bali, East Java and Lampung.
2	Disease outbreak occurred in most of shrimp farms in Indonesia. *Penaeus monodon* sample sent by shrimp farmers was tested using histology and PCR technique.
3	Koi and common carp mass mortality has been reported to spread to Sumatera islands. In February 2003, common carp mass mortality was reported in Lubuk Linggau, South Sumatera. In March 2003, the disease spread to Bengkulu province. Rate mortality up to 80% was reported in common carp.

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

Ministerial Decree No.40/2002. This second Ministerial decree associated with serious disease outbreak in koi and carp declared that Java and Bali are pronounced as infected areas and movement of live-fish from the Islands to another within the country should follow quarantine check for KHV. Importing koi and common carp is permitted only from free KHV country. (Effective date: 3 October 2002).

Country: **Indonesia** Period: April-June 2003

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
	Month				
Diseases prevalent in some parts of the region	April	May	June		
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)	***	***	***		
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. olseni/atlanticus*[c/])*	***	***	***		
5. MSX disease (*Haplosporidium. nelsoni*)*	***	***	***		
Crustacean diseases					
1. Yellowhead disease (YH virus; gill-associated virus)*	***	***	***		
2. White spot disease*	+	+	+	III	2
3. Taura syndrome*	***	***	***		
4. Infectious hypodermal and haematopoietic necrosis	+	+	+	III	3
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	+	+	+	III	4
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	Most of VNN cases occurred in humpback grouper (*Cromileptes altivelis*),. It was also reported in tiger grouper (*Epinephelus fuscogutathus*), orange-spotted grouper (*E. coioides*), marbled grouper (*E. polyphekadion*), and barramundi (*Lates calcarifer*).
2	IHHNV was reported in East Java. The disease caused mortality up to 50% in *Penaeus monodon*.
3	Disease outbreak occurred in most of shrimp farms in Indonesia. *Penaeus monodon* sample sent by shrimp farmers was tested using histology and PCR technique.
4	Koi and common carp mass mortality has been reported to spread to Jambi, Sumatare islands. Jambi got infected from South Sumatera, due to movement of diseased common carp from infected area in South Sumatera to Jambi. Mortality rate up to 80% was reported in common carp.

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

Country: **Iran** Period: April-June 2003

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
	Month				
Diseases prevalent in some parts of the region	April	May	June		
Finfish diseases					
1. Epizootic haematopoietic necrosis*	***	***	***		
2. Infectious haematopoietic necrosis*	?	?	?	I&III	1
3. *Oncorhynchus masou* virus disease*	***	***	***		
4. Viral haemorrhagic septicaemia*	0000	0000	0000		
5. Infectious pancreatic necrosis	0000	0000	0000		
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. olseni/atlanticus*[c/])*	***	***	***		
5. MSX disease (*Haplosporidium. nelsoni*)*	***	***	***		
Crustacean diseases					
1. Yellowhead disease (YH virus; gill-associated virus)*	0000	0000	0000		
2. White spot disease*	-(2002)	-(2002)	-(2002)		2
3. Taura syndrome*	0000	0000	0000		
4. Infectious hypodermal and haematopoietic necrosis	0000	0000	0000		
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	***	***	***		
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	Clinical signs of IHN were observed in 17 rainbow trout farms of 8 provinces that caused about 70% mortality from 20th April 2003 and then was detected using indirect fluorescent antibody test. Molecular techniques haven't been used to confirm this disease
2	White spot disease was not reported during this period but was known to have occurred in Choebdeh area of Abadan in July to September 2002. This was eventually eradicated by using active surveillance system in all of the cultured sites in aquaculture provinces.

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

Country: **Japan** Period: April-June 2003

Item	Disease status [a/] Month			Level of diagnosis	Epidemiological comment numbers
Diseases prevalent in some parts of the region	April	May	June		
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	+	+	+	III	
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. olseni/atlanticus*[c/])*	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*	-	+	+	III	
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		
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 or 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):

Revision of the Enforcement Ordinance of the Fisheries Resources Conservation Act.

Date of entry into force: 14 July 2003

Content of revision:

1. An infection-free certificate, issued by an appropriate governmental agency of exporting country, is required newly for Koi herpesvirus (KHV) disease, in addition to Spring Viremia of Carp (SVC), in order to apply for an import permission of carp to the Minister of Agriculture, Forestry and Fisheries.

2. The import of carp, in place of carp fry, needs above mentioned import permission by the Minister of Agriculture, Forestry and Fisheries.

With the revision of the Enforcement Ordinance of the Fisheries Resources Conservation Act, the Government of Japan published the notice as follows:

> The import of ornamental carp (Koi) also needs the same permission as the above. Total length of carp is below 40cm

Country: **Lao PDR** Period: April-June 2003

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
	Month				
Diseases prevalent in some parts of the region	April	May	June		
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: April-June 2003

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
	Month				
Diseases prevalent in some parts of the region	April	May	June		
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)	(1987)	(1987)	(1987)		
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. olseni/atlanticus*[c/])*	***	***	***		
5. MSX disease (*Haplosporidium. nelsoni*)*	***	***	***		
Crustacean diseases					
1. Yellowhead disease (YH virus; gill-associated virus)*	0000	0000	0000		
2. White spot disease*	?	+	?	II	1
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	A case of white spot disease was diagnosed on PL 9 by histopathology in Pulau Sayak, Kuala Kedha by the Regional Veterinary Laboratory in Bukit Tengah, Penang. The PL for that batch was destroyed

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

Country: **Myanmar** Period: April-June 2003

Item	Disease status [a/] Month			Level of diagnosis	Epidemiological comment numbers
Diseases prevalent in some parts of the region	April	May	June		
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. olseni/atlanticus*[c/])*	***	***	***		
5. MSX disease (*Haplosporidium. nelsoni*)*	***	***	***		
Crustacean diseases					
1. Yellowhead disease (YH virus; gill-associated virus)*	***	***	***		
2. White spot disease*	+()	+()	***	III	1
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/]					
Red Spot Disease	***	+ ()	***	I	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	WSSV was found in exported shrimp *M. rosenbergii*
2	Red granules (1.5cm size) on the viscera

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

Country: **Nepal** Period: April-June 2003

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
	Month				
Diseases prevalent in some parts of the region	April	May	June		
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
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. olseni/atlanticus*[c/])*	***	***	***		
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	During this period EUS reported in two districts Chitwan and Jhapa: the disease affected fish species reported were *Labeo rohita* (rohu) and *Cirrhima mrigala* (Naini). But the economic loss was reported to be not significant. Since the end of April to date, no occurrence of EUS reported.

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

Country: **Pakistan** Period: April-June 2003

Item	Disease status [a/] Month			Level of diagnosis	Epidemiological comment numbers
Diseases prevalent in some parts of the region	April	May	June		
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. olseni/atlanticus*[c/])*	***	***	***		
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	+	+	+	I & II	1
Red spot disease	+			II	2
Dropsy			+	II	3
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	Four cases of Lernaeasis were reported from private fish farms (infected area 2.2 acres). Diptrex @ 0.2 ppm was suggested to be used in there ponds.
2	One case of red spot disease was reported from a private fish farm (infected area 5.0 acres). Oxytetracycline @ 100 gm/4kg fish feed for 10 days was suggested to be used to treat the fish.
3	One case of abdominal dropsy (BHS) was reported from private fish farm (infected area 15 acres). Oxytetracycline was suggested for the treatment of diseased fish @ 60mg/kg fish body weight for 5-7 days.

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

Country: **Philippines** Period: April-June 2003

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
	Month				
Diseases prevalent in some parts of the region	April	May	June		
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	-	+	+	III	1
7. Epizootic ulcerative syndrome (EUS)	-	-	-		2
8. Bacterial kidney disease	0000	0000	0000		
9. Red sea bream iridoviral disease					
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)*	***	***	***		
2. White spot disease*	+	+	+	III	3
3. Taura syndrome*	0000	0000	0000		
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	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	May 2003 • Grouper (*Epinephelus* sp.) at different stages (broodstock, eggs, 3.6 and 4.1 lbs.) from Iloilo produced positive results for VER using RT-PCR June 2003 • Milkfish (*Chanos chanos*), 7-8 kg produced negative results for VER using RT-PCR • Snapper (fry and 2-month old), grouper and seabass eggs produced positive results for VER using Nested-PCR *Examinations conducted by SEAFDEC-AQD, Fish Health Laboratory.*
2	No reported case (passive) during the month of April-June 2003
3	There were 260 (batches/samples) of *P. monodon* post larva examined form different provinces (Iloilo, Samar, Quezon Province, Negros Occidental, Batangas, Sorsogon, Zamboanga, Misamis Oriental, Davao, Bohol, Cebu, Leyte, Surigao del Sur) during the period April-June 2003. Out these batches/samples, 154 showed negative results and 10 batches/samples showed positive results for White Spot Virus using PCR technique In *P. monodon* grow-out ponds, 30 batches/samples from farms in seven provinces showed negative results. Samples of P. monodon (spent spawner, broodstock, juveniles) from seven farms showed positive results for White Spot Virus using PCR technique. *Examinations conducted by BFAR-Fish Health Laboratories, SEAFDEC-AQD, Fish Health Laboratory.*

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 and after several review 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 does not only focus on fish health concerns but also on public health and ecological concerns as well
- 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: April-June 2003

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
	Month				
Diseases prevalent in some parts of the region	April	May	June		
Finfish diseases					
1. Epizootic haematopoietic necrosis*	0000	0000	0000	III	
2. Infectious haematopoietic necrosis*	-	-	-	III	
3. *Oncorhynchus masou* virus disease*	0000	0000	0000	III	
4. Viral haemorrhagic septicaemia*	+	+	+	III	
5. Infectious pancreatic necrosis	+	+	+	III	
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. olseni/atlanticus*[c/])*	+	+	+	III	
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*	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*	?	?	?		
Any other diseases of importance [b/]					
Marteilioides infection (*Marteilioides chungmuensis*)	+	+	+	III	
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: Nil**

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

Country: **Singapore** Period: April-June 2003

Item	Disease status [a/] Month			Level of diagnosis	Epidemiological comment numbers
Diseases prevalent in some parts of the region	April	May	June		
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)	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. olseni/atlanticus*[c/])*	***	***	***		
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/]					
Mullet iridoviral disease	+	+	-	III	1
Unknown diseases of serious nature					
1. Koi mass mortality	0000	0000	0000		2
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	Histological and TEM observations indicative of a systemic iridoviral disease were observed in five batches of 2-3 month old mullet fingerlings, *Mugil cephalus*. These mullet fingerlings were originally imported from Taiwan, and 10 to 80% mortalities were reported 1-2 months post-stocking. Viral isolates were tested negative by PCR using the RSIV primer sets recommended in the OIE diagnostic manual.
2	Koi herpesvirus has not been detected in active surveillance of koi for KHV since January 2003. The surveillance program involves inspection and testing on tissue culture.

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

Country: **Sri Lanka** Period: April-June 2003

Item	Disease status [a/] Month			Level of diagnosis	Epidemiological comment numbers
Diseases prevalent in some parts of the region	April	May	June		
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. olseni/atlanticus*[c/])*	0000	0000	0000		
5. MSX disease (*Haplosporidium. nelsoni*)*	0000	0000	0000		
Crustacean diseases					
1. Yellowhead disease (YH virus; gill-associated virus)*	?	?	?	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	*P. monodon* samples from the hatcheries and farms tested with PCR amplification for WSSV showed positive results. Intensity of occurrence was lower as previous quarter.

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

Country: **Thailand** Period: April-June 2003

Item	Disease status [a/] Month			Level of diagnosis	Epidemiological comment numbers
Diseases prevalent in some parts of the region	April	May	June		
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	
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*)*	***	***	***		1
3. Mikrocytosis (*Mikrocytos mackini*)*	***	***	***		
4. Perkinsosis (*Perkinsus marinus, P. olseni/atlanticus*[c/])*	***	***	***		
5. MSX disease (*Haplosporidium. nelsoni*)*	***	***	***		
Crustacean diseases					
1. Yellowhead disease (YH virus; gill-associated virus)*	?	?	?	I	
2. White spot disease*	+	+	+	III	2
3. Taura syndrome*	0000	?	?	III	3
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	
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	The Result from the OIE Reference Laboratory about the specimens that sent to the OIE expert for confirmation as mention in the report during period January – March 2003 indicated that the parasite found in the specimens were not *Marteilia refringens* and *M. Sydney.*
2	A total of 5,567 prawn samples cultured in 26 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. 46 samples or 0.83% were recorded as PCR positive or carrying SEMBV gene.
3	Taura syndrome had been suspected in the Pacific white shrimp cultured in two Provinces in Central Thailand in May 2003. The suspected specimens had been detected in the University Laboratory as positive RT-PCR for TSV using a commercial kit. The specimens have been collected and will send to the Reference Laboratory for confirmation. Results from the Reference Laboratory will be recorded later. Taura syndrome in Pacific white shrimp warning has been passed to the shrimp farmers through Provincial Fishery Officers and different kinds of media.

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

I. Law and Legislation for controlling Aquatic Animal Diseases in Thailand: Current status

Three major existing laws, Fisheries Act (1947) 3rd revision in 1985, Wildlife Conservation and Protection Act (1992) and Control of Importation and Exportation of Goods Act (1979) currently used by the Department of Fisheries (DoF, Competent Authority) are aiming for the control importation and exportation of aquatic animal species and carrier of the pathogens.

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 pp.

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:
Dr. Rohana P. Subasinghe
FAO of the United Nations
Viale delle Terme di Caracalla
Rome 00100 Italy
E-mail: Rohana.Subasinghe@fao.org

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:
Project Manager
Southeast Asia Aquatic Disease Control Project (SEAADCP)
Aquatic Animal Health Research Institute (AAHRI)
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 Aquatic Animal Health Code. Sixth Edition, 2003.

OIE Manual of Diagnostic Tests for Aquatic Animals. Fourth Edition. 2003

OIE Risk Analysis in Aquatic Animal Health. 2001.

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). By 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
Tel: (62) 362 92278
Fax: (62) 362 92272

AQUAPLAN Zoning Policy Guidelines

Information from:
Aquatic Animal Health
Office of the Chief Veterinary Officer
Product Integrity, Animal and Plant Health
Agriculture, Fisheries and Forestry
GPO Box 858
Canberra, ACT 2601

List of National Coordinators*

Country	Name and Address
Australia	Dr. Eva -Maria Bernoth (NC) Manager, Aquatic Animal Health Unit , Office of the Chief Veterinary Officer Department of Agriculture, Fisheries and Forestry GPO Box 858, Canberra ACT 2601, Australia Fax: 61-2-6272 3150; Tel: 61-2-6272 4328 Email: Eva-Maria.Bernoth@affa.gov.au Mr. Alistair Herfort (FP) Aquatic Animal Health Unit , Office of the Chief Veterinary Officer Department of Agriculture, Fisheries and Forestry GPO Box 858, Canberra ACT 2601, Australia Fax: +61 2 6272 3150; tel: +61 2 6272 4009 E-mail: Alistair.Herfort@affa.gov.au
Bangladesh	Dr. M. A. Mazid (NC) Director General, Bangladesh Fisheries Research Institute (BFRI) Mymensingh 2201, Bangladesh Fax: 880-2-55259, Tel: 880-2-54874 E-mail: dgbfr@bdonline.com
Cambodia	Mr Hav Viseth (NC) Vice Chief, Aquaculture Bureau, Department of Fisheries 186 Norodom Blvd.,P.O. Box 835, Phnom Penh, Cambodia Fax: (855) 23 210 565; Tel: (855) 23 210 565 E-mail: smallfish@online.com.kh
China	Mr Zhuzewen (NC) Disease Prevention and Control Division National Fisheries Technique Extension Center (NFTEC) Ministry of Agriculture Mai Zi Dian Street No 18 Chanyang District, Beijing 100026, China Fax: 86-10-65074250; Tel: 86-010-64195073 E-mail:zewenzhu@sina.com Prof. Yang Ningsheng (FP) Director, Information Center, China Academy of Fisheries Science 150 Qingta Cun, South Yongding Road, Beijing 100039, China Fax: 86-010-68676685; Tel: 86-010-68673942 E-mail: ningsheng.yang@mh.bj.col.com.cn
DPR Korea	Mr. Chong Yong Ho (NC) Director of Fish Farming Technical Department, Bureau of Freshwater Culture Sochangdong Central District, P.O.Box. 95 , Pyongyong, DPR Korea Fax- 850-2-814416; Tel- 3816001, 3816121

* The matrix provides a list of National Coordinators nominated by Governments and focal points for the *Asia-Pacific Quarterly Aquatic Animal Disease Reports*.

Hong Kong China	Dr. Roger S.M. Chong (NC) National Coordinator and Fish Health Officer Agriculture, Fisheries and Conservation Department Castle Peak Veterinary Laboratory, San Fuk Road, Tuen Mun New Territories, Hong Kong Fax: +852 2461 8412; Tel: + 852 2461 6412 E-mail: vfhoafd@netvigator.com
India	Dr.S.Ayyappan, (NC) DDG Fisheries Indian Council of Agricultural Research (ICAR) Krishi Anusandhan Bhawan Pusa, New Delhi-110012 India Tel:91 11 2582 2738; Fax:91 11 2582 2738 E-mail: ayyappans@icar1.nic.in,ayyapans@yahoo.co.uk
Indonesia	Dr. Ahmed Rukyani (NC) Directorate General of Fisheries Jl. Harsono RM No. 3 Ragunan Pasar Minggu Tromol Pos No.: 1794/JKS Jakarta – 12550 Indonesia Tel: 7804116-119; Fax: 7803196 – 7812866 E-mail: dfhe@indosat.net.id Mr. Augus Sunarto (FP) Fish Health research Laboratory Central Research Institute of Aquaculture Ministry of Marine Affairs and Fisheries Jakarta, Indonesia E-mail: agussunarto@hotmail.com
Iran	Dr. Reza Pourgholam (NC) National Coordinator Veterinary Organization Ministry of Jihad – E – Sazandegi Vali-ASR Ave S.J.Asad Abadi St PO Box 14155 – 6349 Tehran, Iran Tel: 8857007-8857193; Fax: 8857252 Dr. A.E. Maghsodi Fard (FP) Manager Director of Aquatic Animal Diseases Department amaghsodifard@yahoo.com
Japan	Mr. Mahito Masuda (NC) Fisheries Health Protection Office Fish Ranching and Aquaculture Division Fishery Agency 1-2-1, Kasumigaseki Chiyoda-ku, Tokyo 100-8907, Japan Fax: 813-3591-1084; Tel: 813-350-28111(7365) E-mail: mahito_masuda@nm.maff.go.jp Dr. Hiroshi Kimiya (FP) Director, Office of Fish Health Protection

Lao PDR	Mr. Khampet Roger (NC) National Coordinator Fisheries and Livestock Department Ministry of Agriculture, Forestry and Fisheries P.O. Box 811, Vientianne, Lao PDR TeleFax: (856-21) 415674; Tel: (856-21) 416932 E-mail: eulaodlf@laotel.com Mr. Bounma Luang Amath (FP) Focal Point for Disease Reporting Fisheries and Livestock Department Ministry of Agriculture, Forestry and Fisheries P.O. Box 811, Vientianne, Lao PDR TeleFax: (856-21) 415674; Tel: (856-21) 416932 E-mail: eulaodlf@laotel.com
Malaysia	Mr. Ambigadevi Palanisamy (NC) National Coordinator Fisheries Research Institute, Department of Fisheries Penang, Malaysia E-mail: ambigadevip@yahoo.com Dr. Ong Bee Lee (FP) Head, Regional Veterinary Laboratory Services Department of Veterinary Services, 8th & 9th Floor, Wisma Chase Perdana Off Jln Semantan 50630, Kuala Lumpur, Malaysia Fax: (60-3) 254 0092/253 5804; Tel: (60-3) 254 0077 ext.173 E-mail: ong@jph.gov.my
Myanmar	Ms. Daw May Thanda Wint (NC) Assistant Staff Officer, Aquatic Animal Health Section Department of Fisheries Sinmin Road, Alone Township , Yangon, Myanmar Fax: (95-01) 228-253; Tel: (95-01) 283-304/705-547 E-mail: dof@mptmail.net.mm
Nepal	Mr. Gagan B.N. Pradhan (NC) Fisheries Development Officer Directorate of Fisheries Development Central Fisheries Building, Balaju, Kathmandu, Nepal Tel: + 350 662 E-mail: dofd@mail.com.np Mr. Shankar Prasad Dahal (FP) Assistant Fisheries Development Officer Directorate of Fisheries Development Central Fisheries Building, Balaju, Kathmandu, Nepal Tel: + 350 662 E-mail: dofd@mail.com.np
Pakistan	Dr. Muhammad Hayat (NC) Assistant Fisheries Development Commissioner Livestock Division, Ministry of Food, Agriculture and Livestock 10th Floor, Shaheed-e-Millat Secretariat (Livestock Wing) I Islamabad Fax: 92-51-922 1246; Tel: 92-51-920 8267 ahc@isb.paknet.com.pk

Philippines	Dr. Joselito R. Somga (NC) Aquaculturist II, Fish Health Section, BFAR 860 Arcadia Building, Quezon Avenue, Quezon City 1003 Fax: (632)3725055/4109987; Tel:(632) 3723878 loc206 or 4109988 to 89 E-mail: jsomga@edsamail.co.ph
Republic of Korea	Dr. Mi-Seon Park (NC) Director of Pathology Division National Fisheries Research and Development Institute 408-1 Sirang, Kijang Pusan 619-900 Korea RO Tel: 82-51-720-2470; Fax: 82-51-720-2498 E-mail: parkms@haema.nfrda.re.kr
Singapore	Mr Hanif Loo Jang Jing (NC) Programme Executive (Aquaculture) Aquaculture Branch Food Supply & Technology Department Agri-Food & Veterinary Authority of Singapore 5 Maxwell Road, #01-00 Tower Block, MND Complex, Singapore 069110 Tel: 65 – 63257636; Fax: 65 – 63257677 Email: loo_jang_jing@ava.gov.sg Dr. Susan Kueh (FP) Agri-Food and Veterinary Authority of Singapore Central Veterinary Laboratory 60 Sengkang East Way Singapore 548596 Tel: (65) 3863572; Fax No. (65) 3862181 E-mail: Susan_KUEH@ava.gov.sg
Sri Lanka	Mr. A. M. Jayasekera (NC) Director-General National Aquaculture Development Authority of Sri Lanka Ministry of Fisheries and Aquatic Resources Development, 317 1/1 T.B. Jayah Mawatha, Colombo 10, Sri Lanka Tel: (94-1) 675316 to 8; Fax: (94-1) 675437 E-mail: aqua1@eureka.lk Dr. Geetha Ramani Rajapaksa (FP) Veterinary Surgeon Department of Animal Production and Health Veterinary Investigation Centre, Welisara, Ragama, Sri Lanka Tel: + 01-958213 E-mail: sser@sri.lanka.net
Thailand	Dr. Somkiat Kanchanakhan (NC) Fish Virologist, Aquatic Animal Health Research Institute (AAHRI) Department of Fisheries , Kasetsart University Campus Jatujak, Bangkok 10900, Thailand Fax: 662-561-3993; Tel: 662-579-4122, 6977 E-mail: somkiatkc@fisheries.go.th

Vietnam	Dr. Le Thanh Luu (NC) Vice-Director Research Institute for Aquaculture No. 1 (RIA No. 1) Dinh Bang, Tien Son, Bac Ninh, Vietnam Fax: 84-4-827-1368; Tel: 84-4-827-3070 E-mail: ria1@hn.vnn.vn Ms Phan Thi Van (FP) Researcher, Research Institute for Aquaculture No.1 (RIA No.1) Dinh Bang , Tien Son, Bac Ninh, Vietnam Fax: 84-4-827-1368; Tel : 84-4-827 - 3070 E-mail: ria1@hn.vnn.vn; phanvan@hn.vnn.vn

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 disease in question is reported or known to be present.
+?	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**.
+( )	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.

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

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:

OIE East 311, Shin Aoyama Building, 1-1-1 Minami Aoyama, Minato-ku,
Tokyo 107-0062, Japan
Tel: +81-3-5411-0520; Fax: +81-3-5411-0526
E-mail: oietokyo@tky.3web.ne.jp

NACA P. O. Box 1040, Kasetsart Post Office, Bangkok 10903, Thailand
Tel: 66-2-561-1728/9 (ext. 117); Fax: 66-2-561-1727
Dr. C.V. Mohan
E-mail: mohan@enaca.org

FAO Fishery Resources Division, Fisheries Department
FAO of the United Nations
Viale delle Terme di Caracalla, 00100 Rome
Tel. +39 06 570 56473; Fax + 39 06 570 530 20
E-mail: Rohana.Subasinghe@fao.org

Notes

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Website: **http://www.enaca.org**

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