**2010/1**

# QUARTERLY AQUATIC ANIMAL DISEASE REPORT (Asia and Pacific Region)

## January – March 2010

Published by the

**Network of Aquaculture Centres in Asia-Pacific**

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# Contents

# Foreword

# Asia-Pacific Aquatic Animal Disease Surveillance Revisited

It has been 12 years since the inception of Asia-Pacific QAAD reporting system during the 3rd quarter of 1998. To date, a total of 47 reports have been published (including this report) with average number of countries submitting the quarterly report at 16 (out of 21). Disease reporting by each participating country has improved significantly in recent years, as efficient diagnostic techniques (e.g. histopathology, PCR, RT-PCR, virus assays using cell lines, and electron microscopy) have been used to screen and detect important viral and bacterial diseases of fish and crustaceans (Table 1). The commitments of each of the National Coordinators (NCs)/OIE Aquatic Focal Points should be commended for their efforts in continuous surveillance, collecting and collating information on aquatic animal disease in their respective countries, and for their timely submission of the QAAD reports. Some of the NCs (Australia, Iran, Republic of Korea, Nepal, Philippines, Sri Lanka, Thailand and Vietnam) have also become OIE (World Organization for Animal Health) Aquatic Focal Points, recognizing their important role in disease surveillance and health certification.

**Table 1. Number of countries using different levels of disease diagnosis for surveillance.**

| | 1998* | 1999* | 2000* | 2001* | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Level I** | 13 | 17 | 7 | 9 | 8 | 8 | 9 | 7 | 9 | 7 | 4 | 10 |
| **Level II** | 2 | 2 | 3 | 3 | 7 | 6 | 7 | 10 | 7 | 13 | 6 | 6 |
| **Level III** | 5 | 6 | 5 | 6 | 9 | 10 | 10 | 11 | 11 | 12 | 12 | 12 |

* Numbers were based on data entry and epidemiological comments only.

The wide dissemination of information contained in QAAD reports especially on important diseases (both OIE and non-OIE listed), either through distribution of the printed copies or downloads from NACA website (Table 2), have been instrumental in aquatic animal health awareness in the region.

**Table 2. Average yearly downloads of QAAD reports from NACA website as of June 2010.**

| Year | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Mean # of downloads** | 234* | 343 | 274 | 443 | 612 | 1014 | 857 | 1121 | 570 | 644 | 541 | 394** |

* Only 2 quarterly reports.

** Including 4th Quarter Report which was only made available online in May 2010 (with total downloads of 127).

The QAAD reporting is a useful mechanism for recognizing emerging diseases in the region, and also serves as a guide to participating countries in revising their national list of reportable diseases. Diseases considered important in the region (aside from the OIE-listed diseases) are listed in QAAD to encourage surveillance and stimulate reporting. As such, some of the non-OIE listed diseases of finfishes and crustaceans which were included in QAAD serve as early warning system of worldwide significance, having now been listed by OIE in the Aquatic Code. These diseases include Infection with Koi Herpesvirus (KHV), Abalone Viral Mortality (AVM) and White Tail Disease (WTD) which were all listed in QAAD in 2005, and were listed in OIE

in 2007 (Infection with KHV and AVM) and 2008 (WTD). Two other diseases, Necrotising hepatopancreatitis and Milky haemolymph disease of spiny lobster, which were listed in QAAD in 2005 and 2008, respectively, are now listed as "under study" in OIE Aquatic Code.

The QAAD list of diseases is revised annually by the Regional Advisory Group (AG) on Aquatic Animal Health which is composed of 10 experts. The list is based on OIE-listed diseases and other diseases that are considered important in the region. The QAAD list does not have any legal ramifications and the fact that a disease is listed does not *per se* provide a justification for sanitary measures. Members of AG are well-known aquatic animal health experts in the region and are also recognized worldwide. Some of AG members have also been tapped by OIE and other international organizations to serve as member of their aquatic animal health programme (e.g. OIE's Aquatic Animal Health Standards Commission).

At present, QAAD reports are submitted within 75 days after the end of reporting quarter. However, under emergency situations, immediate notification should be conducted in line with the provisions of the OIE Aquatic Code. As such, the need to establish the Regional Core on Aquatic Animal Diseases of WAHIS (World Animal Health Information System) is still being pursued and well supported by AG. An implementation scheme is now being planned with NACA and OIE Asia Pacific in developing the outputs of the system. Once the system is in effect, this will replace the QAAD reporting and NCs/OIE Aquatic Focal Points will be able to post the reports online, preferably on monthly basis. Immediate notification will also be encouraged for diseases that are emerging in the region.

Overall, aquatic animal disease surveillance in the region through QAAD reporting or through WAHIS Regional Core on Aquatic Animal Diseases (once implemented) is a useful mechanism for recognizing existing and emerging diseases. Through its more than 10 years of existence, it has generated important information on aquatic animal diseases that are present or absent in different areas of the region.

As a last word, we would like to welcome our newly appointed National Coordinator for Hong Kong, Ms. Situ Ying-yi, Anna (Fisheries Officer 2) of the Agriculture, Fisheries and Conservation Department, and for Nepal (also OIE Aquatic Focal Point), Mr. Jay Kishore Mandal (Senior Fisheries Development Officer) of Central Fisheries Laboratory.

# Reports Received by the NACA Secretariat

**Country: AUSTRALIA** **Period: January-March 2010**

| Item | Disease status [a/] | | | Level of diagnosis | Epidemiological comment numbers |
|---|---|---|---|---|---|
| **DISEASES PREVALENT IN THE REGION** | Month | | | | |
| **FINFISH DISEASES** | January | February | March | | |
| **OIE-listed diseases** | | | | | |
| 1. Epizootic haematopoietic necrosis | -(2008) | -(2008) | -(2008) | | 1 |
| 2. Infectious haematopoietic necrosis | 0000 | 0000 | 0000 | | |
| 3. Spring viraemia of carp | 0000 | 0000 | 0000 | | |
| 4. Viral haemorrhagic septicaemia | 0000 | 0000 | 0000 | | |
| 5. Epizootic ulcerative syndrome | + | -(2010) | -(2010) | III | 2 |
| 6. Red seabream iridoviral disease | 0000 | 0000 | 0000 | | |
| 7. Koi herpesvirus disease | 0000 | 0000 | 0000 | | |
| **Non OIE-listed diseases** | | | | | |
| 8.Grouper iridoviral disease | 0000 | 0000 | 0000 | | |
| 9.Viral encephalopathy and retinopathy | + | + | -(2010) | III | 3 |
| 10.Enteric septicaemia of catfish | -(2008) | -(2008) | + | III | 4 |
| **MOLLUSC DISEASES** | | | | | |
| **OIE-listed diseases** | | | | | |
| 1. Infection with *Bonamia exitiosa* | 0000 | 0000 | 0000 | | |
| 2. Infection with *Perkinsus olseni* | -(2009) | -(2009) | -(2009) | | 5 |
| 3. Abalone viral mortality | + | -(2010) | -(2010) | III | 6 |
| **Non OIE-listed diseases** | | | | | |
| 4. Infection with *Marteilioides chungmuensis* | 0000 | 0000 | 0000 | | |
| 5. Acute viral necrosis (in scallops) | *** | *** | *** | | |
| 6.Akoya oyster disease | 0000 | 0000 | 0000 | | |
| **CRUSTACEAN DISEASES** | | | | | |
| **OIE-listed diseases** | | | | | |
| 1. Taura syndrome | 0000 | 0000 | 0000 | | |
| 2. White spot disease | 0000 | 0000 | 0000 | | |
| 3. Yellowhead disease | 0000 | 0000 | 0000 | | |
| 4. Infectious hypodermal and haematopoietic necrosis | -(2008) | -(2008) | -(2008) | | 7 |
| 5. Infectious myonecrosis | 0000 | 0000 | 0000 | | |
| 6.White tail disease (MrNV) | -(2008) | -(2008) | -(2008) | | 8 |
| **Non OIE-listed diseases** | | | | | |
| 7. Necrotising hepatopancreatitis | *** | *** | *** | | |
| 8. *Monodon* slow growth syndrome | 0000 | 0000 | 0000 | | |
| 9. Milky lobster disease | 0000 | 0000 | 0000 | | |
| **AMPHIBIAN DISEASES** | | | | | |
| **OIE-listed diseases** | | | | | |
| 1. Infection with Ranavirus | -(2008) | -(2008) | -(2008) | | 9 |
| 2. Infection with *Batrachochytrium dendrobatidis* | + | -(2010) | -(2010) | III | 10 |
| **ANY OTHER DISEASES OF IMPORTANCE** | | | | | |
| 1. | | | | | |
| 2. | | | | | |

**DISEASES PRESUMED EXOTIC TO THE REGION[b]**
**LISTED BY THE OIE**
**Finfish**: Infectious salmon anaemia; Gyrodactylosis (*Gyrodactylus salaris*).
**Molluscs**: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*; *Xenohaliotis californiensis*.
**Crustaceans:** Crayfish plague (*Aphanomyces astaci*).
**NOT LISTED BY THE OIE**
**Finfish**: Channel catfish virus disease

a/ Please use the following symbols:

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

b/ If there is suspicion or confirmation of any of these diseases, they must be reported immediately, because the region is considered free of these diseases

## 1. Epidemiological comments:

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

| Comment No. | |
|---|---|
| 1 | Epizootic haematopoietic necrosis was not reported this period, but is known to occur annually in the Australian Capital Territory (last year reported 2008). Not reported this period despite passive surveillance, but known to have occurred previously in Victoria (last year reported 2004), New South Wales (last year reported 2003) and South Australia (last year reported 1992). Targeted surveillance and never reported in Tasmania. Passive surveillance and never reported in the Northern Territory, Queensland or Western Australia. |
| 2 | **Epizootic ulcerative syndrome**<br>1. **Reported in Victoria** in January 2010. Passive surveillance;<br>2. **In** Murray cod (*Maccullochella peelii peelii*) a) younger than 1.5 years old, b) approximately 1.5 year old stock;<br>3. **Clinical signs-** a) lesions and high mortality, b) deep ulcerative lesions with low mortality;<br>4. **Pathogen-** *Aphanomyces invadans*;<br>5. **Mortality rate-** a) 100%, b) 1%;<br>6. **Economic loss-** a) 5000 fish, b) not reported;<br>7. **Geographic extent-** single floating pen system in irrigation channel;<br>8. **Containment measures-** water does not flow back into tributary;<br>9. **Laboratory confirmation-** diagnosed by histopathology; culture and PCR;<br>10. **Publications-**unpublished.<br><br>Epizootic ulcerative syndrome was not reported during this period despite targeted surveillance, but is known to have occurred previously in South Australia (last year reported 2008). Not reported during this period despite passive surveillance, but is known to have occurred previously in New South Wales, Queensland and Western Australia (last year reported 2009) and Northern Territory (last year reported 2006). Passive surveillance and never reported in Tasmania. No information available in the Australian Capital Territory. |

| | |
|---|---|
| 3 | **Viral Encephalopathy and Retinopathy**<br>1. **Reported in Queensland** in a) January and b) February 2010. Passive surveillance;<br>2. **In** a) 6 month old flowery cod (*Epinephelus fuscoguttatus*) juveniles, b) 12 month old gold spot cod (*Epinephelus coioides*) juveniles;<br>3. **Clinical signs-**a) abnormal swimming at water surface with enlarged abdomens, low mortality, b) low mortality, enlarged abdomens;<br>4. **Pathogen-** Betanodavirus;<br>5. **Mortality rate-** a) low, b) 10 fish/day over 2 weeks;<br>6. **Economic loss-** not reported;<br>7. **Geographic extent-** a) single pond, b) floating cages in an earthen seawater pond;<br>8. **Containment measures-** not reported – endemic;<br>9. **Laboratory confirmation-** diagnosed by histology and nodavirus immunohistochemistry (IHC);<br>10. **Publications-** unpublished.<br><br>Viral encephalopathy and retinopathy was not reported this quarter despite passive surveillance from Northern Territory and South Australia (last year reported 2009), New South Wales (last year reported 2008), Western Australia (last year reported 2005) and Tasmania (last year reported 2000). Never reported from Victoria despite passive surveillance. No information available this period in the Australian Capital Territory. |
| 4 | **Enteric septicaemia of catfish**<br>1. **Reported in Northern Territory** in March 2010. Passive surveillance;<br>2. **In** 10 – 15 cm juvenile native black catfish (*Neosilurus ater*) in captivity. Not detected in wild fish despite subsequent targeted surveillance;<br>3. **Clinical signs-** erratic swimming with redness to the belly prior to death;<br>4. **Pathogen-** *Edwardsiella ictaluri*;<br>5. **Mortality rate-** 200/5000;<br>6. **Economic loss-** not reported;<br>7. **Geographic extent-** 1 x 700 litre tank in an ornamental fish wholesale facility;<br>8. **Containment measures-** quarantine and destruction;<br>9. **Laboratory confirmation-** diagnosed using microbact biochemical test kit and PCR ribosomal DNA sequencing;<br>10. **Publications-** unpublished.<br><br>Enteric septicaemia of catfish was not reported this quarter despite passive surveillance but is known to have occurred previously in Queensland (last year reported 2008) and in Tasmania in zebrafish (*Brachydanio rerio*) in PC2 containment (last year reported 2001). Never reported in New South Wales, South Australia and Victoria despite passive surveillance. No information available this period in the Australian Capital Territory and Western Australia. |
| 5 | Infection with *Perkinsus olseni* was not reported this quarter from Western Australia despite targeted surveillance (last year reported 2003). Not reported this period despite passive surveillance from South Australia (last reported 1st quarter 2009), New South Wales (last year reported 2005). Passive surveillance and never reported in the Northern Territory, Queensland, Tasmania and Victoria. No information available in the Australian Capital Territory (no marine water responsibility). |

| | |
|---|---|
| 6 | **Abalone viral ganglioneuritis**<br>1. **Reported in Victoria** in January 2010. Active surveillance;<br>2. **In** wild *Haliotis* spp;<br>3. **Clinical signs-** not reported;<br>4. **Pathogen-** abalone herpes-like virus;<br>5. **Mortality rate-** not reported;<br>6. **Economic loss-** not reported;<br>7. **Geographic extent-** same area as reported in last quarter 2009;<br>8. **Containment measures-** nil;<br>9. **Laboratory confirmation-** diagnosed by real-time PCR and histopathology;<br>10. **Publications-**unpublished.<br><br>Not reported this period despite passive surveillance in wild abalone and targeted surveillance on farms, but known to have occurred previously in Tasmania (last year reported 2009). Passive surveillance and never reported in Queensland, New South Wales, South Australia and Western Australia. No information available in the Australian Capital Territory (no marine water responsibility) and Northern Territory. |
| 7 | Infectious hypodermal and haematopoietic necrosis virus was not reported this period despite passive surveillance but is known to have occurred previously in Queensland (last year reported 2008) and Northern Territory (last year reported 2003). Never reported in Western Australia despite targeted surveillance. Passive surveillance and never reported in New South Wales, South Australia and Victoria. No information available in Australian Capital Territory (no marine responsibility) and Tasmania (susceptible species not present). |
| 8 | White tail disease was not reported this period from Queensland despite passive surveillance (last year reported 2008). Passive surveillance and never reported from New South Wales and South Australia. No information available this period in the Australian Capital Territory, Northern Territory, Tasmania, Victoria and Western Australia. |
| 9 | Infection with ranavirus was suspected but not confirmed despite passive surveillance in Queensland. Not reported this period but known to have occurred previously in the Northern Territory (reported to have occurred in 2008). Passive surveillance and never reported in Tasmania. No information available this period in the Australian Capital Territory, New South Wales, South Australia, Victoria and Western Australia. |
| 10 | **Infection with *Batrachochytrium dendrobatidis***<br>1. **Reported in Tasmania** in January 2010. Targeted surveillance;<br>2. **In** *Crinia* spp., *Litoria* spp. and *Limnodynastes* spp. from the wild;<br>3. **Clinical signs-**not recorded;<br>4. **Pathogen-** *Batrachochytrium dendrobatidis*;<br>5. **Mortality rate-**unknown;<br>6. **Economic loss-** unknown;<br>7. **Geographic extent-** multiple freshwater streams and lakes surveyed throughout Tasmania from November 2008 to January 2010. Pathogen confirmed present in 20 of 57 sites;<br>8. **Containment measures-** hygiene protocols developed for land management agencies;<br>9. **Laboratory confirmation-** diagnosed by Taqman and conventional PCR;<br>10. **Publications-**unpublished.<br><br>Infection with *Batrachochytrium dendrobatidis* was not reported this period despite passive surveillance but is known to have occurred previously in Western Australia (reported to have occurred in 2008). Suspected but not confirmed this period despite passive surveillance in Queensland. No information available this period in the Australian Capital Territory, New South Wales, Northern Territory, South Australia and Victoria. |

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

**Country: BANGLADESH** **Period: January-March 2010**

| Item | Disease status [a/] | | | Level of diagnosis | Epidemiological comment numbers |
|---|---|---|---|---|---|
| **DISEASES PREVALENT IN THE REGION** | Month | | | | |
| **FINFISH DISEASES** | January | February | March | | |
| **OIE-listed diseases** | | | | | |
| 1. Epizootic haematopoietic necrosis | 0000 | 0000 | 0000 | | |
| 2. Infectious haematopoietic necrosis | 0000 | 0000 | 0000 | | |
| 3. Spring viraemia of carp | 0000 | 0000 | 0000 | | |
| 4. Viral haemorrhagic septicaemia | 0000 | 0000 | 0000 | | |
| 5. Epizootic ulcerative syndrome | - | + | + | I,II | 1 |
| 6. Red seabream iridoviral disease | 0000 | 0000 | 0000 | | |
| 7. Koi herpesvirus disease | 0000 | 0000 | 0000 | | |
| **Non OIE-listed diseases** | | | | | |
| 8.Grouper iridoviral disease | 0000 | 0000 | 0000 | | |
| 9.Viral encephalopathy and retinopathy | 0000 | 0000 | 0000 | | |
| 10.Enteric septicaemia of catfish | 0000 | 0000 | 0000 | | |
| **MOLLUSC DISEASES** | | | | | |
| **OIE-listed diseases** | | | | | |
| 1. Infection with *Bonamia exitiosa* | 0000 | 0000 | 0000 | | |
| 2. Infection with *Perkinsus olseni* | 0000 | 0000 | 0000 | | |
| 3. Abalone viral mortality | 0000 | 0000 | 0000 | | |
| **Non OIE-listed diseases** | | | | | |
| 4. Infection with *Marteilioides chungmuensis* | 0000 | 0000 | 0000 | | |
| 5. Acute viral necrosis (in scallops) | 0000 | 0000 | 0000 | | |
| 6.Akoya oyster disease | 0000 | 0000 | 0000 | | |
| **CRUSTACEAN DISEASES** | | | | | |
| **OIE-listed diseases** | | | | | |
| 1. Taura syndrome | 0000 | 0000 | 0000 | | |
| 2. White spot disease | - | - | - | | |
| 3. Yellowhead disease | 0000 | 0000 | 0000 | | |
| 4. Infectious hypodermal and haematopoietic necrosis | 0000 | 0000 | 0000 | | |
| 5. Infectious myonecrosis | 0000 | 0000 | 0000 | | |
| 6.White tail disease (MrNV) | 0000 | 0000 | 0000 | | |
| **Non OIE-listed diseases** | | | | | |
| 7. Necrotising hepatopancreatitis | 0000 | 0000 | 0000 | | |
| 8. *Monodon* slow growth syndrome | 0000 | 0000 | 0000 | | |
| 9. Milky lobster disease | | | | | |
| **AMPHIBIAN DISEASES** | | | | | |
| **OIE-listed diseases** | 0000 | 0000 | 0000 | | |
| 1. Infection with Ranavirus | | | | | |
| 2. Infection with *Batrachochytrium dendrobatidis* | 0000 | 0000 | 0000 | | |
| **ANY OTHER DISEASES OF IMPORTANCE** | | | | | |
| 1. Mass mortality of tilapia | - | + | + | I,II | 2 |
| 2. | | | | | |

**DISEASES PRESUMED EXOTIC TO THE REGION[b]**
**LISTED BY THE OIE**
**Finfish**: Infectious salmon anaemia; Gyrodactylosis (*Gyrodactylus salaris*).
**Molluscs**: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*; *Xenohaliotis californiensis*.
**Crustaceans:** Crayfish plague (*Aphanomyces astaci*).
**NOT LISTED BY THE OIE**
**Finfish**: Channel catfish virus disease

a/ Please use the following symbols:

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

b/ If there is suspicion or confirmation of any of these diseases, they must be reported immediately, because the region is considered free of these diseases

**1. Epidemiological comments:**

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

| Comment No. | |
|---|---|
| 1 | **EUS**<br>1) **Origin of the disease or pathogen:** Unknown<br>2) **Species affected:** Indian Major carps<br>3) **Disease characteristics:** Infection in the mouth region and jaw, prominent or deep lesion on the caudal region, erosion in the tail fin rays and erratic movement.<br>4) **Pathogen:**<br>5) **Mortality rate:** 20-30%<br>6) **Death toll:** Unknown<br>7) **Size of infected areas or names of infected areas:** Mymensingh district<br>8) **Preventive/control measures taken:** Liming, water exchange, application of $KMnO_4$<br>9) **Samples sent to national or international laboratories for confirmation (indicate the names of laboratories):**<br>10) **Published paper:** |
| 2 | **Mass Mortality of Tilapia**<br>1) **Origin of the disease or pathogen:** Unknown<br>2) **Species affected:** *Oreochromis niloticus*<br>3) **Disease characteristics**: Infection at the base of fin, reddish operculum, sometimes lesion on body surface, less appetite, sometimes without any external symptoms fish and fry dies.<br>4) **Pathogen:**<br>5) **Mortality rate:** 40-80%<br>6) **Death toll:** Unknown<br>7) **Size of infected areas or names of infected areas:** Mymensingh, Sylhet, Munshiganj and Dinajpur district<br>8) **Preventive/control measures taken:** Liming, water exchange, available commercial drugs<br>9) **Samples sent to national or international laboratories for confirmation (indicate the names of laboratories):**<br>10) **Published paper:** |
| 3 | |

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

**Country: HONG KONG SAR** **Period: January-March 2010**

| Item | Disease status [a/] | | | Level of diagnosis | Epidemiological comment numbers |
|---|---|---|---|---|---|
| **DISEASES PREVALENT IN THE REGION** | Month | | | | |
| **FINFISH DISEASES** | January | February | March | | |
| **OIE-listed diseases** | | | | | |
| 1. Epizootic haematopoietic necrosis | 0000 | 0000 | 0000 | II | |
| 2. Infectious haematopoietic necrosis | 0000 | 0000 | 0000 | III | |
| 3. Spring viraemia of carp | 0000 | 0000 | 0000 | III | |
| 4. Viral haemorrhagic septicaemia | 0000 | 0000 | 0000 | III | |
| 5. Epizootic ulcerative syndrome | 0000 | 0000 | 0000 | II | |
| 6. Red seabream iridoviral disease | - | - | - | III | |
| 7. Koi herpesvirus disease | - | - | - | III | |
| **Non OIE-listed diseases** | | | | | |
| 8.Grouper iridoviral disease | - | - | - | III | |
| 9.Viral encephalopathy and retinopathy | - | - | - | III | |
| 10.Enteric septicaemia of catfish | 0000 | 0000 | 0000 | II | |
| **MOLLUSC DISEASES** | | | | | |
| **OIE-listed diseases** | | | | | |
| 1. Infection with *Bonamia exitiosa* | 0000 | 0000 | 0000 | II | |
| 2. Infection with *Perkinsus olseni* | 0000 | 0000 | 0000 | II | |
| 3. Abalone viral mortality | 0000 | 0000 | 0000 | II | |
| **Non OIE-listed diseases** | | | | | |
| 4. Infection with *Marteilioides chungmuensis* | 0000 | 0000 | 0000 | II | |
| 5. Acute viral necrosis (in scallops) | 0000 | 0000 | 0000 | II | |
| 6.Akoya oyster disease | 0000 | 0000 | 0000 | II | |
| **CRUSTACEAN DISEASES** | | | | | |
| **OIE-listed diseases** | | | | | |
| 1. Taura syndrome | 0000 | 0000 | 0000 | III | |
| 2. White spot disease | - | - | - | III | |
| 3. Yellowhead disease | 0000 | 0000 | 0000 | III | |
| 4. Infectious hypodermal and haematopoietic necrosis | 0000 | 0000 | 0000 | II | |
| 5. Infectious myonecrosis | 0000 | 0000 | 0000 | II | |
| 6.White tail disease (MrNV) | 0000 | 0000 | 0000 | II | |
| **Non OIE-listed diseases** | | | | | |
| 7. Necrotising hepatopancreatitis | 0000 | 0000 | 0000 | II | |
| 8. *Monodon* slow growth syndrome | 0000 | 0000 | 0000 | II | |
| 9. Milky lobster disease | 0000 | 0000 | 0000 | II | |
| **AMPHIBIAN DISEASES** | | | | | |
| **OIE-listed diseases** | | | | | |
| 1. Infection with Ranavirus | 0000 | 0000 | 0000 | II | |
| 2. Infection with *Batrachochytrium dendrobatidis* | 0000 | 0000 | 0000 | II | |
| **ANY OTHER DISEASES OF IMPORTANCE** | | | | | |
| 1. | | | | | |
| 2. | | | | | |

**DISEASES PRESUMED EXOTIC TO THE REGION[b]**
**LISTED BY THE OIE**
**Finfish**: Infectious salmon anaemia; Gyrodactylosis (*Gyrodactylus salaris*).
**Molluscs**: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*; *Xenohaliotis californiensis*.
**Crustaceans:** Crayfish plague (*Aphanomyces astaci*).
**NOT LISTED BY THE OIE**
**Finfish**: Channel catfish virus disease

a/ Please use the following symbols:

| | | | |
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| | | (year) | Year of last occurrence |

b/ If there is suspicion or confirmation of any of these diseases, they must be reported immediately, because the region is considered free of these diseases

## 1. Epidemiological comments:

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

| Comment No. | |
|---|---|
| 1 | |
| 2 | |
| 3 | |

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

**Country: INDIA** **Period: January-March 2010**

| Item | Disease status [a/] | | | Level of diagnosis | Epidemiological comment numbers |
|---|---|---|---|---|---|
| **DISEASES PREVALENT IN THE REGION** | Month | | | | |
| **FINFISH DISEASES** | January | February | March | | |
| **OIE-listed diseases** | | | | | |
| 1. Epizootic haematopoietic necrosis | 0000 | 0000 | 0000 | | |
| 2. Infectious haematopoietic necrosis | 0000 | 0000 | 0000 | | |
| 3. Spring viraemia of carp | 0000 | 0000 | 0000 | | |
| 4. Viral haemorrhagic septicaemia | 0000 | 0000 | 0000 | | |
| 5. Epizootic ulcerative syndrome | - | - | - | | |
| 6. Red seabream iridoviral disease | 0000 | 0000 | 0000 | | |
| 7. Koi herpesvirus disease | 0000 | 0000 | 0000 | | |
| **Non OIE-listed diseases** | | | | | |
| 8.Grouper iridoviral disease | 0000 | 0000 | 0000 | | |
| 9.Viral encephalopathy and retinopathy | 0000 | 0000 | 0000 | | |
| 10.Enteric septicaemia of catfish | 0000 | 0000 | 0000 | | |
| **MOLLUSC DISEASES** | | | | | |
| **OIE-listed diseases** | | | | | |
| 1. Infection with *Bonamia exitiosa* | 0000 | 0000 | 0000 | | |
| 2. Infection with *Perkinsus olseni* | 0000 | 0000 | 0000 | | |
| 3. Abalone viral mortality | 0000 | 0000 | 0000 | | |
| **Non OIE-listed diseases** | | | | | |
| 4. Infection with *Marteilioides chungmuensis* | 0000 | 0000 | 0000 | | |
| 5. Acute viral necrosis (in scallops) | 0000 | 0000 | 0000 | | |
| 6.Akoya oyster disease | 0000 | 0000 | 0000 | | |
| **CRUSTACEAN DISEASES** | | | | | |
| **OIE-listed diseases** | | | | | |
| 1. Taura syndrome | 0000 | 0000 | 0000 | | |
| 2. White spot disease | - | - | - | | |
| 3. Yellowhead disease | *** | *** | *** | | |
| 4. Infectious hypodermal and haematopoietic necrosis | *** | *** | *** | | |
| 5. Infectious myonecrosis | 0000 | 0000 | 0000 | | |
| 6.White tail disease (MrNV) | - | - | - | | |
| **Non OIE-listed diseases** | | | | | |
| 7. Necrotising hepatopancreatitis | 0000 | 0000 | 0000 | | |
| 8. *Monodon* slow growth syndrome | 0000 | 0000 | 0000 | | |
| 9. Milky lobster disease | 0000 | 0000 | 0000 | | |
| **AMPHIBIAN DISEASES** | | | | | |
| **OIE-listed diseases** | | | | | |
| 1. Infection with Ranavirus | 0000 | 0000 | 0000 | | |
| 2. Infection with *Batrachochytrium dendrobatidis* | 0000 | 0000 | 0000 | | |
| **ANY OTHER DISEASES OF IMPORTANCE** | | | | | |
| 1. | | | | | |
| 2. | | | | | |

**DISEASES PRESUMED EXOTIC TO THE REGION[b]**
**LISTED BY THE OIE**
**Finfish**: Infectious salmon anaemia; Gyrodactylosis (*Gyrodactylus salaris*).
**Molluscs**: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*; *Xenohaliotis californiensis*.
**Crustaceans:** Crayfish plague (*Aphanomyces astaci*).
**NOT LISTED BY THE OIE**
**Finfish**: Channel catfish virus disease

a/ Please use the following symbols:

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

b/ If there is suspicion or confirmation of any of these diseases, they must be reported immediately, because the region is considered free of these diseases

**1. Epidemiological comments:**

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

| Comment No. | |
|---|---|
| 1 | |
| 2 | |
| 3 | |

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

**Country: INDONESIA** **Period: January-March 2010**

| Item | Disease status [a/] | | | Level of diagnosis | Epidemiological comment numbers |
|---|---|---|---|---|---|
| **DISEASES PREVALENT IN THE REGION** | Month | | | | |
| **FINFISH DISEASES** | January | February | March | | |
| **OIE-listed diseases** | | | | | |
| 1. Epizootic haematopoietic necrosis | 0000 | 0000 | 0000 | | |
| 2. Infectious haematopoietic necrosis | 0000 | 0000 | 0000 | | |
| 3. Spring viraemia of carp | 0000 | 0000 | 0000 | | |
| 4. Viral haemorrhagic septicaemia | 0000 | 0000 | 0000 | | |
| 5. Epizootic ulcerative syndrome | *** | *** | *** | | |
| 6. Red seabream iridoviral disease | 0000 | 0000 | 0000 | | |
| 7. Koi herpesvirus disease | + | + | + | | 1 |
| **Non OIE-listed diseases** | | | | | |
| 8.Grouper iridoviral disease | + | + | + | III | 2 |
| 9.Viral encephalopathy and retinopathy | + | + | + | III | 3 |
| 10.Enteric septicaemia of catfish | *** | *** | *** | | |
| **MOLLUSC DISEASES** | | | | | |
| **OIE-listed diseases** | | | | | |
| 1. Infection with *Bonamia exitiosa* | 0000 | 0000 | 0000 | | |
| 2. Infection with *Perkinsus olseni* | 0000 | 0000 | 0000 | | |
| 3. Abalone viral mortality | *** | *** | *** | | |
| **Non OIE-listed diseases** | | | | | |
| 4. Infection with *Marteilioides chungmuensis* | 0000 | 0000 | 0000 | | |
| 5. Acute viral necrosis (in scallops) | 0000 | 0000 | 0000 | | |
| 6.Akoya oyster disease | 0000 | 0000 | 0000 | | |
| **CRUSTACEAN DISEASES** | | | | | |
| **OIE-listed diseases** | | | | | |
| 1. Taura syndrome | + | + | + | III | 4 |
| 2. White spot disease | + | + | + | III | 5 |
| 3. Yellowhead disease | *** | *** | *** | | |
| 4. Infectious hypodermal and haematopoietic necrosis | + | + | + | III | 6 |
| 5. Infectious myonecrosis | + | + | + | III | 7 |
| 6.White tail disease (MrNV) | 0000 | 0000 | 0000 | | |
| **Non OIE-listed diseases** | | | | | |
| 7. Necrotising hepatopancreatitis | 0000 | 0000 | 0000 | | |
| 8. *Monodon* slow growth syndrome | 0000 | 0000 | 0000 | | |
| 9. Milky lobster disease | 0000 | 0000 | 0000 | | |
| **AMPHIBIAN DISEASES** | | | | | |
| **OIE-listed diseases** | | | | | |
| 1. Infection with Ranavirus | 0000 | 0000 | 0000 | | |
| 2. Infection with *Batrachochytrium dendrobatidis* | 0000 | 0000 | 0000 | | |
| **ANY OTHER DISEASES OF IMPORTANCE** | | | | | |
| 1. | | | | | |
| 2. | | | | | |

**DISEASES PRESUMED EXOTIC TO THE REGION[b]**
**LISTED BY THE OIE**
**Finfish**: Infectious salmon anaemia; Gyrodactylosis (*Gyrodactylus salaris*).
**Molluscs**: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*; *Xenohaliotis californiensis*.
**Crustaceans:** Crayfish plague (*Aphanomyces astaci*).
**NOT LISTED BY THE OIE**
**Finfish**: Channel catfish virus disease

a/ Please use the following symbols:

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

b/ If there is suspicion or confirmation of any of these diseases, they must be reported immediately, because the region is considered free of these diseases

## 1. Epidemiological comments:

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

| Comment No. | |
|---|---|
| 1 | **KHV**<br>1. There is no formal report from Provincial or District Officer, but known the disease still occur mostly in stagnant waters such as Maninjau Lake (West Sumatera), Toba Lake (Suth Sumatra), Cirata Dam (West Java), Jatiluhur Dam (West Java). At the present KHV did not cause economic loss significantly.<br>2. Species affected: Common carp (*Cyprinus carpio*)<br>3. Clinical sign:<br>4. Pathogen: Koi herpes virus<br>5. Mortality rate:<br>6. Economic loss: not significant<br>7. Names of infected areas:<br>8. Preventive/control measures:<br>9. Laboratory confirmation:<br>10. Not published |
| 2 | **GIV**<br>1. Species affected : Polkadot grouper (*Cromileptes altivelis*),Tiger grouper (*Ephinephilus fuscoguttatus*)<br>2. Clinical sign : abnormally swim at surface, no response, irritation at part of body, finding the giant cell at kidney, no clinical sign on some samples;<br>3. Pathogen : Grouper iridoviral disease;<br>4. Mortality rate: low (1%)<br>5. Economic loss: not significant<br>6. Names of infected areas: Lampung (Hurun Bay & Tanjung Putus), Batam<br>7. Preventive/controlmeasures:<br>8. Laboratory confirmation: DGA Technical Implementing Unit Laboratory by PCR<br>9. Not published |

| | |
|---|---|
| 3 | **VNN**<br>1. Diseases were found in seed phase<br>2. Species affected: tiger grouper (*Ephinephenelus fuscoguttatus*), Polkadot grouper (*Cromileptes altivelis*),<br>3. Clinical sign: abnormally swim at surface (spiral, whirling or belly – up rest), bad response<br>4. Pathogen: Viral Nervous Necrosis Virus<br>5. Mortality rate:<br>6. Economic loss: low to high<br>7. Names of infected areas: Situbondo (East Java), Lampung, Batam<br>8. Preventive/control measures:<br>9. Laboratory confirmation: DGA Technical Implementing Unit Laboratory by PCR<br>10. Not published |
| 4 | **TSV**<br>1. -<br>2. Species affected : White shrimp (*Litopeneaus vanamei*)<br>3. Clinical signs: mass mortality at the moulting shrimp<br>4. Pathogen : Taura Syndrome Virus<br>5. Economic loss : -<br>6. Mortality rate : -<br>7. Name of infected area: East Java (Situbondo, Banyuwangi), Buleleng (Bali), Lampung , West Nusa Tenggara<br>8. Preventive/control measures: Early harvest<br>9. Laboratory confirmation: DGA Technical Implementing Unit Laboratory by PCR<br>10. Not published |
| 5 | **WSSV**<br>1. -<br>2. Species affected: Tiger shrimp (*Penaeus monodon*), White shrimp (*Litopeneaus vanamei*)<br>3. Clinical sign: White spot on carapace, shrimp becoming weak and swimming on the surface and end of pond<br>4. Pathogen: White Spot Syndrome Virus (Whispovirus)<br>5. Mortality rate : high (100%)<br>6. Economis loss : -<br>7. Infected area: Jembrana (Bali), East Java (Lamongan, Pasuruan, Probolinggo)<br>8. Preventive/Control measures: Early harvest, Probiotic used<br>9. Laboratory confirmation: DGA Technical Implementing Unit Laboratory by PCR<br>10. Not published |
| 6 | **IHHNV**<br>1. -<br>2. Species affected: White shrimp (*Litopenaeus vannamei*)<br>3. Clinical sign: slow growth (very small size/dwarf)<br>4. Pathogen: Infectious Hypodermal and Haematophatic Necrosis Virus (Perpovirus)<br>5. Mortality rate: low<br>6. Economic loss : -<br>7. Name of infected area : Situbondo - East Java; Jepara – Central Java<br>8. Preventive/Control measures:<br>9. Laboratory confirmation: DGA Technical Implementing Unit Laboratory by PCR<br>10. Not published |

| | |
|---|---|
| 7 | **IMNV**<br>1. -<br>2. Species affected: White shrimp (*Litopeneaus vanamei*)<br>3. Clinical sign: broken at shrimp meat with white sign, specially at abdomen and telson, result of positive have been detected by PCR method<br>4. Pathogen: Infectious Myonecrosis Virus<br>5. Mortality rate: high (± 70%)<br>6. Economic loss:<br>7. Prevetive/Control measures taken: -<br>8. Infected area: Situbondo (East Java); Central Java (Jepara, Blora, Kendal, Rembang), Lampung, West Nusa Tenggara<br>9. Laboratory confirmation: DGA Technical Implementing Unit Laboratory by PCR<br>10. Not published |

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

**Country: JAPAN** **Period: January-March 2010**

| Item | Disease status [a/] | | | Level of diagnosis | Epidemiological comment numbers |
|---|---|---|---|---|---|
| **DISEASES PREVALENT IN THE REGION** | Month | | | | |
| **FINFISH DISEASES** | January | February | March | | |
| **OIE-listed diseases** | | | | | |
| 1. Epizootic haematopoietic necrosis | 0000 | 0000 | 0000 | I | |
| 2. Infectious haematopoietic necrosis | + | + | + | III | |
| 3. Spring viraemia of carp | 0000 | 0000 | 0000 | I | |
| 4. Viral haemorrhagic septicaemia | - | + | + | III | |
| 5. Epizootic ulcerative syndrome | - | - | - | I | |
| 6. Red seabream iridoviral disease | - | - | - | I | |
| 7. Koi herpesvirus disease | + | - | - | III | |
| **Non OIE-listed diseases** | | | | | |
| 8.Grouper iridoviral disease | 0000 | 0000 | 0000 | I | |
| 9.Viral encephalopathy and retinopathy | - | - | - | I | |
| 10.Enteric septicaemia of catfish | - | - | - | I | |
| **MOLLUSC DISEASES** | | | | | |
| **OIE-listed diseases** | | | | | |
| 1. Infection with *Bonamia exitiosa* | 0000 | 0000 | 0000 | I | |
| 2. Infection with *Perkinsus olseni* | - | - | - | I | |
| 3. Abalone viral mortality | 0000 | 0000 | 0000 | I | |
| **Non OIE-listed diseases** | | | | | |
| 4. Infection with *Marteilioides chungmuensis* | + | + | + | II | |
| 5. Acute viral necrosis (in scallops) | 0000 | 0000 | 0000 | I | |
| 6.Akoya oyster disease | - | - | - | I | |
| **CRUSTACEAN DISEASES** | | | | | |
| **OIE-listed diseases** | | | | | |
| 1. Taura syndrome | 0000 | 0000 | 0000 | I | |
| 2. White spot disease | - | - | - | I | |
| 3. Yellowhead disease | 0000 | 0000 | 0000 | I | |
| 4. Infectious hypodermal and haematopoietic necrosis | 0000 | 0000 | 0000 | I | |
| 5. Infectious myonecrosis | 0000 | 0000 | 0000 | I | |
| 6.White tail disease (MrNV) | 0000 | 0000 | 0000 | I | |
| **Non OIE-listed diseases** | | | | | |
| 7. Necrotising hepatopancreatitis | 0000 | 0000 | 0000 | I | |
| 8. *Monodon* slow growth syndrome | 0000 | 0000 | 0000 | I | |
| 9. Milky lobster disease | 0000 | 0000 | 0000 | I | |
| **AMPHIBIAN DISEASES** | | | | | |
| **OIE-listed diseases** | | | | | |
| 1. Infection with Ranavirus | - | - | - | I | |
| 2. Infection with *Batrachochytrium dendrobatidis* | - | - | - | I | |
| **ANY OTHER DISEASES OF IMPORTANCE** | | | | | |
| 1. | | | | | |
| 2. | | | | | |

**DISEASES PRESUMED EXOTIC TO THE REGION[b]**
**LISTED BY THE OIE**
**Finfish**: Infectious salmon anaemia; Gyrodactylosis (*Gyrodactylus salaris*).
**Molluscs**: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*; *Xenohaliotis californiensis*.
**Crustaceans:** Crayfish plague (*Aphanomyces astaci*).
**NOT LISTED BY THE OIE**
**Finfish**: Channel catfish virus disease

a/ Please use the following symbols:

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

b/ If there is suspicion or confirmation of any of these diseases, they must be reported immediately, because the region is considered free of these diseases

**1. Epidemiological comments:**

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

| Comment No. | |
|---|---|
| 1 | |
| 2 | |
| 3 | |

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

**Country: LAO PDR** **Period: January-March 2010**

| Item | Disease status [a/] | | | Level of diagnosis | Epidemiological comment numbers |
|---|---|---|---|---|---|
| **DISEASES PREVALENT IN THE REGION** | Month | | | | |
| **FINFISH DISEASES** | January | February | March | | |
| **OIE-listed diseases** | | | | | |
| 1. Epizootic haematopoietic necrosis | *** | *** | *** | | |
| 2. Infectious haematopoietic necrosis *** | *** | *** | *** | *** | |
| 3. Spring viraemia of carp | *** | *** | *** | | |
| 4. Viral haemorrhagic septicaemia | *** | *** | *** | | |
| 5. Epizootic ulcerative syndrome | *** | *** | *** | | |
| 6. Red seabream iridoviral disease | *** | *** | *** | | |
| 7. Koi herpesvirus disease | *** | *** | *** | | |
| **Non OIE-listed diseases** | | | | | |
| 8.Grouper iridoviral disease | | | | | |
| 9.Viral encephalopathy and retinopathy | | | | | |
| 10.Enteric septicaemia of catfish | | | | | |
| **MOLLUSC DISEASES** | | | | | |
| **OIE-listed diseases** | | | | | |
| 1. Infection with *Bonamia exitiosa* | | | | | |
| 2. Infection with *Perkinsus olseni* | | | | | |
| 3. Abalone viral mortality | | | | | |
| **Non OIE-listed diseases** | | | | | |
| 4. Infection with *Marteilioides chungmuensis* | | | | | |
| 5. Acute viral necrosis (in scallops) | | | | | |
| 6.Akoya oyster disease | | | | | |
| **CRUSTACEAN DISEASES** | | | | | |
| **OIE-listed diseases** | | | | | |
| 1. Taura syndrome | *** | *** | *** | | |
| 2. White spot disease | *** | *** | *** | | |
| 3. Yellowhead disease | *** | *** | *** | | |
| 4. Infectious hypodermal and haematopoietic necrosis | *** | *** | *** | | |
| 5. Infectious myonecrosis | *** | *** | *** | | |
| 6.White tail disease (MrNV) | *** | *** | *** | | |
| **Non OIE-listed diseases** | | | | | |
| 7. Necrotising hepatopancreatitis | | | | | |
| 8. *Monodon* slow growth syndrome | | | | | |
| 9. Milky lobster disease | | | | | |
| **AMPHIBIAN DISEASES** | | | | | |
| **OIE-listed diseases** | | | | | |
| 1. Infection with Ranavirus | | | | | |
| 2. Infection with *Batrachochytrium dendrobatidis* | | | | | |
| **ANY OTHER DISEASES OF IMPORTANCE** | | | | | |
| 1. | | | | | |
| 2. | | | | | |

**DISEASES PRESUMED EXOTIC TO THE REGION[b]**
**LISTED BY THE OIE**
**Finfish**: Infectious salmon anaemia; Gyrodactylosis (*Gyrodactylus salaris*).
**Molluscs**: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*; *Xenohaliotis californiensis*.
**Crustaceans:** Crayfish plague (*Aphanomyces astaci*).
**NOT LISTED BY THE OIE**
**Finfish**: Channel catfish virus disease

a/ Please use the following symbols:

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

b/ If there is suspicion or confirmation of any of these diseases, they must be reported immediately, because the region is considered free of these diseases

**1. Epidemiological comments:**

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

| Comment No. | |
|---|---|
| 1 | |
| 2 | |
| 3 | |

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

**Country: MALAYSIA** **Period: January-March 2010**

| Item | Disease status [a/] | | | Level of diagnosis | Epidemiological comment numbers |
|---|---|---|---|---|---|
| **DISEASES PREVALENT IN THE REGION** | Month | | | | |
| **FINFISH DISEASES** | January | February | March | | |
| **OIE-listed diseases** | | | | | |
| 1. Epizootic haematopoietic necrosis | 0000 | 0000 | 0000 | | |
| 2. Infectious haematopoietic necrosis | 0000 | 0000 | 0000 | | |
| 3. Spring viraemia of carp | 0000 | 0000 | 0000 | | |
| 4. Viral haemorrhagic septicaemia | 0000 | 0000 | 0000 | | |
| 5. Epizootic ulcerative syndrome | (1986) | (1986) | (1986) | | |
| 6. Red seabream iridoviral disease | - | - | - | | |
| 7. Koi herpesvirus disease | - | - | - | I,II,III | 1 |
| **Non OIE-listed diseases** | | | | | |
| 8.Grouper iridoviral disease | + | + | + | I,II,III | 2 |
| 9.Viral encephalopathy and retinopathy | - | - | - | | |
| 10.Enteric septicaemia of catfish | 0000 | 0000 | 0000 | | |
| **MOLLUSC DISEASES** | | | | | |
| **OIE-listed diseases** | | | | | |
| 1. Infection with *Bonamia exitiosa* | 0000 | 0000 | 0000 | | |
| 2. Infection with *Perkinsus olseni* | 0000 | 0000 | 0000 | | |
| 3. Abalone viral mortality | 0000 | 0000 | 0000 | | |
| **Non OIE-listed diseases** | | | | | |
| 4. Infection with *Marteilioides chungmuensis* | 0000 | 0000 | 0000 | | |
| 5. Acute viral necrosis (in scallops) | 0000 | 0000 | 0000 | | |
| 6.Akoya oyster disease | 0000 | 0000 | 0000 | | |
| **CRUSTACEAN DISEASES** | | | | | |
| **OIE-listed diseases** | | | | | |
| 1. Taura syndrome | - | - | - | III | 3 |
| 2. White spot disease | + | - | + | III | 4 |
| 3. Yellowhead disease | - | - | - | III | 5 |
| 4. Infectious hypodermal and haematopoietic necrosis | - | - | - | III | 6 |
| 5. Infectious myonecrosis | 0000 | 0000 | 0000 | | |
| 6.White tail disease (MrNV) | 0000 | 0000 | 0000 | | |
| **Non OIE-listed diseases** | | | | | |
| 7. Necrotising hepatopancreatitis | 0000 | 0000 | 0000 | | |
| 8. *Monodon* slow growth syndrome | 0000 | 0000 | 0000 | | |
| 9. Milky lobster disease | ? | ? | ? | | |
| **AMPHIBIAN DISEASES** | | | | | |
| **OIE-listed diseases** | | | | | |
| 1. Infection with Ranavirus | 0000 | 0000 | 0000 | | |
| 2. Infection with *Batrachochytrium dendrobatidis* | 0000 | 0000 | 0000 | | |
| **ANY OTHER DISEASES OF IMPORTANCE** | | | | | |
| 1. Streptococcal infection of Tilapia | + | + | + | I,II | 7 |
| 2. | | | | | |

**DISEASES PRESUMED EXOTIC TO THE REGION[b]**
**LISTED BY THE OIE**
**Finfish**: Infectious salmon anaemia; Gyrodactylosis (*Gyrodactylus salaris*).
**Molluscs**: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*; *Xenohaliotis californiensis*.
**Crustaceans:** Crayfish plague (*Aphanomyces astaci*).
**NOT LISTED BY THE OIE**
**Finfish**: Channel catfish virus disease

a/ Please use the following symbols:

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

b/ If there is suspicion or confirmation of any of these diseases, they must be reported immediately, because the region is considered free of these diseases

## 1. Epidemiological comments:

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

| Comment No. | |
|---|---|
| 1 | **Koi herpesvirus (KHV)**<br><br>No reported cases. |
| 2 | **Grouper iridoviral disease (GIV):**<br><br>1. PCR Grouper Iridoviral disease testing was done using IQ2000 kit in the ornamental fish sampled for exported purposes. Among the fish tested were as follows :<br>• Dwarf gouramy (DG)<br>• Red lyretail guppy (RLG)<br>• Red wagtail platy (RWP)<br>• Red wagtail swordtail (RWS)<br>• Red gold ramirezi (RGR)<br>• Harlequin rasbora (HR)<br>• Peppered corydoras (PC)<br>Seven samples were PCR positive (DG, RWP, RGR, HR, PC, RWS) for export to Australia. While another 14 samples (all tiger grouper) were PCR positive, but for Malaysian culture.<br><br>2. GIV was detected in NaFisH surveillance study sites at deep sea cages in Kedah. 60-80% of tiger grouper showed clinical signs of skin lesions especially scale drop and haemorrhages. The fish also having concurrent infection of high prevalence of *Pseudorhabdosynochus spp*, with multiple infection of *Vibrio spp* and *Pasteurella multocida*. The cause was suspected to be due to stress factors from primary parasites infestation. Freshwater treatment was done to the fish and farmers were advised to bury the dead fish in a proper way. |

| | |
|---|---|
| 3 | **Taura syndrome virus (TSV)**<br><br>1. TSV was not detected in all the samples sent to Lab Industrial Resources laboratory (LIR) for routine and monitoring purposes. All the samples were from sea catch frozen prawn.<br>2. No cases on reported PCR positive being detected although active surveillance was conducted by DOF in East Malaysia. |
| | **White Spot Syndrome Virus (WSSV)**<br><br>1. 1 of 20 samples in January was tested positive WSSV in an outbreak cases in Selangor. Clinical signs include white spot on the carapace in the 20-60 days of culture period shrimp. More than 50 ponds were affected and 60-80% mortality was observed in each pond. The moribund shrimp were sent to LIR lab for further diagnostic purposes.<br>2. 1 out of 76 sea catch frozen shrimp samples sent to the LIR lab for routine testing were tested positive WSSV.<br>3. No cases or PCR positive detected or reported besides active surveillance done by DOF in East Malaysia. |
| | **Yellow head disease (YHV)**<br><br>1. YHV was not detected in all the samples sent to Lab Industrial Resources laboratory (LIR) for routine and monitoring purposes.<br>2. No cases or PCR positive detected or reported besides active surveillance done by DOF in East Malaysia |
| | **Infectious hypodermal and haematopoietic necrosis virus (IHHNV)**<br><br>1. IHHNV was not reported or detected in all the sea catch frozen shrimp samples that sent to the LIR lab.<br>2. No cases or PCR positive detected or reported besides active surveillance done by DOF in East Malaysia |
| | **Streptococcal Infection in Tilapia**<br><br>Disease incidences were reported and samples taken were examined from two states Perlis and Perak by NaFisH, FRI, Batu Maung.<br>1. **Clinical Signs** – erratic, exophthalmia or other abnormal clinical signs of the eye and inflamed body region<br>2. **Pathogen** – *Streptococcus agalactiae*<br>3. **Mortality rate** - ± 2-4%<br>4. **Economic loss** –RM4,000.00 for the two farm<br>5. **Geographic extent** – in floating cages at Sg. Perak(river) and canal in Perlis<br>6. **Laboratory confirmation** – API 20E STREP<br>7. **Publications** : Lab reports made to farms |

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

**Country: MYANMAR** **Period: January-March 2010**

| Item | Disease status [a/] | | | Level of diagnosis | Epidemiological comment numbers |
|---|---|---|---|---|---|
| **DISEASES PREVALENT IN THE REGION** | Month | | | | |
| **FINFISH DISEASES** | January | February | March | | |
| **OIE-listed diseases** | | | | | |
| 1. Epizootic haematopoietic necrosis | *** | *** | *** | | |
| 2. Infectious haematopoietic necrosis | *** | *** | *** | | |
| 3. Spring viraemia of carp | *** | *** | *** | | |
| 4. Viral haemorrhagic septicaemia | *** | *** | *** | | |
| 5. Epizootic ulcerative syndrome | *** | *** | *** | | |
| 6. Red seabream iridoviral disease | *** | *** | *** | | |
| 7. Koi herpesvirus disease | | | | | |
| **Non OIE-listed diseases** | | | | | |
| 8.Grouper iridoviral disease | *** | *** | *** | | |
| 9.Viral encephalopathy and retinopathy | *** | *** | *** | | |
| 10.Enteric septicaemia of catfish | *** | *** | *** | | |
| **MOLLUSC DISEASES** | | | | | |
| **OIE-listed diseases** | | | | | |
| 1. Infection with *Bonamia exitiosa* | | | | | |
| 2. Infection with *Perkinsus olseni* | | | | | |
| 3. Abalone viral mortality | | | | | |
| **Non OIE-listed diseases** | | | | | |
| 4. Infection with *Marteilioides chungmuensis* | | | | | |
| 5. Acute viral necrosis (in scallops) | | | | | |
| 6.Akoya oyster disease | | | | | |
| **CRUSTACEAN DISEASES** | | | | | |
| **OIE-listed diseases** | | | | | |
| 1. Taura syndrome | +() | - | - | III | 1 |
| 2. White spot disease | +() | - | - | III | 2 |
| 3. Yellowhead disease | - | - | - | III | |
| 4. Infectious hypodermal and haematopoietic necrosis | +() | - | - | III | 3 |
| 5. Infectious myonecrosis | *** | *** | *** | | |
| 6.White tail disease (MrNV) | *** | *** | *** | | |
| **Non OIE-listed diseases** | | | | | |
| 7. Necrotising hepatopancreatitis | *** | *** | *** | | |
| 8. *Monodon* slow growth syndrome | *** | *** | *** | | |
| 9. Milky lobster disease | *** | *** | *** | | |
| **AMPHIBIAN DISEASES** | | | | | |
| **OIE-listed diseases** | | | | | |
| 1. Infection with Ranavirus | | | | | |
| 2. Infection with *Batrachochytrium dendrobatidis* | | | | | |
| **ANY OTHER DISEASES OF IMPORTANCE** | | | | | |
| 1. | | | | | |
| 2. | | | | | |

**DISEASES PRESUMED EXOTIC TO THE REGION[b]**
**LISTED BY THE OIE**
**Finfish**: Infectious salmon anaemia; Gyrodactylosis (*Gyrodactylus salaris*).
**Molluscs**: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*; *Xenohaliotis californiensis*.
**Crustaceans:** Crayfish plague (*Aphanomyces astaci*).
**NOT LISTED BY THE OIE**
**Finfish**: Channel catfish virus disease

a/ Please use the following symbols:

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

b/ If there is suspicion or confirmation of any of these diseases, they must be reported immediately, because the region is considered free of these diseases

**1. Epidemiological comments:**

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

| Comment No. | |
|---|---|
| 1 | A total of 40 samples of *P. monodon* have been tested at PCR Lab of Department of Fisheries (DOF). Only 4 samples (10%) were found positive for TSV. The samples were taken at Ayeyarwaddy Division, western part of Myanmar. |
| 2 | A total of 40 samples of *P. monodon* have been tested at PCR Lab of Department of Fisheries (DOF). Only 2 samples (5%) were found positive for WSSV. The samples were taken at Ayeyarwaddy Division, western part of Myanmar. |
| 3 | A total of 40 samples of *P. monodon* have been tested at PCR Lab of Department of Fisheries (DOF). Only 1 sample (2.5%) were found positive for IHHNV. The samples were taken at Ayeyarwaddy Division, western part of Myanmar. |
| Additional Comments | The few virus found on the above samples was due to climate change (cool season) during this period (January to March), thus changes in water parameters and pond environment.<br><br>In mid-March, mass fish die-off was reported in Twantay township, Yangon Division. Temperature of the rearing water in fish ponds were beyond suitable range and the dissolved oxygen was only 1 ppm. No disease signs were observed on the fish samples, and no pathogen detected on both fish and water samples sent for diagnosis at our DOF Laboratory. |

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

**Country: NEPAL** **Period: January-March 2010**

| Item | Disease status [a/] | | | Level of diagnosis | Epidemiological comment numbers |
|---|---|---|---|---|---|
| **DISEASES PREVALENT IN THE REGION** | Month | | | | |
| **FINFISH DISEASES** | January | February | March | | |
| **OIE-listed diseases** | | | | | |
| 1. Epizootic haematopoietic necrosis | *** | *** | *** | | |
| 2. Infectious haematopoietic necrosis | *** | *** | *** | | |
| 3. Spring viraemia of carp | *** | *** | *** | | |
| 4. Viral haemorrhagic septicaemia | *** | *** | *** | | |
| 5. Epizootic ulcerative syndrome | *** | *** | *** | | |
| 6. Red seabream iridoviral disease | *** | *** | *** | | |
| 7. Koi herpesvirus disease | *** | *** | *** | | |
| **Non OIE-listed diseases** | | | | | |
| 8.Grouper iridoviral disease | *** | *** | *** | | |
| 9.Viral encephalopathy and retinopathy | *** | *** | *** | | |
| 10.Enteric septicaemia of catfish | *** | *** | *** | | |
| **MOLLUSC DISEASES** | | | | | |
| **OIE-listed diseases** | | | | | |
| 1. Infection with *Bonamia exitiosa* | 0000 | 0000 | 0000 | | |
| 2. Infection with *Perkinsus olseni* | 0000 | 0000 | 0000 | | |
| 3. Abalone viral mortality | 0000 | 0000 | 0000 | | |
| **Non OIE-listed diseases** | | | | | |
| 4. Infection with *Marteilioides chungmuensis* | 0000 | 0000 | 0000 | | |
| 5. Acute viral necrosis (in scallops) | 0000 | 0000 | 0000 | | |
| 6.Akoya oyster disease | 0000 | 0000 | 0000 | | |
| **CRUSTACEAN DISEASES** | | | | | |
| **OIE-listed diseases** | | | | | |
| 1. Taura syndrome | 0000 | 0000 | 0000 | | |
| 2. White spot disease | 0000 | 0000 | 0000 | | |
| 3. Yellowhead disease | 0000 | 0000 | 0000 | | |
| 4. Infectious hypodermal and haematopoietic necrosis | 0000 | 0000 | 0000 | | |
| 5. Infectious myonecrosis | 0000 | 0000 | 0000 | | |
| 6.White tail disease (MrNV) | 0000 | 0000 | 0000 | | |
| **Non OIE-listed diseases** | | | | | |
| 7. Necrotising hepatopancreatitis | 0000 | 0000 | 0000 | | |
| 8. *Monodon* slow growth syndrome | 0000 | 0000 | 0000 | | |
| 9. Milky lobster disease | 0000 | 0000 | 0000 | | |
| **AMPHIBIAN DISEASES** | | | | | |
| **OIE-listed diseases** | | | | | |
| 1. Infection with Ranavirus | 0000 | 0000 | 0000 | | |
| 2. Infection with *Batrachochytrium dendrobatidis* | 0000 | 0000 | 0000 | | |
| **ANY OTHER DISEASES OF IMPORTANCE** | | | | | |
| 1. | | | | | |
| 2. | | | | | |

**DISEASES PRESUMED EXOTIC TO THE REGION[b]**
**LISTED BY THE OIE**
**Finfish**: Infectious salmon anaemia; Gyrodactylosis (*Gyrodactylus salaris*).
**Molluscs**: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*; *Xenohaliotis californiensis*.
**Crustaceans:** Crayfish plague (*Aphanomyces astaci*).
**NOT LISTED BY THE OIE**
**Finfish**: Channel catfish virus disease

a/ Please use the following symbols:

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

b/ If there is suspicion or confirmation of any of these diseases, they must be reported immediately, because the region is considered free of these diseases

**1. Epidemiological comments:**

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

| Comment No. | |
|---|---|
| 1 | |
| 2 | |
| 3 | |

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

**Country: PHILIPPINES** **Period: January-March 2010**

| Item | Disease status [a/] | | | Level of diagnosis | Epidemiological comment numbers |
|---|---|---|---|---|---|
| **DISEASES PREVALENT IN THE REGION** | Month | | | | |
| **FINFISH DISEASES** | January | February | March | | |
| **OIE-listed diseases** | | | | | |
| 1. Epizootic haematopoietic necrosis | 0000 | 0000 | 0000 | | |
| 2. Infectious haematopoietic necrosis | 0000 | 0000 | 0000 | | |
| 3. Spring viraemia of carp | 0000 | 0000 | 0000 | | |
| 4. Viral haemorrhagic septicaemia | 0000 | 0000 | 0000 | | |
| 5. Epizootic ulcerative syndrome | - | - | - | | |
| 6. Red seabream iridoviral disease | *** | *** | *** | | |
| 7. Koi herpesvirus disease | 0000 | 0000 | 0000 | III | 1 |
| **Non OIE-listed diseases** | | | | | |
| 8.Grouper iridoviral disease | - | - | - | III | 2 |
| 9.Viral encephalopathy and retinopathy | - | - | - | III | 3 |
| 10.Enteric septicaemia of catfish | *** | *** | *** | | |
| **MOLLUSC DISEASES** | | | | | |
| **OIE-listed diseases** | | | | | |
| 1. Infection with *Bonamia exitiosa* | 0000 | 0000 | 0000 | | |
| 2. Infection with *Perkinsus olseni* | 0000 | 0000 | 0000 | | |
| 3. Abalone viral mortality | *** | *** | *** | | |
| **Non OIE-listed diseases** | | | | | |
| 4. Infection with *Marteilioides chungmuensis* | 0000 | 0000 | 0000 | | |
| 5. Acute viral necrosis (in scallops) | *** | *** | *** | | |
| 6.Akoya oyster disease | *** | *** | *** | | |
| **CRUSTACEAN DISEASES** | | | | | |
| **OIE-listed diseases** | | | | | |
| 1. Taura syndrome | 0000 | 0000 | 0000 | III | 4 |
| 2. White spot disease | - | + | + | III | 5 |
| 3. Yellowhead disease | - | - | - | III | 6 |
| 4. Infectious hypodermal and haematopoietic necrosis | + | + | + | III | 7 |
| 5. Infectious myonecrosis | 0000 | 0000 | 0000 | III | 8 |
| 6.White tail disease (MrNV) | *** | *** | *** | | |
| **Non OIE-listed diseases** | | | | | |
| 7. Necrotising hepatopancreatitis | 0000 | 0000 | 0000 | III | 9 |
| 8. *Monodon* slow growth syndrome | *** | *** | *** | | |
| 9. Milky lobster disease | *** | *** | *** | | |
| **AMPHIBIAN DISEASES** | | | | | |
| **OIE-listed diseases** | | | | | |
| 1. Infection with Ranavirus | *** | *** | *** | | |
| 2. Infection with *Batrachochytrium dendrobatidis* | *** | *** | *** | | |
| **ANY OTHER DISEASES OF IMPORTANCE** | | | | | |
| 1. | | | | | |
| 2. | | | | | |

**DISEASES PRESUMED EXOTIC TO THE REGION[b]**
**LISTED BY THE OIE**
**Finfish**: Infectious salmon anaemia; Gyrodactylosis (*Gyrodactylus salaris*).
**Molluscs**: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*; *Xenohaliotis californiensis*.
**Crustaceans:** Crayfish plague (*Aphanomyces astaci*).
**NOT LISTED BY THE OIE**
**Finfish**: Channel catfish virus disease

a/ Please use the following symbols:

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

b/ If there is suspicion or confirmation of any of these diseases, they must be reported immediately, because the region is considered free of these diseases

## 1. Epidemiological comments:

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

| Comment No. | |
|---|---|
| 1 | Thirteen (13) pieces of koi carp (*Cyprinus carpio koi*) were collected for analysis during the first quarter of 2010 and all samples showed a negative result for Koi Herpesvirus through PCR test. Ten (10) samples out of the total thirteen (13) were collected from a koi shop in Quezon City and the remaining three (3) samples were collected from the National Fisheries Biological Center (NFBC) of the National Fisheries Research and Development Institute (NFRDI) in Botong, Lemery, Batangas. Examinations/tests were conducted by the BFAR Central Office Fish Health Laboratory. |
| 2 | Four (4) samples of grouper (*Epinephelus spp*.) were collected from Silanguin, San Antonio, Zambales and all samples showed a negative result for Grouper Iridovirus. Examinations/tests were conducted by the BFAR Central Office Fish Health Laboratory. |
| 3 | All four (4) samples of grouper (*Epinephelus spp*.) collected from Silanguin, San Antonio, Zambales showed a negative result for Viral Encephalopathy and Retinopathy Virus using PCR test. Examinations/tests were conducted by the BFAR Central Office Fish Health Laboratory. |
| 4 | Twenty-six (26) samples were collected from Batangas, Zambales and Davao del Sur and all samples showed a negative result for Taura Syndrome Virus. There were twenty-five (25) samples of *Peneaus vannamei* and one (1) sample of *Peneaus monodon* of different stages (broodstock, fry, juvenile and adult) that were examined through PCR test. Examinations/tests were conducted by the BFAR Central Office Fish Health Laboratory. |
| 5 | A total of forty-four (44) samples (10 *Peneaus monodon*; 30 *Peneaus vannamei*; 4 *Panulirus ornatus*) of different stages (broodstock, fry, juvenile and adult) were analyzed using the PCR test. The different samples were collected from Batangas, Zambales, Bulacan, Sorsogon, Palawan, Roxas City, Iloilo, Cebu, and Davao del Sur. Three (3) out of the forty-four (44) collected samples showed a positive result for White Spot Syndrome Virus (1 *Peneaus monodon* from Sorsogon; 2 *Panulirus ornatus* from Palawan). Examinations/tests were conducted by the BFAR Central Office Fish Health Laboratory. |

| | |
|---|---|
| 6 | Twenty-five (25) samples (4 *Peneaus monodon*; 21 *Peneaus vannamei*) of different stages (broodstock, fry, juvenile and adult) were analyzed using PCR test and all samples showed a negative result for Yellowhead Virus. The samples were collected from Batangas, Zambales, Cebu, Sorsogon, Roxas City, Iloilo and Davao del Sur. Examinations/tests were conducted by the BFAR Central Office Fish Health Laboratory. |
| 7 | There were twenty-nine (29) samples (20 *Peneaus vannamei*; 9 *Peneaus monodon*) of different stages (broodstock, fry, juvenile and adult) that were collected and analyzed using PCR test. The samples were collected from Batangas, Zambales, Bulacan, Sorsogon, Roxas City, Iloilo, Cebu, and Davao del Sur. Five (5) out of the twenty-nine (29) samples (2 *Peneaus vannamei* from Zambales; 2 *Peneaus monodon* from Batangas; and 1 *Peneaus monodon* from Sorsogon) showed a positive result for Infectious Hypodermal and Haematopoietic Necrosis Virus. Examinations/tests were conducted by the BFAR Central Office Fish Health Laboratory. |
| 8 | A total of twenty-one (21) samples of *Peneaus vannamei* of different stages (broodstock, fry, juvenile and adult) were collected from Batangas, Zambales and Davao del Sur. All twenty-one (21) samples showed a negative result for Infectious Myonecrosis Virus through PCR test. Examinations/tests were conducted by the BFAR Central Office Fish Health Laboratory. |
| 9 | Twenty-one (21) samples of *Peneaus vannamei* of different stages (broodstock, fry, juvenile and adult) were collected from Batangas, Zambales, and Davao del Sur. All twenty-one (21) samples showed a negative result for Necrotising Hepatopancreatitis Virus using PCR test. Examinations/tests were conducted by the BFAR Central Office Fish Health Laboratory. |

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

## Country: SINGAPORE Period: January-March 2010

| Item | Disease status [a/] | | | Level of diagnosis | Epidemiological comment numbers |
|---|---|---|---|---|---|
| **DISEASES PREVALENT IN THE REGION** | Month | | | | |
| **FINFISH DISEASES** | January | February | March | | |
| **OIE-listed diseases** | | | | | |
| 1. Epizootic haematopoietic necrosis | 0000 | 0000 | 0000 | | |
| 2. Infectious haematopoietic necrosis | 0000 | 0000 | 0000 | | |
| 3. Spring viraemia of carp | 0000 | 0000 | 0000 | | |
| 4. Viral haemorrhagic septicaemia | 0000 | 0000 | 0000 | | |
| 5. Epizootic ulcerative syndrome | 0000 | 0000 | 0000 | | |
| 6. Red seabream iridoviral disease | 0000 | 0000 | 0000 | | |
| 7. Koi herpesvirus disease | (2007) | +? | (2010) | III | 1 |
| **Non OIE-listed diseases** | | | | | |
| 8.Grouper iridoviral disease | - | + | + | II & III | 2 |
| 9.Viral encephalopathy and retinopathy | - | - | - | | |
| 10.Enteric septicaemia of catfish | 0000 | 0000 | 0000 | | |
| **MOLLUSC DISEASES** | | | | | |
| **OIE-listed diseases** | | | | | |
| 1. Infection with *Bonamia exitiosa* | *** | *** | *** | | |
| 2. Infection with *Perkinsus olseni* | *** | *** | *** | | |
| 3. Abalone viral mortality | *** | *** | *** | | |
| **Non OIE-listed diseases** | | | | | |
| 4. Infection with *Marteilioides chungmuensis* | *** | *** | *** | | |
| 5. Acute viral necrosis (in scallops) | *** | *** | *** | | |
| 6.Akoya oyster disease | *** | *** | *** | | |
| **CRUSTACEAN DISEASES** | | | | | |
| **OIE-listed diseases** | | | | | |
| 1. Taura syndrome | *** | *** | *** | | |
| 2. White spot disease | (2004) | + | (2010) | III | 3 |
| 3. Yellowhead disease | *** | *** | *** | | |
| 4. Infectious hypodermal and haematopoietic necrosis | *** | *** | *** | | |
| 5. Infectious myonecrosis | *** | *** | *** | | |
| 6.White tail disease (MrNV) | *** | *** | *** | | |
| **Non OIE-listed diseases** | | | | | |
| 7. Necrotising hepatopancreatitis | *** | *** | *** | | |
| 8. *Monodon* slow growth syndrome | *** | *** | *** | | |
| 9. Milky lobster disease | *** | *** | *** | | |
| **AMPHIBIAN DISEASES** | | | | | |
| **OIE-listed diseases** | | | | | |
| 1. Infection with Ranavirus | *** | *** | *** | | |
| 2. Infection with *Batrachochytrium dendrobatidis* | *** | *** | *** | | |
| **ANY OTHER DISEASES OF IMPORTANCE** | | | | | |
| 1. Mullet systemic iridoviral disease | (2008) | (2008) | (2008) | | |
| 2. Sea Bass Iridovirus | 0000 | 0000 | + | II & III | 2 |

**DISEASES PRESUMED EXOTIC TO THE REGION[b]**
**LISTED BY THE OIE**
**Finfish**: Infectious salmon anaemia; Gyrodactylosis (*Gyrodactylus salaris*).
**Molluscs**: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*; *Xenohaliotis californiensis*.
**Crustaceans:** Crayfish plague (*Aphanomyces astaci*).
**NOT LISTED BY THE OIE**
**Finfish**: Channel catfish virus disease

a/ Please use the following symbols:

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

b/ If there is suspicion or confirmation of any of these diseases, they must be reported immediately, because the region is considered free of these diseases

**1. Epidemiological comments:**

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

| Comment No. | |
|---|---|
| 1 | Koi Herpesvirus (KHV) was not detected in 31 batches during routine surveillance of imported and locally farmed koi in this quarter. One batch of clinically normal koi at a local farm sampled on 23 February 2010 during routine surveillance tested positive for KHV by real-time PCR using KHV86f and 163r and probe 109p. This was confirmed by conventional PCR methods. No CPE was observed on KF-1 cell line. The batch of koi was subsequently culled, the premise placed under quarantine and in-contact equipment was disinfected. Subsequent inspection, sampling and testing of 29 batches of koi from the premise tested negative for KHV by real-time PCR. |
| 2 | Systemic iridoviral disease was observed in one batch of seabass and three batches of grouper sampled from 2 land-based and 1 floating net cage farms. Moderate to high mortalities were observed in the farms. The fish were lethargic with darkened bodies and splenomegaly. Histopathological observations of viral inclusion bodies in all major organs are consistent with a systemic iridoviral disease. Mortality was controlled with measures to reduce stress in the fish on the farms. |
| 3 | Two batches of ornamental crayfish imported from Indonesia were sampled from an investigation following a notification on 9 February 2010 by DEFRA, UK of White Spot Syndrome Virus (WSSV) detection in a batch of crayfish seized in December 2009. WSSV was detected by PCR in both batches of crayfish confirmed by subsequent sequencing of the PCR amplicon. WSSV was also detected in 5 out of 8 batches of crayfish in subsequent crayfish imports from Indonesia while in quarantine. All crayfish on the premise were culled and the in-contact equipment was disinfected. Importers were discouraged from importing from infected sources. |

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

**Country: SRI LANKA** **Period: January-March 2010**

| Item | Disease status [a/] | | | Level of diagnosis | Epidemiological comment numbers |
|---|---|---|---|---|---|
| **DISEASES PREVALENT IN THE REGION** | Month | | | | |
| **FINFISH DISEASES** | January | February | March | | |
| **OIE-listed diseases** | | | | | |
| 1. Epizootic haematopoietic necrosis | *** | *** | *** | | |
| 2. Infectious haematopoietic necrosis | *** | *** | *** | | |
| 3. Spring viraemia of carp | ? | ? | ? | | |
| 4. Viral haemorrhagic septicaemia | 0000 | 0000 | 0000 | | |
| 5. Epizootic ulcerative syndrome | - | - | - | | |
| 6. Red seabream iridoviral disease | 0000 | 0000 | 0000 | | |
| 7. Koi herpesvirus disease | 0000 | 0000 | 0000 | | |
| **Non OIE-listed diseases** | | | | | |
| 8.Grouper iridoviral disease | *** | *** | *** | | |
| 9.Viral encephalopathy and retinopathy | *** | *** | *** | | |
| 10.Enteric septicaemia of catfish | *** | *** | *** | | |
| **MOLLUSC DISEASES** | | | | | |
| **OIE-listed diseases** | | | | | |
| 1. Infection with *Bonamia exitiosa* | *** | *** | *** | | |
| 2. Infection with *Perkinsus olseni* | *** | *** | *** | | |
| 3. Abalone viral mortality | 0000 | 0000 | 0000 | | |
| **Non OIE-listed diseases** | | | | | |
| 4. Infection with *Marteilioides chungmuensis* | *** | *** | *** | | |
| 5. Acute viral necrosis (in scallops) | *** | *** | *** | | |
| 6.Akoya oyster disease | 0000 | 0000 | 0000 | | |
| **CRUSTACEAN DISEASES** | | | | | |
| **OIE-listed diseases** | | | | | |
| 1. Taura syndrome | 0000 | 0000 | 0000 | | |
| 2. White spot disease | + | + | + | III | 1 |
| 3. Yellowhead disease | *** | *** | *** | | |
| 4. Infectious hypodermal and haematopoietic necrosis | + | + | + | III | 2 |
| 5. Infectious myonecrosis | *** | *** | *** | | |
| 6.White tail disease (MrNV) | *** | *** | *** | | |
| **Non OIE-listed diseases** | | | | | |
| 7. Necrotising hepatopancreatitis | *** | *** | *** | | |
| 8. *Monodon* slow growth syndrome | *** | *** | *** | | |
| 9. Milky lobster disease | *** | *** | *** | | |
| **AMPHIBIAN DISEASES** | | | | | |
| **OIE-listed diseases** | | | | | |
| 1. Infection with Ranavirus | 0000 | 0000 | 0000 | | |
| 2. Infection with *Batrachochytrium dendrobatidis* | 0000 | 0000 | 0000 | | |
| **ANY OTHER DISEASES OF IMPORTANCE** | | | | | |
| 1. | | | | | |
| 2. | | | | | |

**DISEASES PRESUMED EXOTIC TO THE REGION[b]**
**LISTED BY THE OIE**
**Finfish**: Infectious salmon anaemia; Gyrodactylosis (*Gyrodactylus salaris*).
**Molluscs**: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*; *Xenohaliotis californiensis*.
**Crustaceans:** Crayfish plague (*Aphanomyces astaci*).
**NOT LISTED BY THE OIE**
**Finfish**: Channel catfish virus disease

a/ Please use the following symbols:

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

b/ If there is suspicion or confirmation of any of these diseases, they must be reported immediately, because the region is considered free of these diseases

**1. Epidemiological comments:**

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

| Comment No. | |
|---|---|
| 1 | **WSSV**<br><br>A total of 505 *P .monodon* wild brooder samples were tested using the IQ2000 two-step PCR method for the presence of WSSV, the prevalence was 35%, which indicated a considerable contamination of wild brooders collected from different locations around Sri Lanka. As Sri Lanka is depending solely on wild brooders as the source of postlarvae production, it is becoming a problem for the shrimp breeders. However a screening programme for brooders is active in Sri Lanka as one of the disease management strategies to avoid WSSV infected postlarvae being produced.<br><br>The prevalence of WSSV in postlarvae samples obtained from shrimp hatcheries were 10%, which is low compared to the wild brooders.<br><br>A farm area of 2.2 ha were infected with WSSV (2 farms) in Kalpitiya area. The operated area was 502.4 ha for this period.<br><br>The above data were derived from private laboratories located in North Western Province and from the National Aquatic Resources Research and Development Agency (NARA) and from the Shrimp Farm Extension and Monitoring Unit at Bathtuluoya (NAQDA). |
| 2 | **IHHNV**<br><br>Out of 30 *P. monodon* postlarvae tested for IHHNV, 70% prevalence was observed, and of 45 brooder samples the prevalence was 58%. Sub-adult samples collected from the grow out farms showed 45% prevalence. Data derived from NARA, head office Colombo 15. |
| 3 | |

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

**Country: THAILAND** **Period: January-March 2010**

| Item | Disease status [a/] | | | Level of diagnosis | Epidemiological comment numbers |
|---|---|---|---|---|---|
| **DISEASES PREVALENT IN THE REGION** | Month | | | | |
| **FINFISH DISEASES** | January | February | March | | |
| **OIE-listed diseases** | | | | | |
| 1. Epizootic haematopoietic necrosis | 0000 | 0000 | 0000 | III | |
| 2. Infectious haematopoietic necrosis | 0000 | 0000 | 0000 | III | |
| 3. Spring viraemia of carp | 0000 | 0000 | 0000 | III | |
| 4. Viral haemorrhagic septicaemia | 0000 | 0000 | 0000 | III | |
| 5. Epizootic ulcerative syndrome | (2009) | (2009) | (2009) | II | |
| 6. Red seabream iridoviral disease | 0000 | 0000 | 0000 | III | |
| 7. Koi herpesvirus disease | + | - | - | III | 1 |
| **Non OIE-listed diseases** | | | | | |
| 8.Grouper iridoviral disease | - | - | - | III | |
| 9.Viral encephalopathy and retinopathy | - | - | - | III | |
| 10.Enteric septicaemia of catfish | 0000 | 0000 | 0000 | II | |
| **MOLLUSC DISEASES** | | | | | |
| **OIE-listed diseases** | | | | | |
| 1. Infection with *Bonamia exitiosa* | 0000 | 0000 | 0000 | II | |
| 2. Infection with *Perkinsus olseni* | 0000 | 0000 | 0000 | II | |
| 3. Abalone viral mortality | 0000 | 0000 | 0000 | II | |
| **Non OIE-listed diseases** | | | | | |
| 4. Infection with *Marteilioides chungmuensis* | 0000 | 0000 | 0000 | II | |
| 5. Acute viral necrosis (in scallops) | *** | *** | *** | | |
| 6.Akoya oyster disease | *** | *** | *** | | |
| **CRUSTACEAN DISEASES** | | | | | |
| **OIE-listed diseases** | | | | | |
| 1. Taura syndrome | + | + | + | III | 2 |
| 2. White spot disease | + | + | + | III | 3 |
| 3. Yellowhead disease | - | + | - | III | 4 |
| 4. Infectious hypodermal and haematopoietic necrosis | + | + | + | III | 5 |
| 5. Infectious myonecrosis | 0000 | 0000 | 0000 | III | |
| 6.White tail disease (MrNV) | + | - | + | | 6 |
| **Non OIE-listed diseases** | | | | | |
| 7. Necrotising hepatopancreatitis | *** | *** | *** | | |
| 8. *Monodon* slow growth syndrome | 0000 | 0000 | 0000 | II | |
| 9. Milky lobster disease | *** | *** | *** | | |
| **AMPHIBIAN DISEASES** | | | | | |
| **OIE-listed diseases** | | | | | |
| 1. Infection with Ranavirus | (2007) | (2007) | (2007) | III | |
| 2. Infection with *Batrachochytrium dendrobatidis* | 0000 | 0000 | 0000 | II | |
| **ANY OTHER DISEASES OF IMPORTANCE** | | | | | |
| 1. | | | | | |
| 2. | | | | | |

**DISEASES PRESUMED EXOTIC TO THE REGION[b]**
**LISTED BY THE OIE**
**Finfish**: Infectious salmon anaemia; Gyrodactylosis (*Gyrodactylus salaris*).
**Molluscs**: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*; *Xenohaliotis californiensis*.
**Crustaceans:** Crayfish plague (*Aphanomyces astaci*).
**NOT LISTED BY THE OIE**
**Finfish**: Channel catfish virus disease

a/ Please use the following symbols:

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

b/ If there is suspicion or confirmation of any of these diseases, they must be reported immediately, because the region is considered free of these diseases

## 1. Epidemiological comments:

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

| Comment No. | |
|---|---|
| 1 | One koi import shipment, 506 kois (fancy carp), was found to be infected by KHV in a quarantine house of an importing company in Bangkok. All kois were destroyed. The KHV was diagnosed at the Inland Aquatic Animal Health Research Institute (AAHRI), Department of Fisheries. The disease was limited only in the quarantine house. The quarantine house was disinfected and cleaned. The competent authority of the exporting country was informed for further investigation.<br><br>The KHV disease occurred in a private house in Chainat province that kept the kois as pet. The kois exhibited clinical signs of the KHVD. Mortality rate was high, 190 out of 200 kois died within 2 weeks. Four diseased kois were submitted to AAHRI, for which the KHVD was confirmed using PCR detection technique. The others 6 diseased kois were destroyed and the concrete pond and water were disinfected and cleaned. |
| 2 | A total of 438 shrimp samples from shrimp farms had been tested at PCR Laboratories of the DOF under active surveillance. 8 specimens or 1.8 % recorded as PCR positive or carrying TSV genes. Shrimp farms with positive testing results will be subjected to health improvement, movement control, eradication and/or farm disinfection. |
| 3 | A total of 438 shrimp samples from shrimp farms had been tested at PCR Laboratories of the DOF under active surveillance. 9 specimens or 2.0 % recorded as PCR positive or carrying WSSV genes. Shrimp farms with positive testing results will be subjected to health improvement, movement control, eradication and/or farm disinfection. |
| 4 | A total of 438 shrimp samples from shrimp farms had been tested at PCR Laboratories of the DOF under active surveillance. One specimen or 0.2 % recorded as RT-PCR positive or carrying YHV genes. Shrimp farms with positive testing results will be subjected to health improvement, movement control, eradication and/or farm disinfection. |

| | |
|---|---|
| 5 | A total of 378 shrimp samples from shrimp farms had been tested at PCR Laboratories of the DOF under active surveillance. 22 specimens or 5.8 % recorded as PCR positive or carrying IHHNV genes. Shrimp farms with positive testing results will be subjected to health improvement, movement control, eradication and/or farm disinfection. |
| 6 | 66 healthy giant prawn specimens from growout farms were sampled under the MrNV surveillance program using RT-PCR technique. 32 specimens or 48 % recorded as PCR positive or carrying MrNV gene. However all brooder specimens appeared normal. Concepts in bio-security for disease prevention had been advised to farm operators. Samplings in the prawn hatcheries during this surveillance period found negative for MrNV. |

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

Department of Fisheries Regulation; Regulations for Importation of Marine Shrimp into the Kingdom of Thailand B.E. 2553 (A.D. 2010)
Effective date: 19 February 2010

Department of Fisheries Notification; Temporary Prohibition of Issuing Import Permit for Some Shrimp Species into the Kingdom of Thailand B.E. 2553 (A.D. 2010)
Effective date: 23 March 2010

**Country: VIETNAM** **Period: January-March 2010**

| Item | Disease status [a/] | | | Level of diagnosis | Epidemiological comment numbers |
|---|---|---|---|---|---|
| **DISEASES PREVALENT IN THE REGION** | Month | | | | |
| **FINFISH DISEASES** | January | February | March | | |
| **OIE-listed diseases** | | | | | |
| 1. Epizootic haematopoietic necrosis | 0000 | 0000 | 0000 | | |
| 2. Infectious haematopoietic necrosis | 0000 | 0000 | 0000 | | |
| 3. Spring viraemia of carp | 0000 | 0000 | 0000 | | |
| 4. Viral haemorrhagic septicaemia | 0000 | 0000 | 0000 | | |
| 5. Epizootic ulcerative syndrome | ? | ? | ? | | |
| 6. Red seabream iridoviral disease | 0000 | 0000 | 0000 | | |
| 7. Koi herpesvirus disease | 0000 | 0000 | 0000 | | |
| **Non OIE-listed diseases** | | | | | |
| 8.Grouper iridoviral disease | 0000 | 0000 | 0000 | | |
| 9.Viral encephalopathy and retinopathy | 0000 | 0000 | 0000 | | |
| 10.Enteric septicaemia of catfish | + | + | + | I,II | 1 |
| **MOLLUSC DISEASES** | | | | | |
| **OIE-listed diseases** | | | | | |
| 1. Infection with *Bonamia exitiosa* | 0000 | 0000 | 0000 | | |
| 2. Infection with *Perkinsus olseni* | 0000 | 0000 | 0000 | | |
| 3. Abalone viral mortality | 0000 | 0000 | 0000 | | |
| **Non OIE-listed diseases** | | | | | |
| 4. Infection with *Marteilioides chungmuensis* | 0000 | 0000 | 0000 | | |
| 5. Acute viral necrosis (in scallops) | 0000 | 0000 | 0000 | | |
| 6.Akoya oyster disease | 0000 | 0000 | 0000 | | |
| **CRUSTACEAN DISEASES** | | | | | |
| **OIE-listed diseases** | | | | | |
| 1. Taura syndrome | 0000 | 0000 | 0000 | | |
| 2. White spot disease | + | + | + | I,II,III | 2 |
| 3. Yellowhead disease | *** | *** | *** | | |
| 4. Infectious hypodermal and haematopoietic necrosis | 0000 | 0000 | 0000 | | |
| 5. Infectious myonecrosis | 0000 | 0000 | 0000 | | |
| 6.White tail disease (MrNV) | *** | *** | *** | | |
| **Non OIE-listed diseases** | | | | | |
| 7. Necrotising hepatopancreatitis | | | | | |
| 8. *Monodon* slow growth syndrome | + | + | + | I,III | 3 |
| 9. Milky lobster disease | + | + | + | I | 4 |
| **AMPHIBIAN DISEASES** | | | | | |
| **OIE-listed diseases** | | | | | |
| 1. Infection with Ranavirus | 0000 | 0000 | 0000 | | |
| 2. Infection with *Batrachochytrium dendrobatidis* | 0000 | 0000 | 0000 | | |
| **ANY OTHER DISEASES OF IMPORTANCE** | | | | | |
| 1. | | | | | |
| 2. | | | | | |

**DISEASES PRESUMED EXOTIC TO THE REGION[b]**
**LISTED BY THE OIE**
**Finfish**: Infectious salmon anaemia; Gyrodactylosis (*Gyrodactylus salaris*).
**Molluscs**: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*; *Xenohaliotis californiensis*.
**Crustaceans:** Crayfish plague (*Aphanomyces astaci*).
**NOT LISTED BY THE OIE**
**Finfish**: Channel catfish virus disease

a/ Please use the following symbols:

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

b/ If there is suspicion or confirmation of any of these diseases, they must be reported immediately, because the region is considered free of these diseases

### 1. Epidemiological comments:

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

| Comment No. | |
|---|---|
| 1 | Pathogen: *Edwardsiella ictaluri*<br>Infection found in intensive catfish (*Pangasius micronema; P. hypophthalmus*) farms<br>This disease occurred in An Giang and Dong Thap provinces |
| 2 | Pathogen: White Spot Syndrome Virus (WSSV)<br>Disease found in black tiger shrimp (*Penaeus monodon*) and white leg shrimp (*P. vannamei*)<br>The disease occurred in Nghe An, Ha Tinh, Binh Dinh, Ba Ria-Vung Tau, Long An, Tien Giang, Tra Vinh, Ben Tre, Soc Trang, Bac Lieu and Ca Mau provinces |
| 3 | Pathogen: Baculovirus<br>Infection found in black tiger shrimp (*Penaeus monodon*)<br>Disease characteristics: darkened body color, loss of appetite, slow and stunted growth<br>The disease was reported in Ba Ria-Vung Tau and Ca Mau provinces |
| 4 | Pathogen: Rickettsia-like bacteria<br>Infection found in lobsters (*Panulirus ornatus* and *P. homarus*) cultured in cages at the grow-out stage<br>Disease characteristics: black gills, uncovered head, and milky-colored abdomen traces<br>The disease occurred in Binh Thuan province |

**2. New aquatic animal health regulations introduced within past six months (with effective date):** None

# List of Diseases in the Asia-Pacific
## *Quarterly Aquatic Animal Disease Report (Beginning 2010)*

| 1. DISEASES PREVALENT IN THE REGION | |
|---|---|
| **1.1 FINFISH DISEASES** | |
| **OIE-listed diseases** | **Non OIE-listed diseases** |
| 1. Epizootic haematopoietic necrosis | 1.Grouper iridoviral disease |
| 2. Infectious haematopoietic necrosis | 2.Viral encephalopathy and retinopathy |
| 3. Spring viraemia of carp | 3.Enteric septicaemia of catfish |
| 4. Viral haemorrhagic septicaemia | |
| 5. Epizootic ulcerative syndrome | |
| 6. Red seabream iridoviral disease | |
| 7. Infection with koi herpesvirus | |
| **1.2 MOLLUSC DISEASES** | |
| **OIE-listed diseases** | **Non OIE-listed diseases** |
| 1. Infection with *Bonamia exitiosa* | 1. Infection with *Marteilioides chungmuensis* |
| 2. Infection with *Perkinsus olseni* | 2. Akoya oyster disease |
| 3. Abalone viral mortality | 3. Acute viral necrosis (in scallops) |
| **1.3 CRUSTACEAN DISEASES** | |
| **OIE-listed diseases** | **Non OIE-listed diseases** |
| 1. Taura syndrome | 1. Monodon slow growth syndrome |
| 2. White spot disease | 2. Necrotising hepatopancreatitis[1/] |
| 3. Yellowhead disease | 3. Milky haemolymph disease of spiny lobster[1/] |
| 4. Infectious hypodermal and haematopoietic necrosis | |
| 5. Infectious myonecrosis | |
| 6. White tail disease (MrNV) | |
| **1.4 AMPHIBIAN DISEASES** | |
| **OIE-listed diseases** | **Non OIE-listed diseases** |
| 1. Infection with Ranavirus | |
| 2. Infection with *Bachtracochytrium dendrobatidis* | |
| **2. DISEASES PRESUMED EXOTIC TO THE REGION** | |
| **2.1 Finfish** | |
| **OIE-listed diseases** | **Non OIE-listed diseases** |
| 1. Infectious salmon anaemia | 1. Channel catfish virus disease |
| 2. Gyrodactylosis (*Gyrodactylus salaris*) | |
| **2.2 Molluscs** | |
| **OIE-listed diseases** | **Non OIE-listed diseases** |
| 1. Infection with *Bonamia ostreae* | |
| *2.* Infection with *Marteilia refringens* | |
| *3.* Infection with *Perkinsus marinus* | |
| *4.* Infection with *Xenohaliotis californiensis* | |
| **2.3 Crustaceans** | |
| **OIE-listed diseases** | **Non OIE-listed diseases** |
| 1. Crayfish plague (*Aphanomyces astaci*) | |

[1/] **Listed in OIE as "Under Study"**

# Recent Aquatic Animal Health Related Publications

**OIE Aquatic Animal Health Code, 12th Edition, 2009.** The aim of the *Aquatic Code* is to assure the sanitary safety of international trade in aquatic animals (fish, molluscs, crustaceans and amphibians) and their products. This is achieved through the detailing of health measures to be used by the veterinary authorities of importing and exporting countries to avoid the transfer of agents pathogenic for animals or humans, while avoiding unjustified sanitary barriers. The health measures in the *Aquatic Code* (in the form of standards, guidelines and recommendations) have been formally adopted by the OIE International Committee. The 12th edition incorporates the modifications to the *Aquatic Code* agreed during the 77th General Session in May 2009. The Aquatic Animal Health Code is available on http://www.oie.int/eng/normes/fcode/en_sommaire.htm. The book may be also be ordered from OIE online bookshop at http://www.oie.int/boutique/index.php?lang=en.

**OIE Manual of Diagnostic Tests for Aquatic Animals, 2009.** The purpose of this manual is to provide a uniform approach to the detection of the diseases listed in the OIE *Aquatic Animal Health Code*, so that the requirements for health certification in connection with trade in aquatic animals and aquatic animal products can be met. It includes bibliographical references and a list of the OIE Reference Laboratories for amphibian, crustacean, fish and mollusc diseases. The manual is available at http://www.oie.int/eng/normes/fmanual/A_summry.htm and can be ordered at http://www.oie.int/boutique/index.php?lang=en.

Corsin, F., Georgiadis, M., Larry Hammel, K. and Hill, B., 2009. **Guide for Aquatic Animal Health Surveillance**. World Organization for Animal Health (OIE), Paris, France. 114 pp. Efficient and reliable surveillance systems generate sound evidence for disease incidence, prevalence and distribution, or for demonstrating disease absence. Science-based decisions regarding the health of aquatic animals rely on the information generated by surveillance programs. This practical handbook about surveillance is intended to be used mainly by Veterinary Services or other Competent Authorities, their staff and experts, for designing, implementing, and evaluating surveillance systems for diseases of relevance for aquatic animals in their country. The book can be ordered at http://www.oie.int/boutique/index.php?lang=en.

**WHO-FAO Food Hygiene (Basic Texts), 4th Edition, 2009**. World Health Organization and Food and Agriculture Organization of the United Nation, Rome, Italy. The Codex basic texts on food hygiene promote understanding of how rules and regulations on food hygiene are developed and applied. The General Principles of food hygiene cover hygiene practices from primary production through to final consumption, highlighting the key hygiene controls at each stage. This publication also contains the most internationally used description of the Hazard Analysis and Critical Control Point (HACCP) system and guidelines for its application. This fourth edition includes texts adopted by the Codex Alimentarius Commission up to 2009. The texts will be of use to government authorities, food industries, food handlers and consumers, as well as teachers and students of food hygiene.

Bondad-Reantaso, M.G., Arthur, J.R. and Subasinghe, R.P. (eds.). 2008. **Understanding and applying risk analysis in aquaculture.** *FAO Fisheries and Aquaculture Technical Paper. No. 519.* Rome, FAO. 2008. 304p. Risk analysis is an objective, systematic, standardized and defensible method of assessing the likelihood of negative consequences occurring due to a proposed action or activity and the likely magnitude of those consequences, or, simply put, it is "science-based decision-making"

FAO. Report of FAO **Workshop on Information Requirements for Maintaining Aquatic Animal Biosecurity.** Cebu City, Philippines, 15−17 February 2007. *FAO Fisheries and Aquaculture Report*. No. 877. Rome, FAO. 2008. 27p.

FAO Regional Commission for Fisheries. **Report of the Regional Technical Workshop on Aquatic Animal Health.** Jeddah. Kingdom of Saudi Arabia, 6-10 April 2008. FAO Fisheries and Aquaculture Report. No. 831. Rome, FAO. 2008. 120 pp**.**

FAO. 2009. **Report of the International Emergency Disease Investigation Task Force on a Serious Finfish Disease in Southern Africa, 18-26 May 2007.** Rome, FAO. 2009.

Arthur, J.R., Bondad-Reantaso, M.G. and Subasinghe, R.P. 2008. **Procedures for the quarantine of live aquatic animals: a manual**. FAO Fisheries Technical Paper No. 502. Rome, FAO. 2008. 74p.

Bondad-Reantaso, M.G., Mohan, C.V., Crumlish, M. and Subasinghe, R.P. (eds.) 2008. **Proceedings of the Sixth Symposium on Diseases in Asian Aquaculture (DAA VI)**. 25-28 October 2005, Colombo, Sri Lanka. Fish Health Section. 505 pp.

Bernoth, E.-M. (Coordinator). 2008. **Changing Trends in Managing Aquatic Animal Disease Emergencies.** OIE Scientific and Technical Review, Volume 27(1), April 2008. 281p.

Bondad-Reantaso, M.G., McGladdery, S.E. and Berthe, F.C.J. 2007. **Pearl oyster health management: a manual.** FAO Fisheries Technical Paper. No. 503. Rome, FAO. 2007. 120p.

Kirjusina, M. and Vismanis, K. 2007. **Checklist of the parasites of fishes of Latvia. FAO Fisheries Technical Paper. 369/3.** Rome, FAO. 113p.

Dodet, B., the OIE Scientific and Technical Department (eds.). **The OIE Global Conference on Aquatic Animal Health.** Dev Biol (Basel), Basel, Karger, Volume 29. 193p.

**Aquatic Animal Diseases Significant to Asia-Pacific: Identification Field Guide:** NACA and the Australian Government Department of Agriculture, Fisheries and Forestry (DAFF) have recently produced this field guide to support aquatic animal health surveillance, early response and reporting in the region. The field guide drew extensively from the experiences and previous and ongoing research activities in health management in Australia and other countries in Asia and thus joins the growing body of practical knowledge published for Asia-Pacific aquaculture and fisheries. The regional field guide covers all diseases listed in the Quarterly Aquatic Animal Disease (QAAD) reporting system, which includes all OIE listed diseases plus diseases of regional concern. The field guide is available for free download at http://www.enaca.org/modules/news/article.php?storyid=1003

FAO. 2007. Aquaculture development 2. **Health management for the responsible movement of live aquatic animals**. FAO Technical Guidelines for Responsible Fisheries. No. 5, Suppl. 2. Rome, FAO. 2007. 31p. Further information: Rohana.Subasinghe@fao.org

**Color Atlas of Fish Histopathology**, Volume 2 (2007) by Teruo Miyazaki. The only book on fish histopathology. Highly recommended for private library, institutional libraries, laboratories for studies and education on fish disease. The volume contains 13 RNA viruses, 16 DNA viruses, 7 fungal diseases and 50 parasitic diseases. Downloadable at URL http://briefcase.yahoo.co.jp/yappon1978. Further details from miyazaki@bio.mie-u.ac.jp

Arthur, J.R. & Te, B.Q. 2006. **Checklist of the parasites of fishes of Viet Nam**. FAO Fisheries Technical Paper No. 369/2. Rome, FAO. 133 pp.

**Aquaculture Biosecurity: Prevention, Control and Eradication of Aquatic Animal Disease**. 2006. A. David Scarfe, Cheng-Sheng Lee and Patricia O'Bryen (editors). Blackwell Publishing. 182 pp.

**Regional Workshop on Preparedness and Response to Aquatic Animal Health Emergencies in Asia,** Jakarta, Indonesia, 21-23 September 2004. Subasinghe, RP. and JR Arthur (editors). FAO Fisheries Proceedings No. 4, Rome, FAO. 2005. 178p.

**Responsible use of antibiotics in aquaculture**. Hernandez Serrano, P. 2005. FAO Fisheries Technical Paper. No. 469. Rome, FAO. 2005. 97p.

**Pathogen and ecological risk analysis for the introduction of blue shrimp, *Litopenaeus stylirostris*, from Brunei Darussalam to Fiji**. Bondad-Reantaso, M.G., Lovell, E.R., Arthur, J.R., Hurwood, D. & Mather, P.B. 2005. Secretariat of the Pacific Community, New Caledonia. 80 pp.
http://www.spc.org.nc/aquaculture/site/publications/documents/Stylirostris_BruneiFiji.pdf

**Pathogen and ecological risk analysis for the introduction of giant river prawn, *Macrobrachium rosenbergii* from Fiji to the Cooks Islands**. Arthur, J.R., Hurwood, D., Lovell, E.R., Bondad-Reantaso, M.G., & Mather, P.B. 2005. Secretariat of the Pacific Community, New Caledonia.
http://www.biosecurity.govt.nz/files/pests-diseases/plants/risk/prawns-ra.pdf

**A Colour Atlas of Diseases of Yellowtail (Seriola) Fish:** Written by Dr. Mark Sheppard, Canadian veterinarian, a new publication (in Japanese and originally in English) "A Colour Atlas of Diseases of Yellowtail (Seriola) Fish" is now available. A useful diagnostic field guide for fish farmers, fish health professionals, laboratory technicians and students, this book contains 30 pages of high resolution, detailed pathology photomicrographs of most commonly found diseases of yellowtail. More details can be found at http://oberon.ark.com/~svs/index_files/svsindexfile5.html

**Histological Techniques for Marine Bivalve Molluscs and Crustaceans:** A new publication by DW Howard, EJ Lewis, BJ Keller and CS Smith of the Cooperative Oxford Laboratory, Center for Coastal Environmental Health and Biomolecular Research, National Centers for Coastal Ocean Science, National Ocean Service, NOAA. This is an invaluable guide to histological techniques of shellfish, principally molluscs and crustaceans which every aquatic animal health researcher should have. Those interested to receive copies, please write to the Librarian, Ms Susie Hines at Susie.Hines@noaa.gov

**Surveillance and Zoning for Aquatic Animal Diseases.**
Subasinghe, R.P., McGladdery, S.E. and Hill, B.J. (eds.). FAO Fisheries Technical Paper. No. 451. Rome, FAO. 2004. 73p. This document contains the recommendations and conclusions of an Expert Consultation on Surveillance and Zoning for Aquatic Animal Diseases' jointly organized by FAO, the Federal Department of Fisheries and Oceans Canada (DFO-Canada) and OIE held in October 2002 at the FAO Headquarters in Rome, Italy. The objective of the consultation was to determine what surveillance options can best support scientifically valid zonation frameworks. Contact: Rohana.Subasinghe@fao.org

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**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<br>Clinical examination |
| II | Laboratory | Parasitology<br>Bacteriology<br>Mycology<br>Histopathology |
| III | Laboratory | Virology<br>Electron microscopy<br>Molecular biology<br>Immunology |

### D. Subjects to be covered in the Epidemiological Comments

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

**IMPORTANT**

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

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

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## Notes

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