



QUARTERLY AQUATIC ANIMAL DISEASE REPORT (Asia and Pacific Region)

April – June 2010

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in Asia-Pacific**

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Foreword

Current Fish Health Concerns

Two international gatherings that I have attended during the 2nd and 3rd quarters of 2010 have dealt with some important issues/concerns on aquatic animal health. The first was the Regional Terrestrial and Aquatic Animal Disease Reporting Workshop organized by the Secretariat of the Pacific Community (SPC) which was held in Nadi, Fiji in June. Participants were animal health officers from Pacific Island Countries and Territories (PICTs). The second meeting was the well-attended Global Conference on Aquaculture 2010 held in Phuket, Thailand in September, which was co-organized by NACA, Food and Agriculture Organization (FAO) and the Department of Fisheries (DOF)-Thailand.

The SPC Workshop was held in response to the strict regulations of the European Union (EU) for the importation of aquatic products (mainly marine ornamentals) from PICTs. As not all PICTs are member of the World Organization for Animal Health (OIE) where the EU regulations were based, SPC negotiated with EU that both members and non-members of OIE among PICTs can still continue to export marine ornamentals to EU on the condition of improving their reporting to OIE, on the status of terrestrial and aquatic animal health in the region. Therefore, the workshop was organized for relevant fisheries, quarantine and animal health staff in using the WAHIS (World Animal Health Information System) and animal health reporting procedures. Its focus was to ensure that countries currently exporting aquatic ornamentals are able to comply with OIE reporting procedures and can make regular reports. The WAHIS training allows PICTs to demonstrate their animal health status in regard to their potential for live animal export products.

The workshop also provided an opportunity to discuss the possible scope and functions of regional animal health information systems that could be developed specifically for the Pacific Islands region, pinpoint constraints in implementation of systems like WAHIS or TADinfo in Pacific island countries, and develop strategies to address the constraints. Main outcomes after the workshop are first-time submissions to OIE of six-monthly and annual reports (for 2008) using the online WAHIS by participants from seven PICTs. Moreover, four countries also submitted their reports for 2009.

In the recently concluded Global Conference on Aquaculture, presentations and panel discussions were organized under different thematic sessions. One of which is “Maintaining Environmental Integrity through Responsible Aquaculture” where recommendations on aquatic animal health were included under the topic “Improving Biosecurity”. Summary of the panel discussion under this topic suggested that disease intelligence, research, technologies and information have greatly improved, but there is still a need to involve key personnels, especially farmers/producers, into the equation for effective implementation of aquatic animal health programs and technologies. This clearly indicates the importance of aquatic animal health activities to maintain sustainability in the continuously expanding aquaculture industry.

The following general recommendations were made by the panel experts, based on the discussion and opinions raised under this topic:

- Surveillance programmes and diagnostic services to detect and identify the arrival and spread of pests and diseases;
- Timely assessment of the threats from new or expanding species;
- Rapid response to eradicate new pests and diseases before they establish and spread;
- Standardization of science-based identification of all risk pathways and high-risk organisms, and implementation of pre-border, border and post-border measures to prevent pests and diseases from entering the country;
- National frameworks to regulate, manage and control biosecurity;
- Infrastructure, human capacity, research and information to implement the above.

As such, the following messages have been taken into consideration:

1. International and national efforts to promote biosecurity need to better reach the grassroots levels of the industry and the community stakeholders (e.g. the farmer, extension services, the importer, the processor, the boat owner, the fisherman etc.);
2. Biosecurity frameworks need to keep pace with the unprecedented level of aquaculture development in terms of species, systems and technology;
3. Standards on aquatic animal health for known pathogens, aquatic pests and food safety are already available, but greater commitment by governments is needed to implement these standards;
4. International standards need to be developed to address the high incidence of emerging diseases of aquatic animals and aquatic pests compared to the terrestrial scenario – there is a need to complement the pathogen/pest specific approach to biosecurity with standards that deter high risk practices.

Among the posters presented, studies on aquatic animal health share the most numbers (29 out of 130; ~22%). The topics covered include use of plant extracts as fish immunostimulants, *Streptococcus agalactiae* infection in tilapia (which is one of the listed disease concerns in this quarterly report), antimicrobial compounds from natural sources, molecular diagnostic techniques, probiotics, disease prevention, and toxicology.

Overall, the two international gatherings have dealt with current fish health concerns in relation to aquaculture operations as well as trans-boundary movements of live aquatic organisms. The continuous reporting and updates on aquatic animal diseases through QAAD, as well as through OIE online system, will continue to play an important role in the overall aquatic animal health management, and as early warning system for disease prevention (and possibly control).

Reports Received by the NACA Secretariat

Country: AUSTRALIAPeriod: April-June 2010

| Item | Disease status ^{al} | | | Level of diagnosis | Epidemiological comment numbers |
|---|------------------------------|---------|---------|--------------------|---------------------------------|
| | Month | | | | |
| DISEASES PREVALENT IN THE REGION | April | May | June | | |
| FINFISH DISEASES | | | | | |
| OIE-listed diseases | | | | | |
| 1. Epizootic haematopoietic necrosis | -(2009) | -(2009) | -(2009) | | 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) | + | II | 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) | + | -(2010) | II | 3 |
| 10. Enteric septicaemia of catfish | -(2010) | -(2010) | -(2010) | | 4 |
| MOLLUSC DISEASES | | | | | |
| OIE-listed diseases | | | | | |
| 1. Infection with <i>Bonamia exitiosa</i> | 0000 | 0000 | 0000 | | |
| 2. Infection with <i>Perkinsus olseni</i> | -(2009) | -(2009) | -(2009) | | 5 |
| 3. Abalone viral mortality | -(2010) | -(2010) | -(2010) | | 6 |
| Non OIE-listed diseases | | | | | |
| 4. Infection with <i>Marteilioides chungmuensis</i> | 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. <i>Monodon</i> 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 <i>Batrachochytrium dendrobatidis</i> | -(2010) | -(2010) | -(2010) | | 10 |
| ANY OTHER DISEASES OF IMPORTANCE | | | | | |
| 1. Queensland grouper mortality | + | + | -(2010) | II | 11 |
| 2. Goldfish herpesvirus | *** | *** | + | III | 12 |

| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|--------|--|---|---|-----|-------------------------------------|----|---|-----|--------------------------|---|---|------|----------------|--|--|---|--|--|--|--------|-------------------------|
| <p>DISEASES PRESUMED EXOTIC TO THE REGION^b LISTED BY THE OIE Finfish: Infectious salmon anaemia; Gyrodactylosis (<i>Gyrodactylus salaris</i>). Molluscs: Infection with <i>Bonamia ostreae</i>; <i>Marteilia refringens</i>; <i>Perkinsus marinus</i>; <i>Xenohaliotis californiensis</i>. Crustaceans: Crayfish plague (<i>Aphanomyces astaci</i>). NOT LISTED BY THE OIE Finfish: Channel catfish virus disease</p> | | | | | | | | | | | | | | | | | | | | | | | |
| <p>a/ Please use the following symbols:</p> <table border="0"> <tr> <td style="padding-right: 20px;">+</td> <td style="padding-right: 20px;">Disease reported or known to be present</td> <td style="padding-right: 20px;">+()</td> <td>Occurrence limited to certain zones</td> </tr> <tr> <td style="padding-right: 20px;">+?</td> <td style="padding-right: 20px;">Serological evidence and/or isolation of causative agent but no clinical diseases</td> <td style="padding-right: 20px;">***</td> <td>No information available</td> </tr> <tr> <td style="padding-right: 20px;">?</td> <td style="padding-right: 20px;">Suspected by reporting officer but presence not confirmed</td> <td style="padding-right: 20px;">0000</td> <td>Never reported</td> </tr> <tr> <td></td> <td></td> <td style="padding-right: 20px;">-</td> <td>Not reported (but disease is known to occur)</td> </tr> <tr> <td></td> <td></td> <td style="padding-right: 20px;">(year)</td> <td>Year of last occurrence</td> </tr> </table> | | | | + | 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 | ? | Suspected by reporting officer but presence not confirmed | 0000 | Never reported | | | - | Not reported (but disease is known to occur) | | | (year) | Year of last occurrence |
| + | 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 | | | | | | | | | | | | | | | | | | | | |
| ? | Suspected by reporting officer but presence not confirmed | 0000 | Never reported | | | | | | | | | | | | | | | | | | | | |
| | | - | Not reported (but disease is known to occur) | | | | | | | | | | | | | | | | | | | | |
| | | (year) | Year of last occurrence | | | | | | | | | | | | | | | | | | | | |
| <p>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</p> | | | | | | | | | | | | | | | | | | | | | | | |

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 | <p>Epizootic haematopoietic necrosis was not reported during this period but is known to have occurred in New South Wales in the last quarter of 2009. Not reported this period despite passive surveillance, but known to have occurred previously in Victoria (last year reported 2004) 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. No information available this period, but known to occur in the Australian Capital Territory (last year reported 2008).</p> |
| 2 | <p>Epizootic ulcerative syndrome</p> <ol style="list-style-type: none"> 1. Reported in Northern Territory in June 2010. Passive surveillance; 2. In 8cm wild spangled perch (<i>Leiopotherapon unicolor</i>); 3. Clinical signs- mortality; 4. Pathogen- <i>Aphanomyces invadans</i>; 5. Mortality rate- 16 fish out of unknown total population; 6. Economic loss- n/a; 7. Geographic extent- single billabong; 8. Containment measures- nil; 9. Laboratory confirmation- diagnosed from 1 out of 16 mortalities by histopathology; 10. Publications- unpublished. <p>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 Victoria (last reported 1st quarter 2010), New South Wales, Queensland and Western Australia (last year reported 2009). Passive surveillance and never reported in Tasmania. No information available in the Australian Capital Territory.</p> |

| | |
|---|--|
| 3 | <p>Viral Encephalopathy and Retinopathy</p> <ol style="list-style-type: none"> 1. Reported in South Australia in May 2010. Active surveillance; 2. In 41 day old barramundi (<i>Lates calcarifer</i>); 3. Clinical signs- nil; 4. Pathogen- barramundi nodavirus; 5. Mortality rate- nil; 6. Economic loss- nil; 7. Geographic extent- single cohort in 7 tanks on land-based hatchery facility; 8. Containment measures- quarantine and effluent disinfection; 9. Laboratory confirmation- diagnosed by histopathology; 10. Publications- unpublished. <p>Viral encephalopathy and retinopathy was not reported this quarter despite passive surveillance, but is known to have occurred previously in Queensland (last reported 1st quarter 2010), Northern Territory (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.</p> |
| 4 | <p>Enteric septicaemia of catfish was not reported this quarter despite targeted surveillance but is known to have occurred previously in the Northern Territory (last reported 1st quarter 2010). 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 (<i>Brachydanio rerio</i>) 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.</p> |
| 5 | <p>Infection with <i>Perkinsus olseni</i> 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).</p> |
| 6 | <p>Abalone viral ganglioneuritis was not reported this period despite targeted surveillance, but is known to have occurred previously in Tasmania (last year reported 2009). Not reported this period despite passive surveillance, but known to have occurred previously in Victoria (last reported 1st quarter 2010). 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.</p> |
| 7 | <p>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).</p> |
| 8 | <p>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.</p> |

| | |
|--|---|
| 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 <i>Batrachochytrium dendrobatidis</i> 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, Tasmania and Victoria. |
| Other non OIE-listed diseases of importance | |
| 11 | <p>Queensland groper mortalities High numbers of mortalities in Queensland gopers (<i>Epinephelus lanceolatus</i>) associated with <i>Streptococcus agalactiae</i> septicaemia were observed in northern Queensland coastal waters through 2008. Further Queensland groper mortalities from the same region were reported through 2009 and early 2010 and in April and May 2010, eight more Queensland groper mortalities were reported. Of the five gopers sampled from the 2nd quarter 2010 event, a <i>S. agalactiae</i> septicaemia was present in three of the fish. Investigation and necropsy of dead or dying Queensland gopers is on-going.</p> |
| 12 | <p>Goldfish herpesvirus</p> <ol style="list-style-type: none"> 1. Reported in South New South Wales in June 2010. Passive surveillance; 2. In goldfish (<i>Carassius auratus</i>); 3. Clinical signs-mortality; 4. Pathogen- goldfish herpesvirus (Cyprinid herpesvirus 2); 5. Mortality rate- 20%; 6. Economic loss- not reported; 7. Geographic extent- single pond, private pet owner; 8. Containment measures- nil; 9. Laboratory confirmation- diagnosed by virus isolation and PCR; 10. Publications- unpublished. |

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

Country: **BANGLADESH**Period: **April-June 2010**

| Item | Disease status ^{al} | | | Level of diagnosis | Epidemiological comment numbers |
|---|------------------------------|------|------|--------------------|---------------------------------|
| | Month | | | | |
| DISEASES PREVALENT IN THE REGION | April | May | June | | |
| FINFISH DISEASES | | | | | |
| 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 <i>Bonamia exitiosa</i> | 0000 | 0000 | 0000 | | |
| 2. Infection with <i>Perkinsus olseni</i> | 0000 | 0000 | 0000 | | |
| 3. Abalone viral mortality | 0000 | 0000 | 0000 | | |
| Non OIE-listed diseases | | | | | |
| 4. Infection with <i>Marteilioides chungmuensis</i> | 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. <i>Monodon</i> 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 <i>Batrachochytrium dendrobatidis</i> | 0000 | 0000 | 0000 | | |
| ANY OTHER DISEASES OF IMPORTANCE | | | | | |
| 1. Mass mortality of tilapia | + | + | + | I,II | 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 |
| ? | Suspected by reporting officer but presence not confirmed | 0000 | Never reported |
| | | - | 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 | |
| 3 | |

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

Country: **HONG KONG SAR**

 Period: **April-June 2010**

| Item | Disease status ^{a/} | | | Level of diagnosis | Epidemiological comment numbers |
|---|------------------------------|------|------|--------------------|---------------------------------|
| | Month | | | | |
| DISEASES PREVALENT IN THE REGION | April | May | June | | |
| FINFISH DISEASES | | | | | |
| 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 | 1 |
| 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 <i>Bonamia exitiosa</i> | 0000 | 0000 | 0000 | II | |
| 2. Infection with <i>Perkinsus olseni</i> | 0000 | 0000 | 0000 | II | |
| 3. Abalone viral mortality | 0000 | 0000 | 0000 | II | |
| Non OIE-listed diseases | | | | | |
| 4. Infection with <i>Marteilioides chungmuensis</i> | 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 | 2 |
| 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. <i>Monodon</i> 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 <i>Batrachochytrium dendrobatidis</i> | 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 |
| ? | Suspected by reporting officer but presence not confirmed | 0000 | Never reported |
| | | - | 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 | Infectious spleen and kidney necrosis (Red seabream iridoviral disease) was detected in a group of green groupers observed to be listless and had darkened body, and enlargement of the spleen. Five percent mortality was reported. Histological findings were consistent with the disease. |
| 2 | White spot syndrome virus was isolated from a group of red lobsters that have been submitted for health certification. |
| 3 | |

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

Country: **INDIA**

 Period: **April-June 2010**

| Item | Disease status ^{a/} | | | Level of diagnosis | Epidemiological comment numbers |
|---|------------------------------|------|------|--------------------|---------------------------------|
| | Month | | | | |
| DISEASES PREVALENT IN THE REGION | April | May | June | | |
| FINFISH DISEASES | | | | | |
| 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 <i>Bonamia exitiosa</i> | 0000 | 0000 | 0000 | | |
| 2. Infection with <i>Perkinsus olseni</i> | 0000 | 0000 | 0000 | | |
| 3. Abalone viral mortality | 0000 | 0000 | 0000 | | |
| Non OIE-listed diseases | | | | | |
| 4. Infection with <i>Marteilioides chungmuensis</i> | 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 | 1 |
| 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. <i>Monodon</i> 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 <i>Batrachochytrium dendrobatidis</i> | 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 |
| ? | Suspected by reporting officer but presence not confirmed | 0000 | Never reported |
| | | - | 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 | Reported from very limited area of Prakasam District in Andhra Pradesh |
| 2 | |
| 3 | |

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

Country: **INDONESIA**

 Period: **April-June 2010**

| Item | Disease status ^{a/} | | | Level of diagnosis | Epidemiological comment numbers |
|---|------------------------------|------|------|--------------------|---------------------------------|
| | Month | | | | |
| DISEASES PREVALENT IN THE REGION | April | May | June | | |
| FINFISH DISEASES | | | | | |
| 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 | | 1 |
| 7. Koi herpesvirus disease | + | + | + | | 2 |
| Non OIE-listed diseases | | | | | |
| 8. Grouper iridoviral disease | + | + | + | III | 3 |
| 9. Viral encephalopathy and retinopathy | + | + | + | III | 4 |
| 10. Enteric septicaemia of catfish | 0000 | 0000 | 0000 | | |
| MOLLUSC DISEASES | | | | | |
| OIE-listed diseases | | | | | |
| 1. Infection with <i>Bonamia exitiosa</i> | 0000 | 0000 | 0000 | | |
| 2. Infection with <i>Perkinsus olseni</i> | 0000 | 0000 | 0000 | | |
| 3. Abalone viral mortality | 0000 | 0000 | 0000 | | |
| Non OIE-listed diseases | | | | | |
| 4. Infection with <i>Marteilioides chungmuensis</i> | 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 | 5 |
| 2. White spot disease | + | + | + | III | 6 |
| 3. Yellowhead disease | 0000 | 0000 | 0000 | | |
| 4. Infectious hypodermal and haematopoietic necrosis | + | + | + | III | 7 |
| 5. Infectious myonecrosis | + | + | + | III | 8 |
| 6. White tail disease (MrNV) | 0000 | 0000 | 0000 | | |
| Non OIE-listed diseases | | | | | |
| 7. Necrotising hepatopancreatitis | 0000 | 0000 | 0000 | | |
| 8. <i>Monodon</i> 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 <i>Batrachochytrium dendrobatidis</i> | 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 |
| ? | Suspected by reporting officer but presence not confirmed | 0000 | Never reported |
| | | - | 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 | <p>KHV</p> <ol style="list-style-type: none"> 1. Disease outbreak caused by continuous rainfall and decrease in water temperature for 3 months. 2. Species affected: Common carp (<i>Cyprinus carpio</i>) 3. Clinical sign: low irritation on gill, fins and other parts of the body; haemorrhage; low appetite 4. Pathogen: Koi herpes virus 5. Mortality rate: low to high (30-70%) 6. Economic loss: 7. Names of infected areas: West Java (Sukabumi, Rangkas, Bitung, Cianjur), Central Java (Ambarawa), East Kalimantan (Kutai Kertanegara), South Kalimantan (Banjar) 8. Preventive/control measures: eradication of infected fish; quarantine procedures for non-infected fish (transferred to another pond) 9. Laboratory confirmation: DGA Technical Implementing Unit Laboratory, Provincial Fisheries Laboratory by PCR 10. Not published |

| | |
|----------|---|
| <p>2</p> | <p>GIV</p> <ol style="list-style-type: none"> 1. - 2. Species affected: Polkadot grouper (<i>Cromileptes altivelis</i>), Tiger grouper (<i>Ephinephelus fuscoguttatus</i>) 3. 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; 4. Pathogen : Grouper iridoviral disease; 5. Mortality rate: low (1%) 6. Economic loss: not significant 7. Names of infected areas: Lampung (Hurun Bay & Tanjung Putus), Batam 8. Preventive/control measures: 9. Laboratory confirmation: DGA Technical Implementing Unit Laboratory by PCR 10. Not published |
| <p>3</p> | <p>VNN</p> <ol style="list-style-type: none"> 1. Diseases were found in seed phase 2. Species affected: tiger grouper (<i>Ephinephelus fuscoguttatus</i>), Polkadot grouper (<i>Cromileptes altivelis</i>), white snapper (<i>Lates calcarifer</i>), <i>Trachinotus blochi</i> 3. Clinical sign: abnormally swim at surface (spiral, whirling or belly – up rest), bad response, gill haemorrhage, sleepy at bottom of the tank 4. Pathogen: Viral Nervous Necrosis Virus 5. Mortality rate: low to medium (less than 50%) 6. Economic loss: 7. Names of infected areas: East Java (Situbondo), Lampung, Batam, South Sumatra (Palembang), West Nusa Tenggara (West Sumbawa) 8. Preventive/control measures: 9. Laboratory confirmation: DGA Technical Implementing Unit Laboratory by PCR 10. Not published |
| <p>4</p> | <p>TSV</p> <ol style="list-style-type: none"> 1. Disease occurs after the molting process 2. Species affected : White shrimp (<i>Litopenaeus vanamei</i>) 3. Clinical signs: mass mortality at the moulting shrimp 4. Pathogen : Taura Syndrome Virus 5. Economic loss : - 6. Mortality rate : high (>70%) 7. Name of infected area: Central Java (Jepara), East Java (Situbondo), West Nusa Tenggara (West Sumbawa) 8. Preventive/control measures: Early harvest 9. Laboratory confirmation: DGA Technical Implementing Unit Laboratory by PCR 10. Not published |

| | |
|---|--|
| 5 | <p>WSSV</p> <ol style="list-style-type: none"> 1. - 2. Species affected: Tiger shrimp (<i>Penaeus monodon</i>), White shrimp (<i>Litopenaeus vanamei</i>) 3. Clinical sign: White spot on carapace, shrimp becoming weak and swimming on the surface and near pond dikes 4. Pathogen: White Spot Syndrome Virus (Whispovirus) 5. Mortality rate : high (>70%) 6. Economis loss : - 7. Infected area: Bali (Jembrana), Central Java (Jepara, Rembang), East Java (Sampang, Situbondo), Yogyakarta (Kulongprogo), East Kalimantan (Pasar) 8. Preventive/Control measures: Early harvest, application of probiotics, intensified water exchange 9. Laboratory confirmation: DGA Technical Implementing Unit Laboratory by PCR 10. Not published |
| 6 | <p>IHHNV</p> <ol style="list-style-type: none"> 1. - 2. Species affected: White shrimp (<i>Litopenaeus vannamei</i>) 3. Clinical sign: slow growth (very small size/dwarf) 4. Pathogen: Infectious Hypodermal and Haematophatic Necrosis Virus (Perpovirus) 5. Mortality rate: low ($\pm 30\%$) 6. Economic loss : - 7. Name of infected area: Central Java (Jepara), West Kalimantan (Bengkayang), Bali (Jembrana, Karangasem, Buleleng) 8. Preventive/Control measures: 9. Laboratory confirmation: DGA Technical Implementing Unit Laboratory by PCR 10. Not published |
| 7 | <p>IMNV</p> <ol style="list-style-type: none"> 1. - 2. Species affected: White shrimp (<i>Litopenaeus vanamei</i>) 3. Clinical sign: broken at shrimp meat with white sign, especially at abdomen and telson, positive detection by PCR 4. Pathogen: Infectious Myonecrosis Virus 5. Mortality rate: high ($\pm 70\%$) 6. Economic loss: 7. Prevetive/Control measures taken: - 8. Infected area: Lampung, Central Java (Jepara, Rembang), East Java (Situbondo), West Kalimantan (Bengkayang), West Nusa Tenggara (West Sumbawa) 9. Laboratory confirmation: DGA Technical Implementing Unit Laboratory by PCR 10. Not published |

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

Country: **JAPAN**

 Period: **April-June 2010**

| Item | Disease status ^{a/} | | | Level of diagnosis | Epidemiological comment numbers |
|---|------------------------------|------|------|--------------------|---------------------------------|
| | Month | | | | |
| DISEASES PREVALENT IN THE REGION | April | May | June | | |
| FINFISH DISEASES | | | | | |
| 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 | - | + | + | III | |
| 7. Koi herpesvirus disease | + | + | + | III | |
| Non OIE-listed diseases | | | | | |
| 8. Grouper iridoviral disease | 0000 | 0000 | 0000 | I | |
| 9. Viral encephalopathy and retinopathy | - | +? | - | III | |
| 10. Enteric septicaemia of catfish | - | - | - | I | |
| MOLLUSC DISEASES | | | | | |
| OIE-listed diseases | | | | | |
| 1. Infection with <i>Bonamia exitiosa</i> | 0000 | 0000 | 0000 | I | |
| 2. Infection with <i>Perkinsus olseni</i> | - | - | - | I | |
| 3. Abalone viral mortality | 0000 | 0000 | 0000 | I | |
| Non OIE-listed diseases | | | | | |
| 4. Infection with <i>Marteilioides chungmuensis</i> | + | - | - | I | |
| 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 | - | + | - | III | |
| 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. <i>Monodon</i> slow growth syndrome | 0000 | 0000 | 0000 | I | |
| 9. Milky lobster disease | 0000 | 0000 | 0000 | I | |
| AMPHIBIAN DISEASES | | | | | |
| OIE-listed diseases | | | | | |
| 1. Infection with Ranavirus | - | - | +? | III | |
| 2. Infection with <i>Batrachochytrium dendrobatidis</i> | - | - | - | 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 |
| ? | Suspected by reporting officer but presence not confirmed | 0000 | Never reported |
| | | - | 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: **KOREA, REPUBLIC OF**Period: **April-June 2010**

| Item | Disease status ^{a/} | | | Level of diagnosis | Epidemiological comment numbers |
|---|------------------------------|--------|--------|--------------------|---------------------------------|
| | Month | | | | |
| DISEASES PREVALENT IN THE REGION | April | May | June | | |
| FINFISH DISEASES | | | | | |
| 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 | - | - | +? | III | 1 |
| 5. Epizootic ulcerative syndrome | 0000 | 0000 | 0000 | | |
| 6. Red seabream iridoviral disease | (2009) | (2009) | (2009) | III | |
| 7. Koi herpesvirus disease | (2009) | (2009) | + | III | 2 |
| Non OIE-listed diseases | | | | | |
| 8. Grouper iridoviral disease | 0000 | 0000 | 0000 | | |
| 9. Viral encephalopathy and retinopathy | - | - | +? | III | 3 |
| 10. Enteric septicaemia of catfish | 0000 | 0000 | 0000 | | |
| MOLLUSC DISEASES | | | | | |
| OIE-listed diseases | | | | | |
| 1. Infection with <i>Bonamia exitiosa</i> | 0000 | 0000 | 0000 | | |
| 2. Infection with <i>Perkinsus olseni</i> | 0000 | 0000 | 0000 | | |
| 3. Abalone viral mortality | 0000 | 0000 | 0000 | | |
| Non OIE-listed diseases | | | | | |
| 4. Infection with <i>Marteilioides chungmuensis</i> | + | + | + | III | |
| 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 | (2009) | +? | - | III | 4 |
| 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. <i>Monodon</i> 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 <i>Batrachochytrium dendrobatidis</i> | 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 |
| ? | Suspected by reporting officer but presence not confirmed | 0000 | Never reported |
| | | - | 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 | Viral haemorrhagic septicaemia (VHS) was detected from juvenile flounder (<i>Paralichthys olivaceus</i>) from a hatchery in Gyoungju (Gyoungbuk Province) in May. No clinical sign and mortality was observed. The confirmatory diagnosis was performed by National Fisheries Research and Development Institute, Aqua-life Disease Control Division. The VHS-detected fish were culled for control. |
| 2 | KHV was detected from two hatcheries in June. It was detected from juvenile crucian carp (<i>Carassius carassius</i>) and common carp (<i>Cyprinus carpio</i>) in a hatchery in Changwon (Gyoungnam Province), and from juvenile common carp in a hatchery in Sanchung. The confirmatory diagnosis was performed by National Fisheries Research and Development Institute, Aqua-life Disease Control Division. The KHV-detected crucian carps were culled for control. |
| 3 | Viral encephalopathy and retinopathy (VER) was detected from juvenile striped beakperch (<i>Oplegnathus fasciatus</i>) in one hatchery in Tongyoung (Gyoungnam Province) in June. The confirmatory diagnosis was performed by National Fisheries Research and Development Institute, Aqua-life Disease Control Division. The VER-detected fish were culled for control. |
| 4 | WSD virus was detected from juvenile clam (<i>Saxidomus purpuratus</i>) in a hatchery in Gohung (Jeonnam Province) in May. The confirmatory diagnosis was performed by National Fisheries Research and Development Institute, Aqua-life Disease Control Division. The WSD-detected animals were culled for control. |

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

Country: **LAO PDR**

 Period: **April-June 2010**

| Item | Disease status ^{a/} | | | Level of diagnosis | Epidemiological comment numbers |
|---|------------------------------|-----|------|--------------------|---------------------------------|
| | Month | | | | |
| DISEASES PREVALENT IN THE REGION | April | May | June | | |
| FINFISH DISEASES | | | | | |
| 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 <i>Bonamia exitiosa</i> | | | | | |
| 2. Infection with <i>Perkinsus olseni</i> | | | | | |
| 3. Abalone viral mortality | | | | | |
| Non OIE-listed diseases | | | | | |
| 4. Infection with <i>Marteilioides chungmuensis</i> | | | | | |
| 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. <i>Monodon</i> slow growth syndrome | | | | | |
| 9. Milky lobster disease | | | | | |
| AMPHIBIAN DISEASES | | | | | |
| OIE-listed diseases | | | | | |
| 1. Infection with Ranavirus | | | | | |
| 2. Infection with <i>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 |
| ? | Suspected by reporting officer but presence not confirmed | 0000 | Never reported |
| | | - | 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: MYANMAR

Period: April-June 2010

| Item | Disease status ^{a/} | | | Level of diagnosis | Epidemiological comment numbers |
|---|------------------------------|-----|------|--------------------|---------------------------------|
| | Month | | | | |
| | April | May | June | | |
| DISEASES PREVALENT IN THE REGION | | | | | |
| FINFISH DISEASES | | | | | |
| OIE-listed diseases | | | | | |
| 1. Epizootic haematopoietic necrosis | *** | *** | *** | | 1 |
| 2. Infectious haematopoietic necrosis | *** | *** | *** | | 2 |
| 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 <i>Bonamia exitiosa</i> | / | / | / | | |
| 2. Infection with <i>Perkinsus olseni</i> | / | / | / | | |
| 3. Abalone viral mortality | / | / | / | | |
| Non OIE-listed diseases | | | | | |
| 4. Infection with <i>Marteilioides chungmuensis</i> | / | / | / | | |
| 5. Acute viral necrosis (in scallops) | / | / | / | | |
| 6. Akoya oyster disease | / | / | / | | |
| CRUSTACEAN DISEASES | | | | | |
| OIE-listed diseases | | | | | |
| 1. Taura syndrome | - | - | - | III | 3 |
| 2. White spot disease | - | - | - | III | |
| 3. Yellowhead disease | - | - | - | III | |
| 4. Infectious hypodermal and haematopoietic necrosis | - | - | - | III | |
| 5. Infectious myonecrosis | *** | *** | *** | | |
| 6. White tail disease (MrNV) | *** | *** | *** | | |
| Non OIE-listed diseases | | | | | |
| 7. Necrotising hepatopancreatitis | *** | *** | *** | | |
| 8. <i>Monodon</i> slow growth syndrome | *** | *** | *** | | |
| 9. Milky lobster disease | *** | *** | *** | | |
| AMPHIBIAN DISEASES | | | | | |
| OIE-listed diseases | | | | | |
| 1. Infection with Ranavirus | / | / | / | | |
| 2. Infection with <i>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 |
| ? | Suspected by reporting officer but presence not confirmed | 0000 | Never reported |
| | | - | 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 | To encourage increasing the production of fish and shrimp, we visited farms for fish and shrimp health management and control of aquatic animal diseases during the months of April, May and June. |
| 2 | Due to climate change, the quality of rearing water in aquaculture farms worsened and resulted in some disease problems, no serious outbreak was reported. |
| 3 | Received 7 samples of frozen shrimps for export and were found negative to WSSV, IHHNV and TSV after testing. |

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

Country: **NEPAL**

 Period: **April-June 2010**

| Item | Disease status ^{a/} | | | Level of diagnosis | Epidemiological comment numbers |
|---|------------------------------|------|------|--------------------|---------------------------------|
| | Month | | | | |
| DISEASES PREVALENT IN THE REGION | April | May | June | | |
| FINFISH DISEASES | | | | | |
| 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 | |
| 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 <i>Bonamia exitiosa</i> | *** | *** | *** | | |
| 2. Infection with <i>Perkinsus olseni</i> | *** | *** | *** | | |
| 3. Abalone viral mortality | *** | *** | *** | | |
| Non OIE-listed diseases | | | | | |
| 4. Infection with <i>Marteilioides chungmuensis</i> | *** | *** | *** | | |
| 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. <i>Monodon</i> slow growth syndrome | *** | *** | *** | | |
| 9. Milky lobster disease | *** | *** | *** | | |
| AMPHIBIAN DISEASES | | | | | |
| OIE-listed diseases | | | | | |
| 1. Infection with Ranavirus | *** | *** | *** | | |
| 2. Infection with <i>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 |
| ? | Suspected by reporting officer but presence not confirmed | 0000 | Never reported |
| | | - | 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: **April-June 2010**

| Item | Disease status ^{a/} | | | Level of diagnosis | Epidemiological comment numbers |
|---|------------------------------|------|------|--------------------|---------------------------------|
| | Month | | | | |
| DISEASES PREVALENT IN THE REGION | April | May | June | | |
| FINFISH DISEASES | | | | | |
| 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 | |
| 9. Viral encephalopathy and retinopathy | - | - | - | III | |
| 10. Enteric septicaemia of catfish | *** | *** | *** | | |
| MOLLUSC DISEASES | | | | | |
| OIE-listed diseases | | | | | |
| 1. Infection with <i>Bonamia exitiosa</i> | 0000 | 0000 | 0000 | | |
| 2. Infection with <i>Perkinsus olseni</i> | 0000 | 0000 | 0000 | | |
| 3. Abalone viral mortality | *** | *** | *** | | |
| Non OIE-listed diseases | | | | | |
| 4. Infection with <i>Marteilioides chungmuensis</i> | 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 | 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 |
| 6. White tail disease (MrNV) | *** | *** | *** | | |
| Non OIE-listed diseases | | | | | |
| 7. Necrotising hepatopancreatitis | 0000 | 0000 | 0000 | III | 7 |
| 8. <i>Monodon</i> slow growth syndrome | *** | *** | *** | | |
| 9. Milky lobster disease | *** | *** | *** | | |
| AMPHIBIAN DISEASES | | | | | |
| OIE-listed diseases | | | | | |
| 1. Infection with Ranavirus | *** | *** | *** | | |
| 2. Infection with <i>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 |
| ? | Suspected by reporting officer but presence not confirmed | 0000 | Never reported |
| | | - | 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 | Ten (10) pieces of koi carp (<i>Cyprinus carpio koi</i>) were collected for analysis from a koi shop in Quezon City and all samples showed a negative result for <i>Koi Herpesvirus</i> (KHV). Examinations/tests were conducted by the BFAR Central Office Fish Health Laboratory. |
| 2 | Twenty (20) samples of <i>Penaeus vannamei</i> of different stages (broodstock, nauplii and adult) were collected from Iloilo City, Cebu, Zambales and Davao del Sur. All samples showed a negative result for <i>Taura Syndrome Virus</i> (TSV) through PCR test. Examinations/tests were conducted by the BFAR Central Office Fish Health Laboratory. |
| 3 | A total of thirty (30) samples (5 <i>Peneaus monodon</i> ; 22 <i>Peneaus vannamei</i> ; 1 <i>Panulirus ornatus</i> ; and 2 hermit crabs) of different stages (broodstock, nauplii and adult) were analyzed using the PCR test. The different samples were collected from Sorsogon, Camarines Sur, Tacloban City, Iloilo City, Davao del Sur, Cebu, Davao City, Zambales, Parañaque City and Antipolo City. All thirty (30) samples showed a negative result for <i>White Spot Syndrome Virus</i> (WSSV). Examinations/tests were conducted by the BFAR Central Office Fish Health Laboratory. |
| 4 | Twenty (20) samples of <i>Peneaus vannamei</i> of different stages (broodstock, nauplii and adult) were analyzed using the PCR test and all samples showed a negative result for <i>Yellowhead Virus</i> (YHV). The samples were collected from Iloilo City, Cebu, Zambales and Davao del Sur. Examinations/tests were conducted by the BFAR Central Office Fish Health Laboratory. |

| | |
|---|---|
| 5 | All twenty-six (26) samples (21 <i>Peneaus vannamei</i> ; 5 <i>Peneaus monodon</i>) of different stages (broodstock, post-larval, nauplii and adult) showed a negative result for <i>Infectious Hypodermal and Haematopoietic Necrosis Virus</i> (IHHNV) using PCR test. The samples were collected from Tacloban City, Iloilo City, Davao del Sur, Cebu, Zambales, Sorsogon and Camarines Sur. Examinations/tests were conducted by the BFAR Central Office Fish Health Laboratory. |
| 6 | A total of twenty (20) samples of <i>Peneaus vannamei</i> of different stages (broodstock, nauplii and adult) were collected from Iloilo City, Cebu, Zambales and Davao del Sur. All twenty (20) samples showed a negative result for <i>Infectious Myonecrosis Virus</i> (IMNV) through PCR test. Examinations/tests were conducted by the BFAR Central Office Fish Health Laboratory. |
| 7 | Twenty-one (21) samples of <i>Peneaus vannamei</i> of different stages (broodstock, nauplii and adult) were collected from Iloilo City, Cebu, Zambales, and Davao del Sur. All twenty-one (21) samples showed a negative result for <i>Necrotising Hepatopancreatitis Virus</i> (NHPV) 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: **April-June 2010**

| Item | Disease status ^{a/} | | | Level of diagnosis | Epidemiological comment numbers |
|---|------------------------------|--------|--------|--------------------|---------------------------------|
| | Month | | | | |
| DISEASES PREVALENT IN THE REGION | April | May | June | | |
| FINFISH DISEASES | | | | | |
| 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 | (2010) | (2010) | (2010) | III | |
| Non OIE-listed diseases | | | | | |
| 8. Grouper iridoviral disease | - | - | + | I, II & III | 1 |
| 9. Viral encephalopathy and retinopathy | - | - | - | | |
| 10. Enteric septicaemia of catfish | 0000 | 0000 | 0000 | | |
| MOLLUSC DISEASES | | | | | |
| OIE-listed diseases | | | | | |
| 1. Infection with <i>Bonamia exitiosa</i> | *** | *** | *** | | |
| 2. Infection with <i>Perkinsus olseni</i> | *** | *** | *** | | |
| 3. Abalone viral mortality | *** | *** | *** | | |
| Non OIE-listed diseases | | | | | |
| 4. Infection with <i>Marteilioides chungmuensis</i> | *** | *** | *** | | |
| 5. Acute viral necrosis (in scallops) | *** | *** | *** | | |
| 6. Akoya oyster disease | *** | *** | *** | | |
| CRUSTACEAN DISEASES | | | | | |
| OIE-listed diseases | | | | | |
| 1. Taura syndrome | *** | *** | *** | | |
| 2. White spot disease | (2010) | (2010) | (2010) | | |
| 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. <i>Monodon</i> slow growth syndrome | *** | *** | *** | | |
| 9. Milky lobster disease | *** | *** | *** | | |
| AMPHIBIAN DISEASES | | | | | |
| OIE-listed diseases | | | | | |
| 1. Infection with Ranavirus | *** | *** | *** | | |
| 2. Infection with <i>Batrachochytrium dendrobatidis</i> | *** | *** | *** | | |
| ANY OTHER DISEASES OF IMPORTANCE | | | | | |
| 1. Mullet systemic iridoviral disease | + | (2010) | (2010) | I, II & III | 2 |
| 2. Sea Bass Iridovirus | (2010) | (2010) | (2010) | | |

| | | | |
|---|---|--------|--|
| <p>DISEASES PRESUMED EXOTIC TO THE REGION^b LISTED BY THE OIE Finfish: Infectious salmon anaemia; Gyrodactylosis (<i>Gyrodactylus salaris</i>). Molluscs: Infection with <i>Bonamia ostreae</i>; <i>Marteilia refringens</i>; <i>Perkinsus marinus</i>; <i>Xenohaliotis californiensis</i>. Crustaceans: Crayfish plague (<i>Aphanomyces astaci</i>). NOT LISTED BY THE OIE Finfish: Channel catfish virus disease</p> | | | |
| <p>a/ Please use the following symbols:</p> | | | |
| + | 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 |
| ? | Suspected by reporting officer but presence not confirmed | 0000 | Never reported |
| | | - | Not reported (but disease is known to occur) |
| | | (year) | Year of last occurrence |
| <p>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</p> | | | |

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 | Infectious spleen and kidney necrosis virus (ISKNV) was detected by PCR in a batch of tiger grouper submitted by a land-based food fish farm. Post-mortem and histopathological findings were strongly suggestive of grouper iridoviral disease. The virus had been detected in previous batches of groupers and seabass submitted by this farm in February and March this year. The farmer was advised to control mortality by culling diseased fish and disinfecting tanks and equipments before introducing new fish. |
| 2 | ISKNV was detected by PCR in mullet submitted from a floating net cage farm. Histopathological findings revealed viral inclusion bodies in liver, choroid of the eye, spleen, kidney, heart, gills and blood vessel lumen, which was confirmatory for mullet systemic iridoviral disease. The farmer was advised to remove affected and dead fish from the water, and reduce stress and handling of the fish. |

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

Country: **SRI LANKA**Period: **April-June 2010**

| Item | Disease status ^{a/} | | | Level of diagnosis | Epidemiological comment numbers |
|---|------------------------------|------|------|--------------------|---------------------------------|
| | Month | | | | |
| DISEASES PREVALENT IN THE REGION | April | May | June | | |
| FINFISH DISEASES | | | | | |
| 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 <i>Bonamia exitiosa</i> | *** | *** | *** | | |
| 2. Infection with <i>Perkinsus olseni</i> | *** | *** | *** | | |
| 3. Abalone viral mortality | 0000 | 0000 | 0000 | | |
| Non OIE-listed diseases | | | | | |
| 4. Infection with <i>Marteilioides chungmuensis</i> | *** | *** | *** | | |
| 5. Acute viral necrosis (in scallops) | *** | *** | *** | | |
| 6. Akoya oyster disease | 0000 | 0000 | 0000 | | |
| CRUSTACEAN DISEASES | | | | | |
| OIE-listed diseases | | | | | |
| 1. Taura syndrome | 0000 | 0000 | 0000 | III | |
| 2. White spot disease | + | + | + | III | 1 |
| 3. Yellowhead disease | *** | *** | *** | III | 3 |
| 4. Infectious hypodermal and haematopoietic necrosis | + | + | + | III | 2 |
| 5. Infectious myonecrosis | *** | *** | *** | | |
| 6. White tail disease (MrNV) | *** | *** | *** | | |
| Non OIE-listed diseases | | | | | |
| 7. Necrotising hepatopancreatitis | *** | *** | *** | | |
| 8. <i>Monodon</i> slow growth syndrome | *** | *** | *** | | |
| 9. Milky lobster disease | *** | *** | *** | | |
| AMPHIBIAN DISEASES | | | | | |
| OIE-listed diseases | | | | | |
| 1. Infection with Ranavirus | 0000 | 0000 | 0000 | | |
| 2. Infection with <i>Batrachochytrium dendrobatidis</i> | 0000 | 0000 | 0000 | | |
| ANY OTHER DISEASES OF IMPORTANCE | | | | | |
| 1. | | | | | |
| 2. | | | | | |

| | | | |
|---|---|--------|--|
| <p>DISEASES PRESUMED EXOTIC TO THE REGION^b LISTED BY THE OIE Finfish: Infectious salmon anaemia; Gyrodactylosis (<i>Gyrodactylus salaris</i>). Molluscs: Infection with <i>Bonamia ostreae</i>; <i>Marteilia refringens</i>; <i>Perkinsus marinus</i>; <i>Xenohaliotis californiensis</i>. Crustaceans: Crayfish plague (<i>Aphanomyces astaci</i>). NOT LISTED BY THE OIE Finfish: Channel catfish virus disease</p> | | | |
| <p>a/ Please use the following symbols:</p> | | | |
| + | 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 |
| ? | Suspected by reporting officer but presence not confirmed | 0000 | Never reported |
| | | - | Not reported (but disease is known to occur) |
| | | (year) | Year of last occurrence |
| <p>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</p> | | | |

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 | <p>WSSV</p> <p>A total of 115 <i>P. monodon</i> wild brooder samples were tested using the IQ2000 two-step PCR method and also using another 2-step PCR for the presence of WSSV, the prevalence was 27%, which indicated a considerable contamination of wild brooders collected from different locations around Sri Lanka, and has become an on-going problem for 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.</p> <p>The prevalence of WSSV in postlarvae samples obtained from shrimp hatcheries was 12%, which is low compared to the wild brooders.</p> <p>There were three shrimp farms reported infected with WSSV with a total pond area of 4.4 ha. Samples obtained from <i>Scylla serrata</i> fattening ponds located in the northwestern province indicated ~50% prevalence of WSSV.</p> <p>The above data were derived from the National Aquatic Resources Research and Development Agency (NARA) and from the Shrimp Farm Extension and Monitoring Unit at Bathtuluoya (NAQDA).</p> |
| 2 | <p>IHHNV</p> <p>Out of 115 samples tested for IHHNV, 26% prevalence was observed among <i>P. monodon</i> postlarvae, sub-adults and brooders. PCR results also indicated presence of IHHNV-related types in Sri Lanka (types A and B) with prevalence of >60%. Data derived from NARA, head office Colombo 15.</p> |

| | |
|---|--|
| 3 | YHV 79 <i>P. monodon</i> samples were tested for YHV using OIE-recommended 2-step RT-PCR for consensus detection of YHV genotypes, and results indicated negative for all samples. Data derived from NARA, head office Colombo 15. |
|---|--|

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

Country: **THAILAND**

 Period: **April-June 2010**

| Item | Disease status ^{a/} | | | Level of diagnosis | Epidemiological comment numbers |
|---|------------------------------|--------|--------|--------------------|---------------------------------|
| | Month | | | | |
| DISEASES PREVALENT IN THE REGION | April | May | June | | |
| FINFISH DISEASES | | | | | |
| 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 | |
| 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 <i>Bonamia exitiosa</i> | 0000 | 0000 | 0000 | II | |
| 2. Infection with <i>Perkinsus olseni</i> | 0000 | 0000 | 0000 | II | |
| 3. Abalone viral mortality | 0000 | 0000 | 0000 | II | |
| Non OIE-listed diseases | | | | | |
| 4. Infection with <i>Marteilioides chungmuensis</i> | 0000 | 0000 | 0000 | II | |
| 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 | 3 |
| 4. Infectious hypodermal and haematopoietic necrosis | + | + | + | III | 4 |
| 5. Infectious myonecrosis | 0000 | 0000 | 0000 | III | |
| 6. White tail disease (MrNV) | - | + | - | | 5 |
| Non OIE-listed diseases | | | | | |
| 7. Necrotising hepatopancreatitis | *** | *** | *** | | |
| 8. <i>Monodon</i> 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 <i>Batrachochytrium dendrobatidis</i> | 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 (<i>Gyrodactylus salaris</i>). | | | |
| Molluscs: Infection with <i>Bonamia ostreae</i> ; <i>Marteilia refringens</i> ; <i>Perkinsus marinus</i> ; <i>Xenohaliotis californiensis</i> . | | | |
| Crustaceans: Crayfish plague (<i>Aphanomyces astaci</i>). | | | |
| 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 |
| ? | Suspected by reporting officer but presence not confirmed | 0000 | Never reported |
| | | - | 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 331 shrimp samples from shrimp farms had been tested at PCR Laboratories of the DOF under active surveillance. 3 specimens or 0.9 % recorded as PCR positive or carrying TSV genes. Shrimp farms with positive testing results will subject to health improvement, movement control, eradication and/or farm disinfection. |
| 2 | A total of 328 shrimp samples from shrimp farms had been tested at PCR Laboratories of the DOF under active surveillance. 1 specimen or 0.3 % recorded as PCR positive or carrying WSSV genes. Shrimp farms with positive testing results will subject to health improvement, movement control, eradication and/or farm disinfection. |
| 3 | A total of 331 shrimp samples from shrimp farms had been tested at PCR Laboratories of the DOF under active surveillance. 3 specimens or 0.9 % recorded as RT-PCR positive or carrying YHV genes. Shrimp farms with positive testing results will subject to health improvement, movement control, eradication and/or farm disinfection. |
| 4 | A total of 261 shrimp samples from shrimp farms had been tested at PCR Laboratories of the DOF under active surveillance. 13 specimens or 4.9 % recorded as PCR positive or carrying IHNV genes. Shrimp farms with positive testing results will subject to health improvement, movement control, eradication and/or farm disinfection. |
| 5 | 56 healthy giant prawn specimens from growout farms were sampled under the MrNV surveillance program using RT-PCR technique. All specimens were PCR negative for MrNV. Samplings in the prawn hatcheries during this surveillance period found positive for MrNV in 2 specimens out of 17 specimens. Concepts in bio-security for disease prevention had been advised to farm operators. |

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

Country: **VIETNAM**

 Period: **April-June 2010**

| Item | Disease status ^{a/} | | | Level of diagnosis | Epidemiological comment numbers |
|---|------------------------------|------|------|--------------------|---------------------------------|
| | Month | | | | |
| DISEASES PREVALENT IN THE REGION | April | May | June | | |
| FINFISH DISEASES | | | | | |
| 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 <i>Bonamia exitiosa</i> | 0000 | 0000 | 0000 | | |
| 2. Infection with <i>Perkinsus olseni</i> | 0000 | 0000 | 0000 | | |
| 3. Abalone viral mortality | 0000 | 0000 | 0000 | | |
| Non OIE-listed diseases | | | | | |
| 4. Infection with <i>Marteilioides chungmuensis</i> | 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 | 0000 | 0000 | 0000 | | |
| 8. <i>Monodon</i> slow growth syndrome | + | + | + | I,III | 3 |
| 9. Milky lobster disease | - | - | - | | |
| AMPHIBIAN DISEASES | | | | | |
| OIE-listed diseases | | | | | |
| 1. Infection with Ranavirus | 0000 | 0000 | 0000 | | |
| 2. Infection with <i>Batrachochytrium dendrobatidis</i> | 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 |
| ? | Suspected by reporting officer but presence not confirmed | 0000 | Never reported |
| | | - | 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 | <p>Pathogen: <i>Edwardsiella ictaluri</i>.</p> <p>Infection found in intensive catfish (<i>Pangasius hypophthalmus</i>) farms.</p> <p>This disease occurred in May 2010 in Hau Giang (0.43 ha/202 ha) and Dong Thap (86 ha/1572 ha) provinces.</p> <p>Clinical Signs: loss of appetite, bulging and opaque eyes (blindness), petechiae and haemorrhages around the mouth, abdominal region and fin base. Internally, haemorrhages and white necrotic foci in the liver, kidney and other organs. Enteritis, systemic oedema, accumulation of yellow or bascitic fluid in the body cavity, and enlargement of spleen. Swelled bladder.</p> <p>Control measures: water change, antibiotic treatments (e.g. florfenicol, enrofloxacin) mixed with feeds, water treatment with chlorine and BKC.</p> |
| 2 | <p>Pathogen: White Spot Syndrome Virus (WSSV)</p> <p>Disease found in black tiger shrimp (<i>Penaeus monodon</i>) and white leg shrimp (<i>P. vannamei</i>).</p> <p>The disease occurred in Nghe An, Ha Tinh, Quang Binh, Quang Tri, Thua Thien Hue, Quang Ngai, Phu Yen, Kien Gang and Ben Tre provinces. Total area: 363 has.</p> <p>Mortality rate: high, 100% in some cases within 10 days.</p> <p>Clinical signs: lethargic or moribund shrimps accumulated at pond surface and near pond dikes, slow to erratic swimming behavior. Overall body color often reddish. Minute to large (0.5-2.0 mm diameter) white inclusions embedded in the cuticle, especially in the removed carapace when viewed against light after scraping-off attached tissues (not always seen).</p> <p>Control Measures: strict isolation of affected ponds with movement controls of affected shrimps. Disinfection of affected ponds with chlorine.</p> |

| | |
|---|--|
| 3 | <p>Pathogen: Baculovirus.</p> <p>Infection found in black tiger shrimp (<i>Penaeus monodon</i>).</p> <p>Disease characteristics: darkened body color, loss of appetite, slow and stunted growth.</p> <p>The disease was reported in Thua Thien Hue province.</p> |
|---|--|

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 <i>Bonamia exitiosa</i> | 1. Infection with <i>Marteilioides chungmuensis</i> |
| 2. Infection with <i>Perkinsus olseni</i> | 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 <i>Bachtracochytrium dendrobatidis</i> | |
| 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 (<i>Gyrodactylus salaris</i>) | |
| 2.2 Molluscs | |
| OIE-listed diseases | Non OIE-listed diseases |
| 1. Infection with <i>Bonamia ostreae</i> | |
| 2. Infection with <i>Marteilia refringens</i> | |
| 3. Infection with <i>Perkinsus marinus</i> | |
| 4. Infection with <i>Xenohaliotis californiensis</i> | |
| 2.3 Crustaceans | |
| OIE-listed diseases | Non OIE-listed diseases |
| 1. Crayfish plague (<i>Aphanomyces astaci</i>) | |

^{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, R.P. 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 AG¹, Bangkok, Thailand, November 7-9, 2001)

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

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

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

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

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

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

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

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

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

Please use the following symbols to fill in the forms.

A. Symbols used for negative occurrence are as follows:

*** This symbol means that no information on a disease in question is available due to reasons such as lack of surveillance systems or expertise.

- This symbol is used when a disease is not reported during a reporting period. However the disease is known to be present in the country (date of last outbreak is not always known).

0000 This symbol is used when disease surveillance is in place and a disease has never been reported.

(year) Year of last occurrence (a disease has been absent since then).

B. Symbols used for positive occurrence are shown below.

+ This symbol means that the disease in question is reported or known to be present.

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

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

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

¹ Regional Advisory Group on Aquatic Animal Health (AG)

C. Levels of Diagnosis

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

D. Subjects to be covered in the Epidemiological Comments

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

IMPORTANT

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

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

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