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Disease Control in Fish and Shrimp Aquaculture

Global Aquatic Disease Control Activities of OIE and the Fish Diseases Commission

Barry Hill

Centre for Environment, Fisheries and Aquaculture Science Weymouth Laboratory, Barack Road, the Nothe Weymouth, Dorset DT4 8UB, United Kingdom

The Office International des Epizooties (OIE), also known as the World Organization for Animal Health, is an intergovernmental veterinary organization established in 1924 in order to promote world animal health. Its Central Bureau is based in Paris. One of its main activities is to provide guidelines and standards for health regulations applicable to international trade in live animals and their products. Among the main objectives of the OIE is to increase general awareness of disease problems associated with trade in live animals and animal products, including aquatic animals, and to promote means for diagnosis, control or prevention. These objectives generate an approach based upon the following: coordination of investigations of communicable animal diseases for which international cooperation is essential; collection of information on epizootics and control measures applied by the Member Countries; and an advisory role in preparing international standards or agreements pertaining to animal health. The communication of animal health information to Member Countries occurs through their respective Veterinary/Animal Health Services, although in some Member Countries, another Authority, rather than the National Veterinary Services, is responsible for aquatic animal health. Good communication and cooperation between such different national authorities within a country is important.

The OIE established the Fish Diseases Commission (FDC) in 1960 to deal specifically with the increase of fish diseases as aquaculture expanded worldwide. From 1988, the scope of the FDC was extended to include diseases and pathogens of molluscs and crustaceans. The OIE approach to animal health control in aquaculture involves making recommendations to Member Countries to apply the following measures:

- assessment of the health status of aquatic animals in a production site, based upon inspections and standardized sampling procedures followed by laboratory examinations conducted in accordance with the instructions given in the OIE *Diagnostic Manual for Aquatic Animal Diseases*;
- restocking of open waters and fanning facilities with products of a health status higher than, or equal to, that of the area concerned;
- eradication of diseases of socio-economic importance whenever possible; and
- notification by every Member Country of additional requirements, in addition to those provided by the *Aquatic Code*, for the importation of aquatic animals and aquatic animal products.

If the above procedures are used, it becomes possible to define the health status of aquaculture animals and products for specified pathogens, according to the country, zone or

production site of origin. The health status of the product can thus be warranted by the issue of a health certificate by the appropriate official, stating that the aquaculture products in a defined consignment originate from a country, zone or farm/harvesting site free of the specified pathogens listed in the *Aquatic Code* and possibly of other specified diseases. Aquatic animal diseases included in the OIE system are classified into one of two lists ('notifiable diseases' and 'other significant diseases') on the basis of their socio-economic importance, geographic range and aetiology.

The OIE control policy is thus based on regulations focused on certain diseases, leading to certification of acceptable sources of aquaculture products for national and international trade. The origin is considered as either entire country, zone or protected facility, demonstrated to be officially free of these pathogens, through the implementation of a national health surveillance scheme that employs sampling and laboratory techniques described in the *Manual*.

Both the *International Aquatic Animal Health Code* and *Diagnostic Manual for Aquatic Animal Diseases* are updated annually. Member Countries may propose changes through their Chief Veterinary Officers who communicate directly with the OIE. The proposed changes are examined by the Fish Diseases Commission and draft recommendations are prepared for consideration by Member Countries at the annual General Session held in Paris each year.

New occurrences of diseases in a previously free region must be reported to the OIE in accordance with the reporting requirements of the OIE. The urgency of dispatching information varies according to the nature of the disease. The OIE has devised a warning system whereby Member Countries can take action rapidly should the need arise: countries are required to notify the Central Bureau within 24 hours of the occurrence of an outbreak of a notifiable aquatic animal disease, or any other contagious disease likely to have serious repercussions on public health or the economy of animal production (including aquatic animal production). The OIE immediately dispatches these data by telex, telegram, fax or electronic mail directly to Member Countries at risk, and in weekly announcements (in *Disease Information*) to other countries. In addition to the 'alert' system, information received from Member Countries is distributed on a periodical basis:

- the monthly Bulletin provides data on the course of notifiable diseases month by month. The *Bulletin* also contains sections devoted to the epidemiology and control of the principal contagious diseases and to the activities of the OIE; and
- the annual World Animal Health provides yearly statistics for the OIE notifiable aquatic animal diseases, giving data on the occurrence of diseases in each Member Country, and annual animal health status reports for all Member Countries. These summarize control methods adopted by each country.

It is the task of the FDC to assist Member Countries to overcome limitations related to implementing the above aspects. First, this is done by increasing general awareness of the role and activities of the OIE in the health control of aquatic animals. The OIE has published a brochure describing the aims and objectives of the FDC and there is an FDC web page on the main OIE web site providing information on the work of the FDC as well as making the Aquatic Code and Diagnostic Manual freely available on-line and giving news of any recent important developments in the occurrence of OIE-listed aquatic animal diseases worldwide. There are

useful links to other web sites dealing with aquatic animal health issues, including the International Database on Aquatic Animal Diseases which provides data on the occurrence by country and host of all the OIE-listed diseases of fish and shellfish. There is also active FDC participation in educational programmes to facilitate training of specialists in health problems encountered in aquaculture: members of the Fish Diseases Commission have been involved in several training programmes on aquatic animal diseases in several countries.

Another important aspect is to gather scientific information enabling more acceptable methods of aquatic animal disease therapy, which has been increasingly threatened by restrictive regulations, due not least to media campaigns on residues in fanned aquatic animals. This impact was a major theme at the OIE International Symposium on Chemotherapy in Aquaculture in 1991 and the proceedings were published by OIE in 1992. The problem of disease transfer by international trade in aquatic animals was discussed in depth at the International Conference on Preventing the Spread of Aquatic Animal Diseases through International Trade held in Paris in June 1995; the papers presented and discussions held at this Conference were published in the OIE *Scientific and Technical Review* in June 1996. Since risk analysis has become more and more important in the international trade of live aquatic animals and animal products, the FDC has decided to increase its involvement in this area. The International Conference on Risk Analysis in Aquatic Animal Health held at OIE in February 2000 is one aspect of this endeavour; the proceedings of this conference have also recently been published.

Finally, an effort is being made to further promote cooperation with other international organizations (*e.g.* the European Union [EU], the Food and Agriculture Organization [FAO] of the United Nations and the Network of Aquaculture Centres in Asia and Pacific Region [NACA]) involved in health surveillance and disease control policies in aquaculture so that common agreements are reached, resulting in a merging of the various approaches.