

# Role Of Aquatic Animal Health Associations In Spain

Ruiz-Zarzuola, I<sup>1</sup>; de Blas, I<sup>1</sup>; Gironés, O<sup>1</sup>; Vendrell, D<sup>1</sup>; Balcázar, JL<sup>1</sup>; Muzquiz JL<sup>1</sup>

<sup>1</sup>Laboratory of Fish Pathology, University of Zaragoza, Zaragoza, Spain.

## Abstract

Implementation of Eradication and Control Programmes for aquatic diseases requires carrying out a targeted surveillance system. In some regions of Northern Spain, as Aragon, Navarra, La Rioja, Galicia and Asturias, these programmes are supported by fish producers and Regional Governments, and they are applied by the Aquatic Animal Health Associations (AAHA) attending to requirement established by European legislation (Directive 91/67, Directive 93/53 and Decision 2001/183). From 1997 these associations has the responsibility of surveillance system based in sampling of farmed and wild fish population in order to detect the more relevant viral pathogens as Viral Haemorrhagic Septicaemia (VHS) and Infectious Haematopoietic Necrosis (IHN). As result of this activity, current status of these regions is free-disease zones for VHS and IHN. Additionally diagnostic services are provided to fish farmers and in case of abnormal mortalities in wild fish populations. Requirements about structure, working and role of these associations are detailed in this work. We analyze also the future perspectives of these AAHA.

## Current status of european legislation

The EU has adopted specific legislation on animal health in order to control and reduce the impact of diseases in farmed populations (that is: to reduce the constrains that disease impose to sustainability of animal production) and wild populations (in order to preserve ecosystems) and to prevent and effectively respond to new diseases that threaten animal health. EU legislation establishes the requirements for surveillance programmes (detection of disease) and monitoring (status and distribution of disease and pathogen).

Special considerations are needed for zoonotic diseases and pathogens with public health impact such as Bovine Spongiform Encephalopathy (BSE), Salmonellosis, Brucellosis and Tuberculosis for terrestrial animals, biotoxins in molluscs and parasites like *Anisakis* in fish. These diseases are subject to special food safety control measures, and for this reason will be excluded of our review. Only brief comments will be made about relevant food safety legislation as it applies to surveillance in aquatic animals.

The European legislation on surveillance for animal diseases is based on two principal legislative acts:

### - Council Directive 82/894/EEC on the notification of animal diseases within the Community.

Fish and shellfish were excluded from the species of interest listed in the first version of Annex I. However all the notifiable diseases for fish and shellfish are according to this Directive and they must to cover all requirements related with the notification of animal diseases within the Community.[ARC1] The aquatic animal diseases that are currently subject to notification and are listed in Annex I are: Infectious haematopoietic necrosis (IHN), Infectious salmon anaemia (ISA) and Viral haemorrhagic septicaemia (VHS). Also outbreaks in wild populations are considered in Annex II as relevant information to be given under notification.

### - Council Decision 90/638/EEC laying down Community criteria for the eradication and monitoring of certain animal diseases.

Annex I specifies the requirements for eradication programmes that must include a description of the epidemiological situation of the disease (and therefore the need to carry out epidemiological surveys) and if necessary, a description of the analysis, test and sampling methods used for each disease. For control programmes the criteria are

listed in Annex II which indicates that a monitoring program must be based on serological, microbiological, pathological or epidemiological analyses, or any other method appropriate to the disease and a system for ascertaining the absence of the disease in the light of its epidemiological characteristics. Therefore epidemiological surveys to detect disease must be implemented.

European legislation on surveillance of fish and shellfish diseases are included in the framework of the establishment of control measures in order to certify the animal health status. The Directives that define these measures and therefore the surveillance methodology (and all their subsequent amendments) are as follows:

- Council Directive 91/67/EEC concerning the animal health conditions governing the marketing of aquaculture animals and products.
- Council Directive 93/53/EEC introducing minimum Community measures for the control of certain fish diseases.
- Council Directive 95/70/EC introducing minimum Community measures for the control of certain diseases affecting bivalve molluscs.

The regulated aspects in the EU legislation include the need to know the animal health situation using a notification system (Directive 82/894) and classifying territories by health status for a list of diseases in order to govern movements of aquatic animals and its products (Directive 91/67), the establishment of control measures (Directives 93/53/EEC and 95/70/ECC), establishment of National Reference Laboratories and the Community Reference Laboratory (Directives 93/53/EEC and 95/70/ECC).

Diseases subjected to these Directives are listed in Annex A of Directive 91/67 depending on relevance and host. For fish there are three categories with a total of five viral diseases, three bacterial diseases and one parasitic disease:

- List I (for exotic diseases): Infectious Salmon Anaemia (ISA)
- List II (for important endemic diseases that should be contained and eradicated in the long term): Viral Haemorrhagic Septicaemia (VHS) and Infectious Haematopoietic Necrosis (IHN)
- List III: Infectious Pancreatic Necrosis (IPN), Spring Viraemia of Carp (SVC), Bacterial Kidney Disease (BKD) (caused by *Renibacterium salmoninarum*), Furunculosis (caused by *Aeromonas salmonicida*), Enteric Redmouth disease (ERM) (caused by *Yersinia ruckeri*) and *Gyrodactylus salaris*.

For molluscs two pathogens (parasites) are included in List II (*Bonamia ostreae* and *Marteilia refringens*) and for crustaceans only include one disease caused by a fungus in List III (crayfish plague caused by *Aphanomyces astaci*).

Further specific Decisions have been published in order to lay down the diagnostic methods and sampling plans for some diseases (Decisions 2001/183, 2002/878 and 2004/453), to establish disease free territories (countries, zones or farms) and non-approved zones (Decision 2002/308; it is amending by different Decisions, the last one with an updated Annex being Decision 2005/475) and to approve programmes to obtain the disease free status (Decision 2003/634; Last updated Annexes are in Decision 2005/67 with a modification in Decision 2005/414).

In this context all farms rearing or keeping fish or molluscs susceptible to listed diseases must be registered by the official service and keep records of mortality and movement of animals into and out of the farm. In case of suspicion of outbreak the farm must be investigated in order to confirm the presence of a pathogen and movements must to be forbidden until the disease is ruled out or eradicated. An early detection system can reduce the spread of disease if strict restriction of animal movements is applied in order to reduce the transfer of pathogens and emergence of disease in other territories.

Recently (September 2005) the Commission has proposed a new Council Directive on animal health requirements for aquaculture animals and products thereof, and on the prevention and control of certain diseases in aquatic animals in order to repeal Directives 91/67, 93/53 and 95/70, that they will be merged into one. Most significant changes are related with a new strategy for animal health surveillance based in risk analysis, with emphasis in traceability of all animal movements and considering specially the role of wild aquatic populations in spreading of diseases. Also it changes list of diseases listed, with differences between exotic and non-exotic diseases.

Taking into account all these regulations that are adopted by Spanish legislation it is necessary to consider the role of a specific organizations called Aquatic Animal Health Associations (AAHA).

### **Aquatic animal health associations (aaha)**

AAHAs are basically structured around an official diagnostic laboratory, with a network of official veterinarians that acts as fish inspectors and that are the responsible of sampling collection. But also other stakeholders are involved as fish producers, fishermen associations and Regional Departments of Wildlife and Environment. Communication between all participants is one of the most important factors in order to coordinate different activities. Currently, there are AAHA in Aragón, Asturias, La Rioja, Galicia and Navarra.

The main activities of the AAHA are to give support to official surveys established by European legislation in order to get and maintain free disease status of the different regions, to control movements of fish between fish farms ensuring health status, to register abnormal mortalities in farms and wild populations and to coordinate preventive medicine programmes. Official surveys are carried out from more than 15 years in different regions from the North of Spain, and currently most of this are is declared as free of VHS and IHN. Not only fish farms are included in the official surveys, also wild populations in rivers and coastal areas are included in surveillance programmes, with special emphasis in fish reared for restocking purposes.

One of the more important problems in Spain related with fish health is that, historically, veterinarians has been far from these species, and no specialization in this area has been included in syllabus of Veterinary degree. Furthermore, official veterinarians had not received specific training in aquatic animal health, except in rare cases. Normally official veterinarians are only specialist in terrestrial animals, and it is very difficult to create a group of expert because fish farms are distributed in a broad area, and structure of Veterinary Services is county-level based. In this context the existence of a specialized veterinary included as key part of the AAHAs, allow to support to official Veterinary Services in order to check fish health status before certificate movements of animals. Also, in case of abnormal mortalities or relevant outbreaks, the veterinarians of AAHA are the most adequate persons to collect epidemiological information and samples for diagnostic. And normally they acts as coordinators of all measures adopted in order to control and/or eradicate the potential diseases.

Finally, it is important to remark the role of AAHA as expert advisors in other topics related with aquatic health, as authorized and forbidden treatments (disinfectants, antibiotics, antiparasitic and vaccines), design of vaccination programmes and even development of field trials in order to further registration of new alternatives for treatment and prevention.

### **Conclusion**

AAHAs are a key element in current surveillance activities in Spain, but they should develop a more intense activity in the future taking into account the future regulations that establish a risk-based surveillance.