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The talk on fish health

Our interviewees are five of the best known scientists working on fish health issues in aquaculture. The talk on fish health covers fish epizootics, viral diseases, among others, and ways to control them. In a nutshell, countries are enjoined to put in contingency plans for disease outbreaks and cooperate on worldwide disease reporting programs while individual farms are urged to practice good farm management to keep the fish healthy and happy.



DR. BARRY HILL

Containing the diseases in aquaculture

Dr. Barry Hill is an expert on disease zoning and advises governments on health management guidelines. He is the Secretary-General of the Fish Disease Commission of the Office International des Epizooties or the

OIE (also known as the World Organization for Animal Health). OIE is an intergovernmental veterinary organization created through an international agreement of 28 countries in 1924, and as of May 2001, its membership totalled 158. Its central bureau is based in Paris.

One of OIE's main activities is to provide guidelines and standards for health regulations applicable to international trade in live animals and their products. OIE also coordinates investigations of communicable animal disease and collection of information on epizootics and control measures applied by its member countries. It has devised an early warning system to apprise its member countries of the occurrence of disease outbreaks (listed as notifiable or contagious) that would have serious repercussions on public health or the economics of animal production.

What is an epizootic?

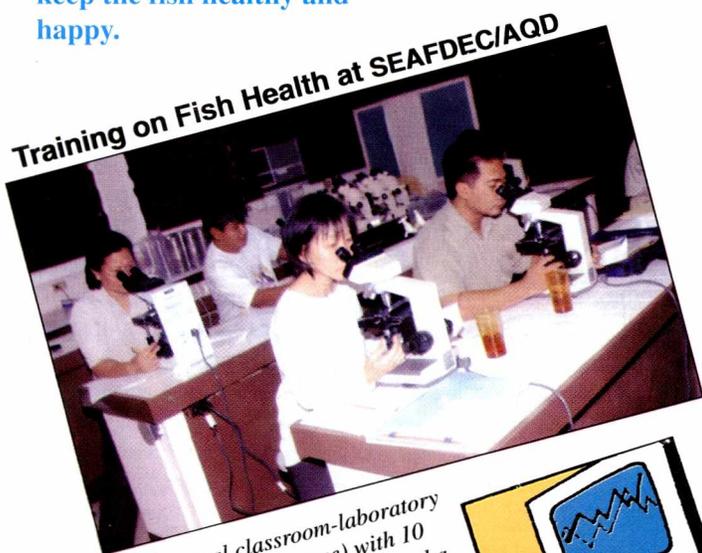
Epizootic is an animal disease episode equivalent to an epidemic in human health.

When do we know that an epizootic exists in an area?

When you get confirmatory diagnosis of an increasing number of cases. When you start to see it expanding towards the population, to a certain size, it becomes an epizootic.

Do epizootics have stages (such as early and alarm stages)?

Yes. The initial emergence or the original point of outbreak is the focal point, but it could be several focal points depending on how (the disease) came in. (The disease) could start in a few affected animals, in several places; this is the initial phase. Then (the disease) breaks out into the first farms until (the number of) farms increases. This is an expansion. If you don't intervene and start to



Aside from actual classroom-laboratory classes on fish health (above) with 10 trainees, SEAFDEC/AQD has started a similar course **online**-- called **AquaHealth**-- on April 29. The 24 participants presently enrolled in the latter are learning entirely through the internet. The online class has a moderator and its modules are presided over by fish health specialists. Learners are from seven countries in Southeast Asia and Egypt. More AQD news on page 12.



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on epizootics

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put measures in place to prevent (the disease from) further spreading, then it could go on spreading by means of the natural movements of animals, through the movement of water itself (which harbor) the pathogens, or the movements made by man. So, all these things contribute. If you'll let it, (the disease) would (magnify), it will peak first, then it will decline steeply because there will be fewer and fewer susceptible animals. It could reach its chronic level then maintain itself. In intervention, the trick is to get the decline very sharp or very steep, back to zero or total eradication.

When is the possible time or season that the outbreak occurs?

How do we know it exists?

It depends on the disease; some will be in high water temperature. If you get very (extreme) seasons, say, very severe winter or very hot summer, the disease tends to occur. In the tropics where climate is (constant) throughout the year, it would depend on the stage of development of animals and not on temperature. One would be during spawning. The stress in spawning lowers the resistance of the animal, making it susceptible to disease. But in latitudes with sharp differences between winter and summer temperatures, temperature is the major (trigger). So in Europe, we have fish diseases that occur only during summer that cannot be experienced during winter.

What measures should be taken if signs of the epizootic occur in an area?

The first and best thing you can do is to maximize the containment of the disease. Control everything to stop it from spreading out of the area. Find out as quickly as you can (how it is transferred). Check all the areas where the disease has transferred and (put in containment measures).

If humans eat an infected aquatic product, will it harm their health?

Some bacterial infections (*Vibrio*) can possibly leave toxins in fish. You can eat a clinically dead fish because only its shelf life is reduced; but a diseased fish is not suitable for human consumption. However, a fish dead from viral infection can be safely eaten if it does not show clinical signs.

How bad are the diseases in

wild aquatic animals?

(Wild fishes) have some very serious diseases. There is this one particular case that affected wild Atlantic salmon in freshwater and reduced that population by almost 99.9%, almost total eradication of the species. It's a major problem in Norway. An outbreak of (a virus) in Pacific herring caused a population to disappear. But most of the diseases we know and studied are actually in ponds and farms.

How do we know if aquatic products that are being marketed are free from infection?

The truth is that we don't know. There is a current practice in Australia wherein they check imported shrimps, frozen and fresh, for white spot virus and determine which is safe. They are afraid of introducing the disease through imported shrimps. Those free from the virus can come in.

Where and when did the most recent (epizootic) outbreak occur?

In terms of scale, it's the White Spot Disease outbreak in Central America in the late '90s.

Would you like to give any recommendation to countries with regards to epizootic control and prevention?

Yes, I would, but you can not lay down universal rules. These principles apply to everything. You have to consider local situation, in terms of deciding what measures to take for the control of epizootics. But basically everybody needs to have a planning phase, that is, contingency plans to deal with outbreaks of serious diseases in their country. We would strongly recommend that everyone be prepared because epizootics could come anytime.

[interview by g.g.]