

## Biosecurity and Disinfection in Salmon Farming

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Intensification of fish production brings with it increased risk of disease. This disease risk must be countered with good biosecurity. In salmon culture the risks are higher because of the problems associated with transport of eggs and smolts and the international nature of the industry. Risks are also high because of the often draconian legislative penalties associated with certain disease conditions, where slaughter without compensation may be the norm.

Disease may come from Viruses, bacteria, fungi or parasites. However it originates, it spreads through recognised routes and vectors. These include fish stocks people, equipment, vehicles other aquatic life, the water and even the air.

Medicines and vaccines have traditionally been important. In isolation they cannot achieve much. Modern production requires a holistic approach. Unless the background challenge from microbes is controlled and good management practices followed, losses will escalate. Fish must have an environment with minimal pathogens. Then vaccination and medicines can play their role. Biosecurity is the key to achieving this.

Biosecurity, the exclusion or reduction below pathogenic levels of disease causing organisms, is achieved by use of:-

- External barriers - blocking the spread of disease onto and off a farm
- Internal barriers - blocking the spread of disease within a farm

Disease organisms are frequently spread by vectors such as people or equipment. If these vectors are disinfected at defined critical control points then disease may be controlled effectively. This depends on the correct choice of disinfectant.

Choice of Disinfectant –The crucial issue

Selection of the correct disinfectant has been a matter of considerable review by the members of Bradán's Scientific advisory Committee. Ultimately, since no existing disinfectant was considered ideal for use in the aquatic sector, Bradán carried out its own trials in conjunction with Antec International (Now Dupont). The resultant disinfectant, Virkon® Aquatic, is the only one specifically formulated for aquatic use, based on the

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original Virkon technology used in animal disease throughout the world, but safer for fish and for food use, organic production approved and fully environmentally compatible in the aquatic context.

Virkon® Aquatic minimises the pathogen challenge, thus maximising the effect of the fish's natural defence mechanisms. This in turn dramatically reduces the incidence of disease, reduces mortality and saves money.

Three things are important for a fish farm disinfectant.

- Proven Efficacy against ALL fish pathogens
- Environmental Impact
- Operator Safety

#### Proven Efficacy

Many so called disinfectants are ineffective against the full range of viral, bacterial and fungal disease causing organisms found in the aquatic environment. Particularly in aquaculture, the viruses which cause diseases such as Infectious Pancreatic Necrosis, Infectious Hematopoietic Necrosis, Viral Haemorrhagic Septicaemia Spring Viraemia of Carp and Koi Herpes Virus are extremely persistent and difficult to destroy, especially in the presence of organic material such as mucus. Virkon® Aquatic has been proven against these viruses. It is also highly effective against all of the fish bacterial pathogens and even has efficacy against some of the protozoan and metazoan parasites. It is always important to remember the dictum of the US Surgeon General...*"The most expensive disinfectant is the one which does not work"*.