

PHARMAQ

VETREGARD - Immunostimulant

The need for medicines in aquaculture

As a consequence of modern aquaculture practices, farmed fish are inevitably exposed to numerous pathogens from various origins under the rapidly fluctuating environmental conditions in the aquaculture pen. Coupled with this, high demands are placed on fish through stressful situations such as crowding, handling and transportation which subsequently lowers the animal's effectiveness to ward off disease and predisposes them to infection.

Despite advances in the treatment of disease outbreaks, it is unlikely that we can fully protect our fish from all potential diseases under these conditions. Consequently immunostimulants will play an ever increasing role in combating disease used in conjunction with effective vaccines and chemical therapeutants.

Immunostimulant mode of action.

Vetregard is an example of a natural immunostimulant, a substance capable of augmenting the fish's own immune defences in preparation to resist infection. Vetregard contains beta 1,3 glucan, a polysaccharide and component of the inner cell wall of the natural feed ingredient, brewer's yeast (*Saccharomyces cerevisiae*). The product is processed through autolysis and other proprietary procedures to maximise the content of beta 1,3 glucan. The manufacturing process is well documented and through the ISO 9000 requirements ensures batch to batch consistency and reliability.

Beta glucans have been extensively studied in fish species both at whole animal and on a cellular level. Immunostimulant mode of action is thought to involve the non-specific immune system. The non-specific immune system is responsible for mounting a general response to an invading organism. Once the animal's physical barriers, such as the skin and enzymes on mucous membranes have been overcome, phagocytes within the body's tissues and fluids engulf and destroy foreign bodies. These are activated through the attachment of beta glucan particles to a specific receptor on the cell surface.

It is known that the use of immune stimulants can accelerate the onset of the immune response which can be of equal value to the extent of the stimulation, especially in vulnerable juveniles.

Furthermore, other immune system cells which are capable of destroying infected host cells (e.g. natural killer cells) as well as pathogen destroying enzymes and toxic chemicals are produced and activated. These chemicals signal to the specific immune system which is responsible for the raising of antibodies and specific recognition of foreign bodies.

The use of Vetregard to enhance the overall response of the immune system is particularly important against opportunistic pathogens.

Mortality is highest at the larval stage when specific immunity has not developed. In these circumstances Vetregard may assist in boosting the immune system.

What should you look for in an immunostimulant?

- COST EFFECTIVE.
- EASE OF ADMINISTRATION.
- CONSISTENT QUALITY.

When should immunostimulants be used?

- PRIOR TO TIME OF ANTICIPATED CHALLENGE.
- AT TIME OF VACCINATION.
- IN CONJUNCTION WITH ANTIBIOTIC THERAPY.
- AT OTHER TIMES OF STRESS SUCH AS TRANSPORT AND GRADING ETC.

How do you assess the benefit?

- IMPROVED LIVEABILITY.
- LOWER MORBIDITY.
- IMPROVED FCR.
- IMPROVED GROWTH.

Immunostimulants are not a substitute for high quality, successful vaccinations which offer protection to the fish for the whole production cycle or as a substitute for good management and hygiene practices but can work successfully in conjunction with overall good practice and in the event of disease, used in conjunction with chemical therapeutants.

The future for Immunostimulants

Products such as Vetregard offer a host of beneficial properties which make their incorporation into mainstream veterinary use attractive. Some of the advantages of immunostimulants are as follows:

- Cost effective to produce.
- Obtained from safe products, many of which are food ingredients. E.g. brewer's yeast.
- Non toxic and therefore no risk of overdose.
- Promotes general immunological response and is therefore most effective against opportunistic pathogens characteristic of the aquaculture environment.
- Easily incorporated in feed.
- May effectively enhance the potency of traditional vaccines.
- Repeated stimulation is possible therefore little problem of resistance.
- Particularly suitable for the stimulation of the juvenile immune system which may not be able to receive conventional vaccines.
- Effective at restoring normal levels of immunity following suppression, e.g. stress.

Further information available from:

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