

FUSION FOR AQUACULTURE DIETS

Mycotoxins are secondary metabolites of fungi that are unevenly distributed throughout the feed in hotspots and which can also be toxic in very low concentrations. Fusion, the latest developed product from Meriden Animal Health is the next generation of toxin binder that defines new limits to prevent the threat of in-feed mycotoxins in aquaculture feeds.

The experimental application of Aflatoxin B1 produced by *Aspergillus*, which grows on plant based feed ingredients, is negatively correlated with weight gain and survival in *Penaeus monodon* shrimp. In Channel Catfish histopathological changes in liver were noticed in *Ictalurus punctatus* when fed varying concentrations of the Fusarium mycotoxin fumonisin B1. In a commercial context the presence of mycotoxins are mainly manifested by stunted growth, reduced FCRs and reduced productivity with degeneration and atrophy of the liver in fish and hepatopancreas in shrimp.

The hypothalamic-pituitary-interrenal axis in fish, which can be stimulated by both environmental and stress events, affects the production of lymphocytes and antibody response as well as the reproductive capacity.

Gut Associated Lymphoid Tissue (GALT) is the interface between the diet, host physiology and gut microflora. GALT activity can be modified through the diet by three principles

- competitive bacterial exclusion, bacterial antagonism and im-

une immune modulation which in turn affect the health and productive status of fish and aquaculture populations respectively. The development of Fusion from Meriden Animal Health Limited has been exclusively designed to optimize these complex biological associations. The combination of adsorption and biotransformation technologies used in Fusion has given rise to a product which has the ability to deactivate the major groups of mycotoxins found in aquaculture including Aflotoxins, Fumonisin, Trichothecenes, Ochratoxins, Vomitoxins and Zearalenon. Fusion is a forward-thinking and innovative product which has raised the threshold standard to equivalent mycotoxin binders on the marketplace.


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DIFORMATES IN AQUACULTURE PRESENTED AT ISNF NUTRITION SYMPOSIUM

The unique effects of diformates, patented double salts of formic acid, were strongly underpinned during the XIV ISNF fish nutrition symposium in Qingdao, China in June 2010. New data obtained in trials carried out at the APC in Norway, the University of Göttingen in Germany, the SEAFDEC in the Philippines and the USDA Auburn in the USA were presented in the following papers:

Effect of sodium diformate and extruder temperature on nutrient digestibility in rainbow trout fed barley protein concentrate-based diets

Dietary potassium diformate protects against heat-induced reduction of protein digestibility in a mixture of full-fat soy and wheat when used in extruded diets for Atlantic salmon (*Salmo salar L.*)



AQUAFEED from Aquafeed.com

Effects of dietary levels of potassium diformate on growth, feed utilization and resistance to *Streptococcus iniae* of Nile tilapia, *Oreochromis niloticus*

Effect of potassium diformate (KDF) on growth performance of male Nile tilapia (*Oreochromis niloticus*)

Effects of diformates on growth and feed utilization of all male Nile tilapia (*Oreochromis niloticus*)

reared in tank culture

Addcon also announces the successful test of its acidifier range, based on the diformate technology, in yet another fish species. A commercial scaled trial in milkfish marine cage culture was recently completed. First results showed significant effects of AQUAFORM on growth (13% surplus in weight gain) and feeding efficiency (FCR improved by more than 10%) at inclusion rates of 0.3%.

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ADVANCED FORMULATION SOFTWARE IN BETA TESTING

Format International's new software product was on show for the first time in May. Based on cutting-edge Microsoft technologies and using Entity Framework database management, this new least-cost

optimisation product offers unrivalled new possibilities in the user-experience, in business intelligence and in IT deployment.

The screenshot displays the AQUAFORM software interface. At the top, a ribbon-style menu provides access to various functions. The main window shows a list of input materials for 'Calf Pellets' with columns for Code, Name, Level, Opt Status, Cost, Min, and Max. A detailed view of 'Maize Germ' is shown in a separate window, including fields for Code, Name, Status, Description, Category, and Groups. Annotations highlight key features: 'Ribbon-style access to standard or custom functions', 'Inspect multiple objects. Float-and-arrange or dock windows', and 'Display and arrange data according to preference'.

