



# **FISH FEED ADDITIVES**

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**2022**

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## **Abstract**

Due to the increase in the human population and the decline of wild fisheries, aquaculture becomes one of the fastest-growing food-producing sectors. The growth of the aquaculture sector in Egypt has gradually increased over the past three decades. Presently aquaculture contributes to 46.8 percent of total global fish production. This increase in growth of aquaculture has been primarily attributed to development in good quality feeds. Any good quality feed is prepared from proper and essential feed additives. Recent developments in functional feed additives are showing promising yields to aqua farmers. Functional feed additives not only improve the growth performance of the fishes but also improve the health performance of the fishes. These functional feed additives are derived from different sources. These are organic and eco-friendly to fishes and environment. These functional feed additives include prebiotics, probiotics, seaweeds, mushrooms, microalgae, enzymes, organic acids, mycotoxin binders, photogenic or phytobiotic compounds and yeasts.

## **Conclusion**

Functional feed additives are used for, higher productivity and enhanced resistance to infectious disease, which would ultimately lead to sustainable aquaculture. Understanding the interactions of functional feed additives in the feeds and the biochemical and physiological functions of the animal is key for the further development of functional feeds. Further functional feed additives are eco-friendly and also may not result in negative impact on aquaculture.

Plant products and their derivatives are regarded as a promising alternative to the use of chemical treatments for infectious diseases in fish. Plant-derived products or phytogenics have been shown to stimulate appetite and promote weight gain in farmed animals, act as immunostimulants, and possess potent anti-pathogenic properties in fish. Their potency is mediated by the presence of bioactive molecules including alkaloids, terpenoids, saponins, and flavonoids, among others. It is evident that phytogenics and their active components are able to affect the gut health as well as to modulate the intestinal microbiota of the fish; thus, they are good candidates to be used as health-promoting agents in aquaculture.

