

# REPLACING SYNTHETIC ANTIBIOTICS WITH NATURAL SUBSTANCES IN AQUACULTURE

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**F**ish farming is an increasing industry in world wide with the goal of improving food security and income generation. However parasitic outbreaks and high incidences of bacterial and fungal diseases are a major set back. Antibiotics are the major tool for disease and parasite control in fish but the development of antimicrobial resistance presents a major challenge. Herbal substances can be used as parasite and disease remedies, immune booster as well as growth promoters. Phyt Exponent, an herbal preparation of a number of plants extracts was used in various concentrations as a prophylactic and curative measure in gold fish. There were five treatments laid out in a complete randomized design and replicated 3 times. The treatment ranged from 0%, 0.05%, 0.1, 1.5, and 2% Phyt exponent in ten litres glass aquariums each containing 5 fish. Disease incidence and mortality were monitored and recorded over a period of 5 months.

Data was analysed using R.

There were significant differences between the control and Phyt Exponent treatments with the 1.5 and 2% preventing incidence of disease. No significant differences were noted between control and 0.05% and between 1.5% and 2% treatments. Therefore, the 1.5% was recommended as the sustainable concentration. Using herbal substances to manage disease and pests with is the future of aquatic disease management in aquaculture to deal with antimicrobial resistance, a threat to food production.

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