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Non Chemical-Based Natural Products in the Treatment and Control of Disease in Fish

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Abstract : Introduction: Some African plants and bile from animals have shown efficacies in the treatment and control of diseases in farmed fish. The background of the study is based on the fact the African rain forest is blessed with the abundance of medicinal plants that should be investigated for their use in the treatment of diseases. The significance of the study is informed by the fact that chemical-based substances accumulate in the tissues of food fish, thereby reducing the food values of such products and moreover, the continuous use of chemotherapeutics in the aquatic environments tends to degrade the affected environment. Methodology: Plants and animal products were extracted, purified and applied under in vitro and in vivo conditions to the affected organisms. Effective plants and bills were analyzed for biologically active substances responsible for the activities by both qualitative and HPLC methods. Results: Extracts of Carica papaya and Mucuna pruriens were effective in the treatment of Ichthyophthiriasis in goldfish (Carassius auratus auratus) with high host tolerance. Similarly, ectoparasitic monogeneans were effectively dislodged from the gills and skin of goldfish by the application of extracts of Piper guineense at therapeutic concentrations. Artemesia annua with known antimalarial activities in human was also effective against fish monogenean parasites of Clarias gariepinus in a concentration-related manner without detriments to the host. Effective antibacterial activities against Aeromonas and Pseudomonas diseases of the African catfish (Heterobranchus longifilis) were demonstrated in some plants such as Phylanthus amarus, Allium sativum, A. annua, and Citrus lemon. Bile from some animals (fish, goat, chicken, cow, and pig) showed great antibacterial activities against some gastrointestinal bacterial pathogens of fish. Conclusions: African plants and some animal bile have shown potential promise in the treatment of diseases in fish and other aquatic animals. The use of chemical-based substances for control of diseases in the aquatic environments should be restricted.

Keywords : control, diseases, fish, treatment
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