Ointment Made from Traditional Herbs Extract for Topical Treatment of Infection in Ornamental Fish

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Aquatic fungi especially Saprolegnia sp. often cause infection in ornamental fish. Treating the infection is normally done by dissolving antifungal agent in the water, affecting the whole fish population in the tank which may result in drug resistance. The objective of our project is to develop topical treatment of infection in ornamental fishes using herbal extract. Firstly, the effects of some herbal extracts on Saprolegnia sp. growth were investigated. Inhibitory effect of the hexane extracts of Andrographis paniculata, Terminalia catappa and Cinnamomum camphora leaves on growth of Saprolegnia sp. on glucose peptone agar plates were observed at 89.20, 76.44 and 65.34%, respectively. To develop a topical ointment, we searched for a suitable adhesion and drug releasing ingredient, the mucilage from Ocimum canum seed was found to consistently release the herbal extract and adhered well on fish scale. Mixing herbal extract with mucilage did not decrease the inhibitory effect of the herbal extract on Saprolegnia sp. compared to herbal extract alone and the suitable concentration of herbal extract was 2,000 ppm. The herbal ointment was prepared and applied on each infected wound on the goldfishes compared to treatment with dropping antifungal agent in the water and non treated infected goldfishes. The wound size was measured and behavior of the fishes was observed every day for a week. We found that the herbal ointment treated the wound more effectively than dropping antifungal agent in water. Our ointment had no observable side effects on other fishes in the same population.