

Efficacy of *Aloe vera* against the pathogen *Aeromonas hydrophila* infecting gold fish

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Aloe vera, a herb with known antibacterial properties, has not been fully exploited in aquatic medicine. Therefore, the present study was conducted to evaluate the effectiveness of *Aloe vera* in gold fish experimentally infected with *A. hydrophila*, a strain isolated from a septicemic gourami *Trichopodus leerii*.

To test the *in vitro* antibacterial effect of *A. vera* against the above strain, an agar gel diffusion test was employed using the supernatant of *Aloe vera* gel homogenate collected from fresh and mature leaves. In addition, to test the effect of *A.vera* against *A.hydrophia in vivo*, experimental feed number 1, 2 and 3 containing 20%, 33.3% and 42.9% of *A.vera* gel, was prepared respectively. Seventy two gold fish were divided into four groups (n=18; 6 fish per tank with three replicates) and the groups 1, 2 and 3 were fed with experimental feed number 1, 2 and 3, respectively while the group four was fed with a control feed without *A.vera*. All the above groups were fed with respective diets twice daily at a rate of 0.5 g per tank for 56 days. The body weights were taken at day 0 and day 42 of the experiment. On day 42, all fish from groups 1 to 4 were injected intraperitoneally with an overnight broth of *A.hydrophila* at a dose 2.42×10^4 cfu per fish and observed daily for a period of 14 days.

A.vera gel supernatant inhibited the growth of *A. hydrophila* in a dose dependent manner *in vitro*. There is no statistical difference among the body weight gain of group 1 (0.7g), 2 (0.87g), 3 (0.87g) and 4 (0.65g) ($p > 0.05$). Further, upon artificial infection with *A. hydrophila* the survival rate of groups 1 (55.5%), 2 (66.6%), 3 (66.6%) were higher than that of control group (5.55%) ($p < 0.05$). The *in vitro* and *in vivo* effectiveness of *A. vera* against *A. hydrophila* suggests that *A. vera* can be used as a cheap alternative to antibiotics to control *A.hydrophila* infections in gold fish.