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Use of *Anacardium occidentale* L. ethanol (95%) extract to treat metacercarial cysts of *Centrocestus formosanus* (Nishigori) in the gills of *Xiphophorus hellerii* (Hekel)

H. R. M. A. S. Premarathna and U. P. K. Epa*

Department of Zoology & Environmental Management, University of Kelaniya, Sri Lanka

*corresponding author: epa@kln.ac.lk

One of the major problems of ornamental fish industry is control of parasitic and other diseases which frequently cause mass mortalities in reared fish stocks. Use of chemicals to control fish diseases leads to emergence of resistant genes and causes adverse effects on environment. Phytomedicines which does not pose any adverse effect on environment has long been considered as an option for chemical treatments in aquaculture industry. Efficacy of *Anacardium occidentale* apple extraction (AE) to control metacercarial cysts of *Centrocestus formosanus* in sword tail, *Xiphophorus hellerii* was investigated in the present study.

Infected fishes from a fish breeding center at Ginigathbena were transported to the laboratory to conduct parasitic survey. Point prevalence of parasite was assessed by counting number of metacercarial cysts in all gill filaments of 30 adult fish. *A. occidentale* apple was extracted with ethanol (95%) and 96h LC₅₀ for *X. hellerii* was determined. Infected *X. hellerii* was treated with 300, 320, 340, 360 and 380mg/L of AE with 24 and 48h exposure. Study was conducted in similar sized glass aquaria stocked with 20 infected fish. All the treatments were triplicated and three aquaria each with 20 infected fish served as controls. Histopathological studies of treated and control fish were carried out after determination of their parasitic intensity in gills. Mortality and behavior of fish were observed during the treatment and two weeks after the treatment.

Point prevalence of metacercarial cysts in the *X. hellerii* stock at fish breeding center was 100%. The 96h LC₅₀ of AE for *X. hellerii* was 387.3mg/L. Mean parasitic intensity of treated fish was significantly lower than non-treated fish ($P < 0.05$, One-way ANOVA). Parasitic intensity of treated fish decreased with increasing concentration and exposure time. Mean mortality of treated fish was significantly lower than that of non-treated fish ($P < 0.05$, One-way ANOVA) during experiment and recovery period. In conclusion, 24 h exposure of 360mg/L AE was found to be effective to control metacercarial cysts of *C. formosanus* in gills of *X. hellerii*.

Keywords: *Centrocestus formosanus*, *Anacardium occidentale*, LC50, metacercarial cysts