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ABSTRACT

Outbreaks of edwardsiellosis have severe impact on the aquaculture production of African catfish *Clarias gariepinus*. In this study, feed supplemented with apple mangrove *Sonneratia caseolaris* extract was evaluated for its protective effect against *Edwardsiella tarda* infection in African catfish. Results showed an increase in growth performance and higher survival rate in the treatment groups in a dose dependent manner. Haematological analyses showed an increase in white blood cell count in the treatment groups. Histopathological analysis revealed degenerative changes and regeneration of liver tissue architecture in both the control and treatment groups. However, the presence of inflammatory cells was found exclusively in the kidney of T3 treatment group that was supplemented with the highest dose of extract at 3.17 mg/ml, which inferred the activation of immune response in the fish. Contrast to the deteriorative alteration observed in the kidney of the control group due to *E. tarda* infection, treatment group exhibited tissue regeneration and well-defined kidney tissue architecture at 3 dpi. Taken together, these results demonstrated that supplementation with the methanol extract of *S. caseolaris* possesses protective effect in African catfish against the infection of *E. tarda*.

INTRODUCTION

The outbreaks of diseases in fish farms often devastate the production, which is detrimental to the economy and development of the aquaculture industry. Edwardsiellosis due to *Edwardsiella tarda* is one of the important bacterial diseases in fish aquaculture. The pathogenic *E. tarda*