

Administration of β -glucan (*Saccharomyces cerevisiae*) by oral feeding increases survival, growth and immune responses in *Oreochromis* spp. infected with *Aeromonashydrophila*

ABSTRACT

The effects of feeding β -glucan on the survival and immune responses of *Oreochromis* spp. were investigated. Fish received 3% of (body weight of animal) commercial tilapia pellet diet containing β -glucan at the concentration of 25mg/kg twice a day until day 40th of experiment. Control fish were fed with normal commercial tilapia pellet diet without the test compound at the same schedule. Every 10 days of interval, the fish were weighed and their FCR were recorded. Blood samples were collected from each group on day 7th. Control and test fish were challenged by i.p injection of LD50 concentration of *A. hydrophila* on day 41th. Daily mortality was recorded up to day 48th. Haemoglobin (Hb, g/L), packed cell volume (PCV, L/L), erythrocyte (RBCx10¹²/L), total leukocyte (x10⁹/L), mortality and relative percentage survival (RPS) were determined and calculated. Feeding with 25mg/kg of β -glucan significantly enhanced the RPS and growth of the fish. Test fish injected with the compound also showed a significant increase in the total leukocytes count and Hb level ($P < 0.05$), while there was no significant difference for PCV and RBC amounts. Administration of β -glucan through oral feeding effectively stimulates the immune response, growth and offers protection against *A. hydrophila* infection in *Oreochromis* spp. The results indicate that β -glucan could play an important role in the prevention of diseases in fish culture.

Keyword: *Aeromonashydrophila*; β -glucan; Oral feeding; *Oreochromis* spp.