

Water pH effects on survival, reproductive performances, and ultrastructure of gonads, gills, and skins of the Javanese medaka (*Oryzias javanicus*)

ABSTRACT

The Javanese medaka (*Oryzias javanicus*) has the potential to be developed as a test organism. It also exhibited many characteristics that are similar to those of well-known laboratory fishes. This study determined the effects of water pH on the survival, reproductive performances, and ultrastructure of the gonads, gills, and skins of the Javanese medaka. This study confirmed that Javanese medakas treated with pH 6-7 displayed the lowest mortality, but increased in egg production and hatchability. This supposition is supported by strong evidence from the oocytes and testes stage analyses, including histological examinations. The ultrastructure of gills and skins of fish treated in that range was also less histologically affected, indicating its suitability range. The sensitivity of the Javanese medaka towards environmental changes, in terms of the selected physiological performances and cellular level, indicate its potential as a test organism in tropical regions.

Keyword: Javanese medaka; pH; Reproductive performances; Survival; Ultrastructure