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RESEARCH REPORTS

Sustainable Aquaculture for a Secure Future

Title: **Effects of Fertilization Rates on Growth Performance of Red Tilapia at Different Salinities**

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Abstract: An experiment was conducted at the Asian Institute of Technology, Thailand, to investigate effects of fertilization rates and salinity levels on the growth of sex-reversed, Thai red tilapia (*Oreochromis* sp.). The experiment was designed to test two fertilization rates (28 kg Nand 7 kg P ha^{-1} $week^{-1}$, N: P=4:1; and 14 kg N and 7 kgP $ha^{-1}week^{-1}$, N: P=2:1) and three salinity levels (10, 20, and 30 ppt) in brackishwater. An additional treatment using optimized fertilization rates (28 kg N and 7 kg P ha^{-1} $week^{-1}$, N: P=4:1) in freshwater ponds served as control. Red tilapia fingerlings (20.2-23.7 g size) were stocked at 2.4 fish m^{-2} in 5-m^2 cement tanks with soil bottoms. These were cultured for 160 days.

Growth performance of red tilapia was better in brackishwater than in freshwater. Growth of red tilapia in brackishwater was inversely related to the salinity levels ($r= -0.63$, $P < 0.05$), decreasing significantly with increasing salinity. For a given salinity level, there was no significant difference in size at harvest for the two fertilization regimes ($P > 0.05$). Best growth performance was achieved in the treatment with N:P ratio of 4:1 at 10 ppt salinity.

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