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Sustainable Aquaculture for a Secure Future

Title: **Effects of formaldehyde, sodium chloride, potassium permanganate and hydrogen peroxide on hatch rate of African catfish *Clarias gariepinus* eggs**

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Abstract: A study evaluating the effects of formaldehyde, sodium chloride, potassium permanganate and hydrogen peroxide treatment on the hatching success of C. *gariepinus* eggs was carried out from April to July 2006. Eggs were artificially fertilized, 50 counted and subjected to a static bath dip treatment in given concentrations of the above chemicals for either 15, 30 or 60-minute durations before being incubated at 27±1 °C for 24 h. Treatment efficacy was assessed by comparing the percent egg hatch in the treatment group to the untreated control group. Eggs treated with formaldehyde and sodium chloride at 250, 500 and 1000 ppm recorded greater mean percent hatch compared to the untreated controls. Likewise, percent hatch of eggs treated with hydrogen peroxide and potassium permanganate at concentrations ranging from 100–1000 ppm and 0.5–4.0 ppm respectively were greater relative to the untreated controls. The highest mean percent hatch recorded in the study was in eggs treated with 2 ppm potassium permanganate for 30 min (96.7%). Although formaldehyde and potassium permanganate gave the best performance, on the basis of safety concerns, ease of availability and cost, we recommend 1000 ppm sodium chloride treatment of catfish eggs for routine use by rural fish farmers to improve catfish egg hatchability.

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