

**POTENTIAL USE OF COMMERCIALY AVAILABLE CLOVE OIL
AS AN ANAESTHESIA IN THE TRANSPORTATION OF
NILE TILAPIA (*Oreochromis niloticus*)
FINGERLINGS**

By

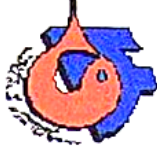
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An undergraduate thesis submitted to the faculty of College of Fisheries in partial fulfillment for the degree of

BACHELOR OF SCIENCE IN FISHERIES

**Department of Aquaculture
COLLEGE OF FISHERIES
CENTRAL LUZON STATE UNIVERSITY
SCIENCE CITY OF MUÑOZ, NUEVA ECIJA
PHILIPPINES**

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ABSTRACT

The study was conducted to determine the potential use of commercially available clove oil as an anaesthesia in the transportation of Nile tilapia (*Oreochromis niloticus*) fingerlings. The study was conducted for period of 15 days. There were two factors used in the study: dosage of clove oil and travel time of fish. The different dosage of clove oil were 0.05 mL, 0.10 mL and 0.15 mL per 1 L of water.

Result showed mean recovery time that all combinations were significantly comparable to each other. Study was observed survival rate after transportation that all combinations with clove oil had a range from 73%-100% except A3-B12. Survival rate after one-week recovery also observed that A2-B4 had the highest survival rate with mean $100.00 \pm 0.00\%$ and lowest survival rate observed in A3-B12 with mean $3.33 \pm 5.77\%$. Mean survival rate after transportation revealed that clove oil concentrations with 0.05 mL/L of water and 0.10 mL/L of water have high survival rate. However, concentrations with dosage of 0.10 mL/L of water revealed high survival rate after one-week recovery.

Water quality parameters before and after transportation revealed that before transportation water quality parameters is normal, but after transportation the water quality change, DO decreases up to 0.79 ± 0.01 mg/L, pH decreases but results after transportation revealed that pH level was normal and temperature increases up to $30.00 \pm 0.26^\circ\text{C}$. However, water quality parameters during one-week recovery revealed that all combinations were not significantly different to each other.

The result obtained in the present study showed that treatment with 0.10 mL concentration of clove oil is the ideal concentration for Nile tilapia fingerlings because of high survival rate after transportation and after 1 week recovery. The ideal travel time was observed in A2-B4.

Generally, based on the result of the study, the following recommendation could be considered to further evaluate the potential use of clove oil in anaesthetizing the fish for transportation: Determine the physiological response of the fingerlings such as plasma cortisol level, blood pH and blood glucose with the addition of clove oil or clove extracts in the transport water; evaluation of clove oil in actual transportation scenario; and use clove buds and stems extract instead of oil.

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