

Effects of Anaesthetic Lidocaine-Hydrochloride
on the Water Parameters in Simulated Transport
Experiment of Winter Flounder, *Pleuronectes
americanus* juvenile

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Introduction

This investigation was programmed to maximize the positive transportation of the winter flounder, *Pleuronectes americanus* Walbaum, 1972 which was known as one of the most attractive candidate species for commercial aquaculture and to study the effect to the water quality due to the use of the lidocaine-HCl as an anaesthetic in the experimental simulation of transporting the winter flounder juvenile (Park et al., 2003).

Materials and Methods

The winter flounders from the Aquaculture Research Station of the National Research Council (NRC), Sandy Cove, Nova Scotia, Canada with 17.2 ± 0.1 cm of the average total length and 16.3 ± 0.2 g of the average body weight were selected as the test subjects. The series of lidocaine-HCl (Chinwhoa Chemical Co., Korea) concentration sample at the ranged of 5 ppm, 10 ppm and 20 ppm were prepared from results of the subjects. The series of lidocaine-HCl (Chinwhoa Chemical Co., Korea) concentration sample at the ranged of 5 ppm, 10 ppm and 20 ppm were prepared from results of the preliminary experiments. There were 3 replicated experiment carried out without the admission of any lights. The *t*-test with the probability of 0.01 was used as a guideline to confirm any statistical relativities of experimental results. The sample quality analysis had followed the Standard method

(APHA et al. 1992).

Results and Conclusions

The dissolved oxygen, ventilation rate, ammonia nitrogen and pH of control group, sham control group and lidocaine-hydrochloride treated group of 5 ppm, 10 ppm, 20 ppm at time of 1 hr, 2 hr, 3 hr, 4 hr and 5 hr after elapsed from treatment were tested. During the experiment time it was found that lidocaine-hydrochloride treated groups were most effective, followed by sham control and control, in decreasing the oxygen consumption and the excretion of ammonia by the fish. There were lidocaine-hydrochloride dose-related decrease in oxygen consumption and the excretion of ammonia. Decreasing in pH value of lidocaine-hydrochloride groups and sham control group was much more higher than that of control group. These results reveal lidocaine-hydrochloride is effective as sedative for transportation mixture in this species.

References

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