

Lidocaine Hydrochloride-Sodium Bicarbonate as an Anesthetic for Soft-Shelled turtle, *Pelodiscus sinensis*

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Introduction

The soft-shelled turtle, *Pelodiscus sinensis* Crother, 2000 is considered to be a nutritious food for human consumption and commercially important aquaculture species due to high demand in Asia including Korea, China and Japan. In the recent years, farming technique of this species has been rapidly developed in the southern part of Korea. The present study was performed to evaluate the effect of different concentrations of anesthetic lidocaine hydrochloride/NaHCO₃ on the soft-shelled turtle with various sizes at various temperature conditions.

Materials and Methods

Attempts were made to understand how the different sizes (small and large) of the soft-shelled turtle are affected by the different temperature (25°C or 30°C) and different concentrations (700, 1000 and 1300 ppm) of anesthetic lidocaine hydrochloride-sodium bicarbonate (Lidocaine HCl/NaHCO₃) (Park et al., 1988). Three-way ANOVA design (size × temperature × concentration of lidocaine hydrochloride) with two replicates was used for this study.

Two groups of healthy soft-shelled turtles with the mean body weight of 182.6±23.7 g for large (adult) size and 4.1±0.8 g for small (juvenile) size were sorted. The concentrations of 700, 1000 and 1300 mg/L lidocaine hydrochloride-sodium bicarbonate in the experimental tanks were prepared.

Results and Conclusions

Exposure time of the soft-shelled turtle was significantly affected by all factors (temperature, concentration and size). Exposure time of the soft-shelled turtle linearly decreased with the increase in temperature and concentration of lidocaine hydrochloride, and the decrease in size. Recovery time of the soft-shelled turtle was significantly affected by all factors (temperature, concentration and size) as well.

Recovery time of the soft-shelled turtle linearly increased with the increase in temperature, concentration of lidocaine hydrochloride and size. This is a first report on successful anesthetic of reptile, soft-shelled turtle by using lidocaine hydrochloride /1000 ppm sodium bicarbonate. According to these results (Summerfelt and Smith, 1990), lidocaine hydrochloride/1000 ppm sodium bicarbonate seemed to be an effective anesthetic for sedating and handling the soft-shelled turtle.

References

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