

Evaluation of Visible Implant Fluorescent Elastomer Tag in Soft-Shelled Turtle, *Pelodiscus sinensis*

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Introduction

Ideal tag should provide positive identification throughout the life cycle, unlimited number of combinations, rapid application, readability without damaging fish, and low cost. In addition, the tag must not influence behavioral or physiological characteristics of fish (Park and Lee, 2001). Many aquatic animal species have transparent tissue suitable for tagging including opercula, mandible, top of head, body and fins. However, sites to retain tags vary among species. Tagging sites in other body locations may be also successfully used (Park et al., 2004).

The soft-shelled turtle, *Pelodiscus* (= *Trionyx*) *sinensis*, Crother, 2000 is considered by Korean people to be a rich nutritious food and is commercially important aquaculture species in Korea. In recent years, the farming of this species has developed rapidly in South Korea, especially in the south part of South Korea (Park, 2004). We evaluated the subdermal injection of VIFE tag at several body locations over 16 months for uniquely marking individual soft-shelled turtle for use in an experimental study.

Materials and Methods

Fifty soft-shelled turtle of triplicate group were individually marked with orange elastomer at three body locations: (1) web surface between the fourth and fifth dactyl of hindfoot, (2) web surface between the fourth and fifth dactyl of forefoot, and (3) adipose eyelid. Control soft-shelled turtle (50 turtle) were anesthetized, but not marked. The soft-shelled turtles were fed to satiation once daily in the evening throughout the 16 month trial. Survival, retention and readability of tags were determined in every 4 month interval and dead soft-shelled turtle was daily removed.

Treatment effects were evaluated by using one-way analysis of variance (ANOVA) tests.

In the case of significant treatment effects, Duncan's test was applied to analyze the significance of the difference among the means of each treatment. Additionally, regression analysis was conducted using General Linear Model of Statistical Analysis Systems Institute, Inc. (1987) through SAS version 6.12 (SAS Institute, Cary, North Carolina, USA).

Results and Conclusions

Mortality of the soft-shelled turtle from 4 months to 16 months after tagging was attributed to harvest and handling stress rather than due to the tagging itself. The major period of tag loss occurred before the 8 months after tagging, with tag retention generally stabilising after 8 months after tagging. Placement of the VIFE tag into the web surface between the fourth and fifth dactyl of hindfoot of soft-shelled turtle appeared to give the highest retention rate. Adipose eyelid tagging site showed high loss of VIFE with high value in tag readability. The finding in our paper, when viewed in association with these other studies, suggest that the VIFE tag is a reliable, non-intrusive, approach to identifying soft-shelled turtle.

References

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