Evaluation of Six Anesthetics for Use with the Mediterranean Mussel, *Mytilus galloprovincialis*

Ioannis N. Vatsos* and Panagiotis Angelidis

*Ichthyology Laboratory, School of Veterinary Medicine, Aristotle University of Thessaloniki, TK 54124, P.O. Box 395, Greece*

(Received 17.6.11, Accepted 21.8.11)

Key words: anesthesia, *Mytilus galloprovincialis*, 3-aminobenzoic acid

**Abstract**  
An effective anesthetic scheme would significantly contribute to the investigation of disease in the Mediterranean mussel (*Mytilus galloprovincialis*), especially when biopsy is required. In this study, we evaluated the efficacy of six anesthetics: 2-phenoxyethanol (2 ml/l), MS222 (0.4 and 1 g/l), MgCl₂ (20 and 50 g/l), clove oil (1.5 ml/l), benzocaine (1.5 g/l), and 1-phenoxy-2-propanol (2.5 ml/l) when used to anesthetize Mediterranean mussel. For this purpose, 810 mussels were allocated to nine groups of 90 mussels each (three replicates of 30 individuals in each group). Each group was exposed to one of the above concentrations of anesthetics for 24 h, except for one group kept as the control. Mussels were considered anesthetized when they did not close their valves after tapping them with a pair of forceps. The most effective anesthesia was MS222 at the concentration of 1 g/l; it induced anesthesia in 58.8±1.92% of the exposed mussels with negligible mortality (5.7±5.8%) of the anesthetized mussels one week after anesthesia. Further, when using MS222 there was no correlation between the number of anesthetized mussels and temperature. However, the number significantly increased as the size of the mussels decreased. MgCl₂ at the concentration of 20 g/l resulted in notable retardation of valve movement.

* Corresponding author. Tel.: +30-2310-999880, fax: +30-2310-999871, e-mail: ivatsos@vet.auth.gr