LABORATORY OBSERVATIONS ON THE EFFECTS OF THREE MARKING AND TAGGING TECHNIQUES ON THE SURVIVAL, GROWTH AND BEHAVIOR OF BIGFIN REEF SQUID (*Sepioteuthis lessoniana* Ferussac in Lesson, 1831)

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ABSTRACT: Rearing experiments were conducted on bigfin reef squid (*Sepioteuthis lessoniana*) to examine how different marking and tagging techniques affect survival, growth and behavior. This aim of this approach was to evaluate techniques that could be used to study movement and migration patterns, growth, natural mortality of the species and manage overall squid stocks. The experiments were conducted during January–June 2016 at the Rayong Coastal Fisheries Research and Development Center in Rayong Province, Thailand, using 120 squid (size range: 90–600 g, 10–25 cm mantle length) caught by squid traps. Each squid was marked or tagged using one of three methods: heat branding of the skin, paint injection under the skin, or attachment of a plastic pipe tag to the mantle. Survival rates compared with those of a control group 30 days after heat branding, paint injection and attachment of tags were 76.3%, 71.4%, and 42.9%, respectively. Mantle lengths increased significantly during the experiment in all treatment groups except the squid with plastic tags. Body weights increased significantly in all groups. The growth rates (both in mantle length and body weight) did not differ significantly among the three groups and the control group. Squid marked by heat branding and paint injection usually remained near the bottom of the tanks, while those with plastic tags swam in the water column or near the surface. To mark or tag bigfin reef squid in Thailand, we recommend using paint injection because it is much easier to monitor than the other two techniques.

Key words: marking and tagging, behavior, survival rate, *Sepioteuthis lessoniana*. 