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# Determining the Best Protocol for Raising Larvae of the Sea Urchin *Eucidaris Tribuloides*

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# DETERMINING THE BEST PROTOCOL FOR RAISING LARVAE OF THE SEA URCHIN *EUCIDARIS TRIBULOIDES*

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Previous studies (Balser, 1998, 2003; Eaves and Palmer, 2003) have shown that developmental stages (larvae) of sea stars and other echinoderms are capable of producing new larvae by cloning. One hypothesis emerging from the collected works on larval cloning is that this phenomenon is a pleisomorphic character for the Echinodermata. The pencil urchin, *Eucidaris tribuloides*, embodies several characters, such as the arrangement of skeletal plates, the number of tube feet per plate, and the morphology of the feeding teeth, that are considered primitive for the Echinoidea (the class to which sea urchins belong). Because *E. tribuloides* may represent an ancient lineage within the echinoids, we predict that the feeding larva of this species is capable of asexual reproduction during the larval phase. In further pursuit of this hypothesis, we attempted to determine the best protocol for culturing larvae of this species in the laboratory. Adult specimens of *E. tribuloides* were spawned, and fertilized eggs were raised either in stirred or unstirred filtered seawater. All larvae were exposed to a photoperiod of 12L:12D. Some animals kept in unstirred water were raised at room temperature (23-24°C), while others were placed in an incubator at 26°C. While all animals were fed the alga *Rhodomonas lens* ($10^7$ cells per ml), some received a supplemental diet of EZ Larva™ (approximately $10^5$ particles per ml). We found that the larvae grew best at room temperature in moving water when they were fed only *R. lens*.