

## **Effects of salinity on embryonic and early larval development of a tropical sea urchin, *Salmacis sphaeroides***

### **Abstract**

Effects of salinity on fertilization, embryonic stage, and early larval development and growth performances of short-spined white sea urchin, *Salmacis sphaeroides* were conducted under a controlled laboratory condition. The experiment was carried out with seven salinity treatments (15, 20, 25, 30, 35, 40 and 45 PSU), each of which was triplicated. Significantly highest fertilization success was achieved at 30 PSU, followed by those at 25, 35, 20, 40 and 45 PSU, while the lowest value was obtained at 15 PSU, decreased with increasing and decreasing salinities ( $p < .05$ ). The time required to reach these embryonic and larval stages was increased with the salinity deviations from 30 till the extent to 25 and 35 PSU. No significant differences ( $p > .05$ ) were noted among these three salinity levels on prism larval length and width. However, significance differences ( $p > .05$ ) were noted in morphometric characters of 2-arm and 4-arm pluteus larvae. The findings of the this study indicate that *S. sphaeroides* is stenohaline and do not survive and develop out of the range from 25 to 35 PSU.

**Keyword:** *Salmacis sphaeroides*; Sea urchin; Salinity; Embryo; Larvae development