

## **Sperm viability and quantity of mud crab, *Scylla tranquebarica* in different cryoprotectants**

### **ABSTRACT**

The aim of the present study was to determine the optimum concentrations of different cryoprotectants and to determine the sperm quantity with different durations of exposure for *S. tranquebarica*'s sperm. The body weight of *S. tranquebarica* was 280-350 g. In the present study, male *S. tranquebarica* were dissected out and got the sperm to determine its viability and quantity using six types of cryoprotectants (glycerol, glycine, methanol, dimethyl sulfoxide (DMSO), ethylene glycol (EG) and proline). The sperm was exposed with different durations of 5, 15, 30 and 60 min at room temperature (25°C). For the cryoprotectant glycine 10%, there was the highest mean sperm viability with  $84.75 \pm 1.01\%$  (exposure at 60 min). Meanwhile, 15% proline was the lowest mean sperm viability with  $15.39 \pm 0.39\%$  after exposure for 60 min at room temperature. There were significant differences between the duration of exposure for some types of cryoprotectants ( $p$ -value  $< 0.05$ ). As a conclusion, 10% glycine was the best cryoprotectant of mud crab, *S. tranquebarica*. As a recommendation, *S. tranquebarica*'s sperm should be preserved in the cold conditions such as -20°C, -80°C and -196°C (liquid nitrogen) to determine the sperm viability and quantity for further breeding programs and biochemical changes.