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Predation on Pseudodiaptomus annandalei (Copepoda: Calanoida) by the grouper fish larvae Epinephelus coioides under different hydrodynamic conditions

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The copepod Pseudodiaptomus annandalei perceived larval grouper Epinephelus coioides predators and exhibited escape reactions mediated by physical and/or chemical signals but not by visual perception. Under illumination, prey capture rates were significantly higher under moderate turbulence (747 $\pm$104, n=3) than in the controls (calm water) (597$\pm$76, n=3) ($p<0.01$ Mann Whitney U test). The maximum darting speed of copepod in response to fish larvae under calm water was significantly higher (one way ANOVA $P<0.05$, Fig. 5) than that under either turbulent or enhanced flow condition, indicating that copepopd's ability to escape from predators was higher under calm water than either under turbulent water conditions or enhanced flow. The maximum number of copepods eaten by the fish larvae increased more under slow and medium hydrodynamic conditions than that under either calm or under high speed hydrodynamic conditions.

Key words: Predator-prey relation; Behavior; Hydrodynamic disturbance; Diurnal changes; Predator avoidance; Predation efficiency