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# Aspects of Reproductive Biology of *Pseudupeneus prayensis* collected from the coast off Sierra Leone, West Africa.

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## ABSTRACT

**Objective:** The study assessed aspects of reproductive biology of *Pseudupeneus prayensis* in Sierra Leone, aimed to support efficient management of its fishery.

**Methodology and Results:** One hundred and seventy one (171) specimens were randomly collected from January-June 2016 on-board a demersal trawler. Gonad stages were assessed macroscopically and absolute fecundity determined by gravimetry. Total length and weight were measured using a meter rule (cm) and weight balance (g) respectively. Results showed dominant males (56 %) with no significant difference between gender populations ( $p < 0.05$ ), and female spawning gonads were exceptionally dominant in March and April. The estimated length at first sexual maturity (male,  $L_{50\%} = 19.6$  cm; female,  $L_{50\%} = 17.2$  cm) was 30.7 % and 38.6 % less than the maximum length ( $L_{max} = 28$  cm) respectively. Besides, Gonadosomatic Index of both sexes peaked in March and May whereas Hepatosomatic Index was at peak in April and May for females, and in April and June for the males. Both sexes showed consistently high Index of condition ( $K > 1.0$ ). Fecundity positively correlated with size ( $r > 0.9$ ) and ranged from 160 000 eggs (total length, 17cm; somatic weight, 65g) to 522 079 eggs (total length, 25 cm; somatic weight, 150g).

**Conclusion and application of results:** Sex ratios portrayed homogeneity in gender population of *Pseudupeneus prayensis* and females were key spawning indicators with notable spawning gonads in March and April. Moreover, both sexes of *P. prayensis* had delayed first sexual maturity with major spawning in March and May aided by well-developed liver (HSI) and improved conditions ( $K > 1.0$ ). Besides, fecundity in *Pseudupeneus prayensis* increased with size, and female specimens were highly productive. The results of this study can be used to institute closed fishing seasons in the event of threat on the spawning biomass of the stock of *P. prayensis* in Sierra Leone.

**Keywords:** Absolute fecundity, gonad, maturity, somatic, spawning.