



Ceballos Vázquez, B.P., C. Rosas & I.S. Racotta (2003). Sperm quality in relation to age and weight of white shirimp *Litopenaeus vannamei*. *Aquaculture*, 228(1-4): 141-151. DOI: 10.1016/S0044-8486(03)00322-3

Sperm quality in relation to age and weight of white shirimp *Litopenaeus vannamei*

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Optimal sperm quality is an important feature for management of shrimp broodstock. The understanding of the sperm quality in relation to age and weight of shrimp is useful to select male broodstock. To evaluate the effect of age and weight on sperm quality, *Litopenaeus vannamei* males from the same cohort at ages of 6, 8, 10, and 12 months were examined, using body weight as a covariable in ANCOVA. Additionally, males of the same cohort at an age of 12 months, but from different culture conditions, were compared. Spermatophore weight, sperm count, and percentage of normal sperm were positively correlated to body weight. Sperm count was positively correlated to spermatophore weight and percentage of normal sperm. Males at an age of 12 months had superior sperm quality than younger males, based on observations of larger spermatophore weight, higher sperm count, and higher percentage of normal sperm. By eliminating the influence of body weight with the use of ANCOVA, the same effect was still observed, indicating that the effect of age of males on sperm quality was independent of body weight. However, when large differences in growth were forced by changing culture conditions, sperm quality differences were observed and could be explained by body weight. In conclusion, using 12-month-old males would lead to improved shrimp seed production, since they are mature males with high sperm quality. In addition, for improved productivity, it is important to consider the culture conditions under which domesticated male broodstock will be obtained.

Palabras clave: Reproduction, *Penaeus*, Sperm count, Normal sperm

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