OPTIMUM QUADRAT SIZE AND NUMBER OF REPLICATES FOR SAMPLING CALLIANASSID CRUSTACEANS FOR POPULATION ANALYSIS STUDIES.

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The callianassid crustaceans ("ghost shrimps") are common on sandy beaches from Brazil, including two main genera: *Callichirus* and *Sergio*. They are burrowing animals, living in isolation inside galleries used as shelter and for feeding/reproduction. The density of these crustaceans is very important for population monitoring, and can be estimated indirectly by counting the number of burrows in each sampling unit. The establishment of the optimum quadrat size and its number of replicates for sampling are primary issues in population studies, being the aim of the present study. For this the Weigert Method (W) was used to test quadrat with different sizes for sampling (with sides of 0.25, 0.50, 0.75, 1.0, 1.25 and 1.5 m), considering the optimum size the one that minimizes the multiplication of two variables (RV, relative variance; and RC, relative cost), the latter being expressed by the time spent counting the burrows. The test of quadrat size samplings occurred in Gonzaga Beach, City of Santos (SP), Brazil, where the quadrats of each size were arranged adjacent and parallel to the waterline in the lower third of foreshore during the low tide period. The number of replicates for the optimum quadrat was obtained through the stabilization of the variance (V), considering the number of burrows by the increase of the sampling area. The lowest counting time of the burrows took happened with the quadrat of 0.25 m (CR = 1 sec.), although it showed a greater variance (18.1 burrows/m^2). On the other hand, the quadrat of 1 m was the one that minimized W (RV = 15; and RC = 1). Therefore, the quadrat of 1 m was the best quadrat size for sampling callianassid crustaceans, and should comprise a minimum of 50 replicates of 1x1 m (V = 24.6) to obtain significant population sampling for these organisms.