ABSTRACT

Objective: Callinectes amnicola (big fist crab) and Cardisoma armatum (lagoon land crab) are two main species of decapod crustaceans exploited for consumption in South Benin. This study aims to assess the morphological, structural characteristics and the growth of the population of these two species in the complex Nokoué lake Porto-Novo lagoon in South Benin in order to assess the level exploitation.

Methodology and Results: For this, 1287 crabs Callinectes amnicola and 322 crabs Cardisoma armatum were collected between May 2016 and April 2017 through fishermen. Data on morphological variables, size structure, sex ratio, growth parameters were collected. The study revealed that in Callinectes amnicola, the carapace small width of immature females was higher than that of immature males (p <0.05), while in mature individuals, the weight of males was higher than that of females (p <0.01). In Cardisoma armatum on the contrary, the weight, the carapace large width and the carapace length of immature males were higher (p <0.05) than those of immature females while in the mature, males had a higher carapace length than females (p <0.05). The morphological variables comparison in the two species shows out that in immature, all the morphological variables were higher (p<0.001) in the crab Cardisoma armatum while in mature individuals, only the carapace large width was higher (p <0.001) in the crab Callinectes amnicola. The classes’ size distribution in crabs is unimodal and the calculated sex ratios were not different from the theoretical sex ratio (p> 0.05). The allometric coefficients b were all lower than 3, reflecting a growth weight lower than the size growth. The condition factor varied significantly between the maturity's stages of the two species and was higher in mature subjects of C. amnicola and immature of C. armatum. However, the condition factor was higher in the crab Cardisoma armatum than in the crab Callinectes amnicola (p <0.001). Cardisoma armatum presents the best growth parameters.
Conclusion and application of finding: Callinectes amnicola and Cardisoma armatum have better growth parameters and adapt very well to their environment. However, these species are affected by the effects of fishing. The current study results are essential for the good policy of management and of sustainable use of this resource.

**Keywords:** crabs, morphology, growth, sex ratio, condition factor