



# Ecological aspects and impact of parasitic gill Copepods on the condition factor of catfish *Chrysichthys nigrodigitatus* from Aby Lagoon (Côte d'Ivoire)

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## 1 ABSTRACT

Commonly known as the “African catfish,” *Chrysichthys nigrodigitatus* is a species widely exploited in West Africa for its economic and nutritional value. In Aby Lagoon (Côte d'Ivoire), this fish inhabits an environment subject to strong anthropogenic and environmental pressures, which favor the establishment of diverse parasitic communities. Among these, gill-infesting copepods represent major ectoparasites capable of affecting fish health and productivity. This study focused on the identification and distribution of three parasitic copepod species: *Ergasilus latus* FRYER, 1960, *E. sarsi* CAPART, 1944 and *Lernaea cyprinacea* LINNAEUS, 1758. The methodology involved sampling fish from two stations (Adiaké department and Aby village), followed by epidemiological analyses (prevalence, mean intensity, abundance) and statistical tests (Chi-Square, Kruskal–Wallis, Mann–Whitney). The results revealed the highest prevalences of the three species *E. latus* (69.91%), *E. sarsi* (43.32%) and *L. cyprinacea* (66.96%) at Aby village station. Mean intensities were  $5.64 \pm 0.7$  for *E. latus*,  $4.10 \pm 0.3$  for *E. sarsi* and  $5.41 \pm 0.3$  for *L. cyprinacea*, with respective abundances of 4.58, 1.84 and 3.79 individual parasite per examined host. Infestation was significantly higher during the rainy season and led to a reduction in the condition factor of parasitized fish, indicating a negative physiological impact. This study highlighted the ecological and sanitary importance of parasitic copepods in Aby Lagoon. It underscores the need for regular parasitological monitoring to safeguard the health of natural and aquaculture stocks, and opens perspectives on the influence of climatic variability and local practices (such as acadja-culture) on infestation dynamics.