



Comparison of consumption of two strains of diatoms grown in laboratory, *Chaetoceros calcitrans* and *Isochrysis aff. galbana* by the mangrove oyster, *Crassostrea tulipa* (Lamarck, 1819)

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ABSTRACT

Objective: The challenges experienced in obtaining oysters in the laboratory despite the different temperatures likely to cause it, led to the implementation of an experimental device on the contribution of two strains of diatoms in the nutrition of this species in a controlled environment.

Methodology and Results : Eighteen (18) oysters with an average weight of 51.3 ± 26.2 g were harvested in March 1999 in Missirah, a local community nested in the Saloum Delta in Senegal. They were placed in a 66-litre tank receiving water filtered through a 2-micron filter and stored in a 500-litre plastic tank. The concentration of the two species of diatoms in the algae tank was calculated by counting the algal cells contained in 10 squares of a Malassez tank (depth 0.2 mm). The water is heated using an electric heating element connected to a temperature regulator. In order to prevent the ambient light in the study room from impacting on the nutrient intake of the oysters, the tank containing the specimens is covered with a black tarpaulin. The diatom filtration is evaluated by calculating the difference between the quantities lost during water renewal in the oyster tank and the estimation made during the operation of the pump. For each operation, the moving averages of the values recorded over a period of 30 minutes are calculated. Experiments on feeding *Crassostrea tulipa* oysters with diatoms, *Isochrysis aff. galbana* and *Chaetoceros calcitrans* point to the fact that this mollusc has a certain preference for the first species. This filtration reaches its highest threshold at 26°C.

Conclusion and Application of results: The results obtained show a greater intake of *Isochrysis aff. galbana* than of *Chaetoceros calcitrans*. Regardless of the strain of diatoms in use, the optimal temperature for the intake of both strains is around 26°C. This scientific knowledge on the use of these two strains of diatom is useful for maturing the mangrove oyster *Crassostrea tulipa* in laboratory.

Keywords: Senegal, mangrove oyster, *Crassostrea tulipa*, feeding, *Chaetoceros calcitrans* and *Isochrysis aff. Galbana*.