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MARINE SPONGES: WHAT FUTURE DO THEY RESERVE FOR AQUACULTURE AND BIOTECHNOLOGY?

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Sponges play diverse interactions with other organisms and support several ecological functions in marine ecosystems. For these reasons, sponges attract the attention of aquarium hobbyists and professionals, but also of scientific researchers. They produce and accumulate a great diversity of metabolites, which act as multipurpose bioactive compounds. Therefore, a successful culture of marine sponges represents the opening of a niche market, for scientific research, pharmaceutical industry and ornamental species trade. With this purpose in mind, a study was conducted to establish a methodology to allow maintaining sponges in captivity. Several specimens of one of the most common and abundant species on the South-western European coasts, *Dysidea fragilis*, were collected and acclimated in a water recirculation system (6 aquaria with a capacity of 12 L). They were fed with a mixed solution of microalgae and *Nanochloropsis salina* and faeces of gilt-head sea bream (*Sparus aurata* Linnaeus, 1758). Fifteen days after sampling, half of the aquaria were illuminated with a 12 hours photoperiod (2 fluorescent tubes 18w/765 daylight, with an illuminance level of 4990 lux), while the other half remained in the dark, protected by a black cloth. The water quality, the physical appearance, survival and growth of the sponges were monitored during 3 months. The results obtained were not entirely satisfactory. However, this study allowed inferring other alternatives that could contribute to improve the attempts to produce these organisms in captivity. The captured sponges *D. fragilis* presented low survival rates, showed no growth, either in terms of length or width. The acclimation to artificial light showed to be detrimental to the survival of these organisms and, therefore, they should not be suitable for the ornamental trade. Nevertheless, this species lodges other symbiotic organisms, with potential biotechnological applications, for which its breeding techniques should be developed and perfected.

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