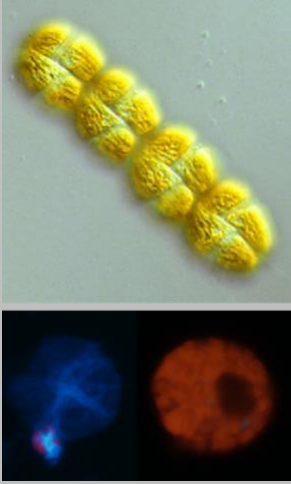


MESTRADO CIÊNCIAS DO MAR
Ano letivo 2023/2024

TÍTULO	Questioning the Theory behind the Dilution Technique in marine protists
RESUMO	<p>In 1982, Landry and Hassett developed a field technique to determine the rate of phytoplankton ingestion by microzooplankton. The technique is simple, and is based on the dilution of seawater and its constituents. Since there will always be more prey than predators, dilution to infinity promotes the creation of artificial environments where there are no predators, but there are still some prey. In other words, the difference between the growth of prey in the presence and absence of predators is the mortality rate derived from ingestion by microzooplankton. Indeed, the technique seems to work most of the time, but there is something that was not considered in the formulation of the theory and that, at times, can complicate the analysis of results: the cell growth phase. In the laboratory, when protist cultures (such as dinoflagellates or other microalgae) are diluted, there is a risk of leaving the organisms in a “lag” phase, which reduces their growth rate for a few days. What is the basis for assuming that this does not happen in the field? And if it happens, what consequences will it have on the interpretation of the results of the dilution technique, which normally only lasts 24 hours? These are the questions we want to answer, but before going into the field, it is necessary to confirm some data in the laboratory. To do this, we will do some experiments with species such as <i>Gymnodinium catenatum</i>, <i>Heterocapsa niei</i> or <i>Karlodinium veneficum</i> (dinoflagellates) and <i>Rhodomonas salina</i> (cryptophyte), <i>Tetraselmis chui</i> (chlorophyte) or <i>Isochrysis galbana</i> (haptophyte). In a second phase, it is expected to carry out experiments with mixtures of 2 or 3 different organisms, to investigate the role of competition for resources. These experiences will take place in the CETEMARES building, in Peniche, where there are all the necessary amenities to bring this experience to a successful end. The candidate will learn to handle and experiment with the organisms described above, in addition to acquiring some basic knowledge of protist taxonomy.</p>
 <p>(até c. de 2000 caracteres)</p>	
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