INTRODUCTION

This study is part of the environmental monitoring, especially of the safety monitoring of the Moroccan coast (LSSR) by the INRH.

In this work we present the results of the palynological and phytoplankton analysis (vegetative cells and cysts contained in surface sediments), in the lagoon of Sidi Moussa between 2012 and 2013.

Based on the distribution of dinoflagellates, this study aims to explain the reappearance of the phytoplankton in the lagoon under various environmental pressures and thereby define:
- The relationship between the phy-chemical parameters and this distribution;
- The causes of the blooms of the species "Peridinium quinquicorne" and "Cryptophyceae foliaceum";
- The link between the cysts and the vegetative cells that may suggest that cysts can generate blooms;
- The environmental quality of this lagoon.

Physicochemical parameters

The measured value of the salinity (expressed as C/l) at point 3 is 32 ° 45', recorded during the summer of 2013 at the mouth of the lagoon.

The cysts that are the second part of this work, present modest concentrations, probably related to salinity (oligotrophic) and particle size of the lagoon. This low concentration besides undiversified dinoflagellate cyst.

THE QUANTITATIVE STUDY

After palynological treatment of surface sediments, the organic content has yielded a modest richness of dinoflagellate cysts. The highest concentrations are noted in sites P3 (218 cysts) and P4 (218 cysts).

The particle size distribution (Fig. 12) of different facies shows that the silty fraction (less than 63 µm), is located at sites P3 and P4. The coarse fraction (greater than 250 µm) is marked at the PI site, however P0 and P2 harbor the fractions between 63 and 250 microns. The levels of concentrations of dinoflagellate cysts, seem to have a relationship with sediment grain size.

In addition to low concentrations of dinoflagellate cysts in surface sediments, there is also a low species richness, it could be related to low salinity. Some researchers (Wall et al., 1977; Dale, 1996; Ellegaard, 2000; Mudie et al., 2000; Perepelova et al., 2004), also noted that oligohaline environments are characterized by low species diversity.

THE QUALITATIVE ANALYSIS

Cysts associations are dominated by the species Lingulodinium machaerophorum cyst species Lingulodinium polyedrum, to 90,47% in point 1, associated with this autotrophic species: S. zoeamoea and O. centropus which are considered by ubiquity towards the temperature. They are found in a wide variety of marine environments.

These autotrophic species are accompanied by an association of heterotrophic cysts composed by: Selenastrum quinta (Bradford 1975). Volvox alginus, Quinqueloculina conica (Reid 1977), Triradulina algaetum sp. et Leprosyne sp. They are apart from the cyst Lchamosphaera sp.; it was a dominance of heterotrophic cysts on autotrophic cysts. This dominance could be explained by eutrophication. Indeed in the port of tinhomina, this dominance has been interpreted as indication of the middle of eutrophication (Matsuoka 1999). It was also interpreted such as presence of chemical water pollutants (Matsuoka 1999). Is also interpreted such as presence of chemical water pollutants (Matsuoka 1999).

The transect is the first time that this species proliferates in the Sidi Moussa lagoon. The bloom of *Kryptoperidinium* sp. (Fig.7) shows high values recorded between the months of May and July at points 3 and 4, where the species *Planktothrix* sp. has proliferated. This proliferation may be related to the enrichment of environment by nitrate and orthophosphate, as confirmed by statistical analysis (DCA) (Fig.13) which shows a very good correlation between the elevated levels of nitrate and orthophosphate with increasing the cellular concentration of the species. 

The same synthesis was developed by Chomelovit et al., (1999), who noted that the species *P. quiquecorne* profite and proliferates in environments rich in nitrates.

STUDY AREA

The lagoon of Sidi Moussa is located on the Atlantic coast of Morocco between the towns of El Jadida and Safi (Figure 1). Its geographical coordinates are between 32 ° 57' and 32 ° 59' north latitude and between 6 ° 15' and 6 ° 22' west longitude (El Khalidi et al., 2011).

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