

## DARK SURVIVAL AND SUBSEQUENT LIGHT RECOVERY FOR *Pseudo-nitzschia* multiseries

Claudia Mengelt and Barbara Prezelin

We conducted experiments to determine how long *Pseudo-nitzschia* multiseries could stay viable in the dark with and without glutamine/glutamate supplements. Light adapted log phase cells were transferred to several replicate flasks, with or without glutamine/glutamate additions, and were incubated in the dark. Each week for 10 weeks, dark samples were retrieved and 1) immediately analyzed for cell numbers, percent viable cells, chlorophyll fluorescence, and changes in cell morphology and 2) kept in the light for several additional weeks while the growth potential during light recovery was determined. We found that *P. multiseries* has a long dark survival time although the percentage of viable cells slowly declines over time. During the first 5 weeks of dark survival, the observed cell number, percent viable cells and cellular Chl fluorescence was essentially the same for populations with and without glutamine/glutamate supplements. The findings for the second 5 weeks will be included in the presentation. Differences however were notable in the timing and growth potential during light recovery. Dark populations with glutamine/glutamate had a longer lag period before cell division in the light was observed. However, if the transfer back to the light occurred within 2 weeks of dark exposure, the population with glutamine/glutamate supplements grew twice as fast as the population without glutamine/glutamate supplements. These preliminary results are the basis of a thesis to explore the role of dark survival and light recovery in the initiation process for *Pseudo-nitzschia* blooms.

