REPRODUCTIVE, GENETIC AND PHENOTYPIC VARIATION PATTERNS IN RELATION TO TOXICITY IN THE *PSEUDO-NITZSCHIA PUNGENS/MULTISERIES* COMPLEX

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The marine, planktonic diatom genus *Pseudo-nitzschia* includes several species capable of producing domoic acid, the causative agent of Amnesic Shellfish Poisoning. Amongst the potentially toxic representatives, the *P. pungens/multiseries* complex is the most abundant in the North Sea. The goal of this study is to gain a better understanding of the patterns in genetic, reproductive ecophysiological and morphological variation and the relationship to toxin production within this complex. This will lead to a better insight in the distribution of potentially toxic strains within these species and will help developing efficient detection methods.

To obtain this goal we are building a collection of monoclonal cultures of *Pseudo-nitzschia* from different stations in the North Sea, the Westerscheldt, the Sluice-dock of Ostend and other parts of the world. In order to elucidate the sexual compatibility between different strains, crossing experiments are being carried out. Preliminary results indicate that *P. pungens* strains of different locations in the North Sea are sexual compatible. Genetic differentiation and phylogenetic relationships will be assessed using the internal transcribed spacers (ITS1 and ITS2) of the nuclear ribosomal DNA. This genetic marker has already been successfully used for phylogenetic analyses in *Pseudo-nitzschia*. Some of these studies have demonstrated the presence of genetically distinct but morphologically indistinguishable species.