

Sarin Simulant Detection in Water by Photosynthetic Tissue-Based Biosensors

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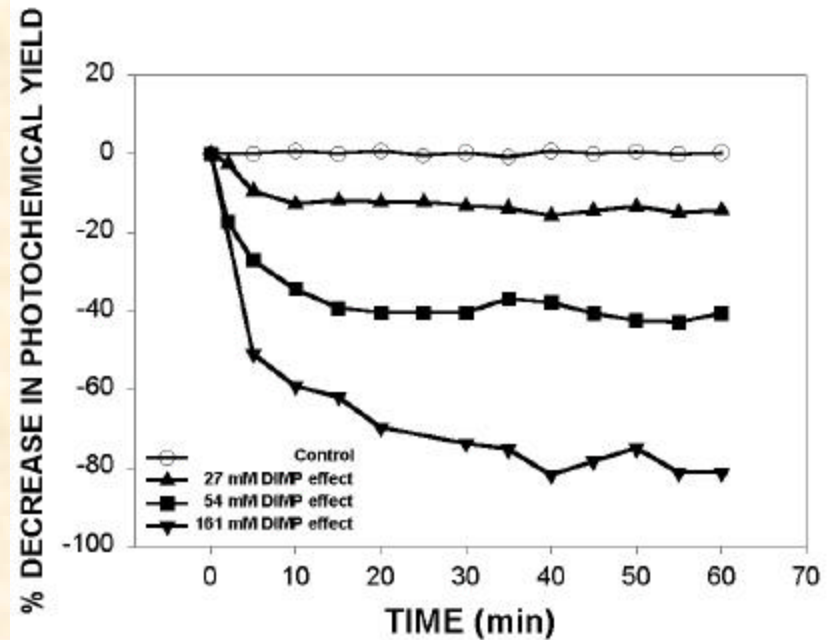
This highlight is on preliminary data for the detection of low levels of DIMP (Sarin Simulant) in water by in situ microalgal tissue-based biosensors. Directly-drawn Clinch River water samples have been analyzed with progressive concentrations (27 mM, 54 mM and 161 mM) of DIMP. Diisopropyl methylphosphonate (DIMP) is a hydrolysis product of the manufacture and detoxification of the nerve gas isopropyl methylphosphonofluoridate (GB or Sarin)¹. The Clinch is the primary source of drinking water for the City of Oak Ridge, Tennessee. For these DIMP dose-response relationships, the photochemical yields were plotted as a function of time as well as concentration. This DARPA funded project is led by Elias Greenbaum of CSD with technical assistance by Miguel Rodriguez, Jr. of the Life Sciences Division.

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Effect of Diisopropyl Methylphosphonate (DIMP - Sarin Simulant) on Clinch River Samples



¹ Burton DT, Turley SD, Shedd TR, Burrows EP. 2002. Toxicity of diisopropyl methylphosphonate (DIMP) to aquatic organisms. Bull. Environ. Contam. Toxicol. 68(2): 282-9.