Triclosan: Antibacterial or Genotoxic?

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Triclosan is an antibacterial and antifungal agent commonly found in consumer products, and when added to products, delays the growth of bacteria, fungi, and mildew. Rising levels of Triclosan in waste-water shows the increased popularity of anti-bacterial marketed products. But studies have proved beyond doubt that an “anti-bacterial” soap has no significant added benefit over regular soap. Studies have shown Triclosan to be genotoxic (i.e., damaging DNA, thereby causing mutations) and cytotoxic (i.e., killing cells). Triclosan is causing toxicity to the environment, because it is not separated out in waste-water treatment plants. Minnesota Legislature recently passed the nation's first statewide ban on retail sale of Triclosan in cleaning products that is used by consumers for sanitizing or hand and body cleansing. In this experiment it will be observed how different levels of Triclosan affect the survival rate of phytoplankton populations, and their ability to photosynthesize. Using hemocytometer, actual counts of live and dead cells in different samples of Triclosan-contaminated phytoplankton will be performed. Rate of pH will also be recorded using a pH probe. It is concluded that, as Triclosan levels increase in phytoplankton, cell viability deceases and rate of pH increase in phytoplankton solution slows down. Phytoplankton uses sunlight and carbon dioxide dissolved in water as well as from the atmosphere to photosynthesize, and with less phytoplankton able to photosynthesize, making the water more acidic due to slower consumption of CO2. Extrapolation of these impacts to the human organism is not beyond question. The FDA should step up public education of possible impacts on health due to usage of products that has Triclosan, similar to campaigns against MSG.

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