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研究报告

百菌清(chlorothalonil)在水中的光化学降解

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摘要 研究了光源种类、溶液pH、水温和表面活性剂对百菌清光解的影响.结果表明，百菌清水溶液在高压汞灯、紫外灯和太阳光照射下的光解半衰期分别为22.4、82.5和123.8 min；在太阳光和高压汞灯照射下，百菌清在碱性溶液中比中性和酸性溶液中光解快；随着水温的升高，百菌清光解速率加快，水温平均每升高10 ℃，光解速率大约增大1倍.表面活性剂十二烷基磺酸钠、Tween 60和Span 20对百菌清的光解表现出显著的光敏化效应，十六烷基三甲基溴化铵对百菌清光解有强烈的光猝灭效应.

关键词 百菌清 光源 pH 水温 表面活性剂 光化学降解

分类号

Photochemical degradation of chlorothalonil in aqueous solution

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Abstract

The study on the effects of light source, solution pH and temperature, and surfactant on the photochemical degradation of chlorothalonil showed that the half life of chlorothalonil photodegradation under high pressure mercury lamp (HPML), UV lamp and sunlight was 22.4, 82.5 and 123.8 min, respectively. Under HPML and sunlight, chlorothalonil had a higher photolysis rate in alkaline solution than in neutral and acid solution. The photolysis rate increased with increasing solution temperature in the range of 10 ℃~40 ℃, which was doubled when the temperature increased every 10 ℃. Sodium laurylsulfonate (SDS), sodium dodecylbenzene sulfonate (SDBS), Tween 60 and Span 20 showed significant photosensitizing effects, while cetyltrimethylammonium bromide (CTAB) had significant photoquench effect on the photolysis of chlorothalonil.

Key words Chlorothalonil Light source pH Solution temperature Surfactant Photochemical degradation

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