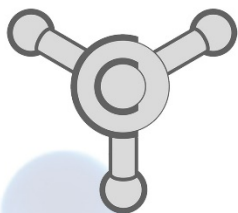


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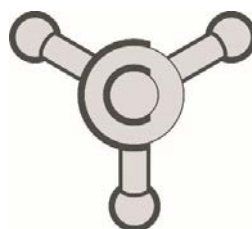
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HA08 PE 6

Degradation of triazine group herbicides by chlorine dioxide

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This study investigates degradation of triazine group herbicides (atrazine, terbuthylazine and prometryn) with chlorine dioxide in deionized water and in real water system (water from river Sava) under optimal conditions. Previously, we investigated in details the influence of various parameters such as concentration of chlorine dioxide, reaction time, pH, light conditions and determined the optimal conditions for the herbicides degradation based on degradation efficiency monitored by HPLC-DAD.¹ Atrazine and terbuthylazine (10 ppm) were completely degraded by 10 ppm chlorine dioxide, at pH 2.00 in a very short time (1 h). The percentage of herbicide degradation in water from river Sava was lower in relation to deionized water, but good value was obtained (degradation efficiency of 100% for atrazine and terbuthylazine after 2 h of initial treatment and degradation efficiency of 73% for prometryn after 24 h of initial treatment under the same conditions for deionized water and water from river Sava). GC-QQQ (gas chromatograph with triple quadrupole mass detector) analysis identified three main atrazine, three main terbuthylazine and four main prometryn degradation products. A simple mechanism of degradation of herbicides was also proposed.

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