Environmental Engineering and Management Journal

March 2017, Vol.16, No. 3, 597-603
http://omicron.ch.tuiasi.ro/EEMJ/

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A POSSIBLE DISTRIBUTION OF NITROGEN COMPOUNDS DURING NATURAL MINERAL WATERS DISINFECTION TREATMENT

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Abstract

This study aims to evaluate the effects of Fe^{2+} present in carbonated natural mineral waters on the decomposition of hydrogen peroxide (H_2O_2) used as sanitizing agent of the collector water tanks and the oxidation of NH_4^+ to NO_3^- and NO_2^- nitrogen compounds from bottled carbonated natural mineral water by the Fenton process. This evaluation suggests that the distribution of the nitrogen compounds, at certain concentrations of H_2O_2 is influenced by facilitated Fenton reaction in the presence of natural Fe^{2+} ions. Based on the impact of sanitizing agent, which generates in-situ Fenton system, the variations of the NO_3^- and NO_2^- were monitored as a result of the complex matrices. The obtained results lead to first conclusion about the possible modifications in the chemical composition of natural mineral waters in the presence of traces of H_2O_2.

Key words: distribution, H_2O_2, mineral waters, nitrogen compounds

Received: February, 2016; Revised final: February, 2017; Accepted: February, 2017

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