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## APPLICATION OF *Sphagnum moss* PEAT IN ECOLOGICAL REMEDICATION OF OXYANIONS CONTAMINATED AQUEOUS SOLUTIONS

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### Abstract

The potential of *Sphagnum* moss peat to adsorb oxyanions (As(III), As(V), Sb(III), Sb(V) and Se(VI)) from aqueous solution was studied in batch mode. For arsenic (both species) and selenium, the results were negative: moss peat is not able to retain these oxyanion. For antimony, the hydroxyl and carboxyl groups from the *Sphagnum* moss peat surface seems to be responsible for Sb uptake. Kinetic studies were conducted for both Sb(III) and Sb(V) and a fast uptake process was observed, equilibrium being achieved in about 2 hours. Equilibrium studies reveals considerable adsorbed amounts of Sb(III) and Sb(V). The experimental sorption capacity resulted for Sb(III) was around 3 mg/g and nearly 3.3 mg/g for Sb(V), at pH 2 and 23 ± 1°C. The influence of pH (in the 2-8 range) is modest in case of Sb(III) and insignificant for Sb(V) sorption. Following the results, it is possible to conclude that *Sphagnum* moss peat could be used in ecological remediation of antimony contaminated aqueous solutions.

*Key words:* oxyanions, remediation, sorption, *Sphagnum* moss peat

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