Linnaeus ECO-TECH 2020
Kalmar, Sweden, November 23-25, 2020

Efficiency *Salix viminalis* L. to treat polluted acid soils

***Gintaras Šiaudinis*[1]**
***Karolina Barčauskaitė*[1]**
***Ieva Mockevičienė*[1]**
***Vita Tilvikienė*[1]**
***Olga Anne*[2]**
[1)] *Lithuanian Research Centre for Agriculture and Forestry*
[2)] *Klaipėda University*

Abstract

The absorbtion efficiency of common osier (*Salix viminalis* L.) of ions of the heavy metals was investigated at the Vėžaičiai Branch of the Lithuanian Research (Western Lithuania,). The soil of the experimental site – naturally acidic *Retisol* (WB 2014; pH_{KCl} 4.35–4.58). Granulated sewage sludge substrate containing heavy metals was applied once at 45 and 90 t ha^{-1} rates (in 2014) for common osier fertilization. The concentrations of 6 heavy metals (Cd, Cr, Ni, Pb, Cu, Zn) in common osier dry mass (DM) were measured after 4 and 7 growing years. A trend can be observed that higher accumulation of some heavy metals (Cd, Ni, Cu) occurred during the first 4 years of growth. Heavy metals accumulated in plant biomass in the following descending order: Zn>Cu>Ni>Pb>Cd. The use of highest 90 t ha^{-1} sewage sludge rate caused the increase of Ni concentration in biomass; meanwhile the application of both 45 and 90 t ha^{-1} sewage sludge rates had no significant impact on the concentration of other heavy metals in common osier biomass.

Keywords: common osier, sewage sludge, biomass, heavy metals,

ISBN: 978-91-89081-03-1