Preliminary results on sewage sludge application in energetic plants culture

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Abstract
An important problem is waste appearing in sewage treatment plants reclaiming. Agricultural use of sewage sludge has some positive aspects. On the one hand sewage sludge is a rich source of organic and mineral ingredients necessary for plants and its organic matter could improve humic compounds balance in the soil. It also stimulates plants yielding and improves biological and physic-chemical properties of soil. On the other hand sewage sludge is a source of contaminants (heavy metals, pathogenic microorganisms). The purpose of the study was the estimation of differentiated doses of municipal sewage sludge effect (0, 20, 40 t d.m.-ha⁻¹) on yielding and quality of energetic raw material of several plant species: miscantus (*Miscanthus x giganteus* Greef et Deu), sida (*Sida hermaphrodita* Rusby), cup plant (*Sylphium perfoliatum* L.), willow (*Salix spp.*), poplar (*Populus x canadensis*) and Jerusalem artichoke (*Heliannthus tuberosus* L.) in two first years of cultivation (2008-2009). A field experiment was led on landfill site belonging to MSD in Janów Lubelski. In the experiment tubers of Jerusalem artichoke Rubik variety seeded in rows 28 x 75 cm, seedlings obtained from division of parent plants of cup plants and sida planted in rows 40 x 75 cm; miscantus obtained from rhizomes planted in 80 x 75 cm distance); poplar v. AF2 planted in rows 40 x 75 cm; willow Start variety planted in rows 33 x 75 cm. Sewage sludge positively affected yields of energetic plants under study. Thus, it seems to be, that fertilization with pressed and kept one year in lagoon sewage sludge especially in low dose could replace mineral fertilization of plant species cultivated for energy purposes.

Key words: energetic plants, sewage sludge, yields

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