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# SELECTION OF BASIC PARAMETERS OF COMPOSTING PROCESS ON EXAMPLE TECHNOLOGY OF SEWAGE UTILIZATION USED IN WASTEWATER TREATMENT PLANTIN TORUŃ (POLAND)

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## ABSTRACT

Modern biological - chemical wastewater treatment plant (BCWP) produces 80–100 tons sewage sludge every day. Total amount of sewage sludge per year is 30000 tons. The sewage sludge is a multicomponent matter that is rich in micro- and macroelements (nutrients and biogens) that are necessary for plants and soil fauna to live. The treated sewage sludge can have high manural value and some valuable soil components. The use of compost in agricultural practices enriches soil fertility since it re-introduces plant nutrients into food chains. However, the sludge can contain toxic compounds and pathogenic organisms. In practice, there exist many methods of sewage sludge management. One of them is composting, where compost is produced in multi – step process.

The aim of this work is a presentation of compost preparation technology in Wastewater Treatment Plant in Toruń (Poland). Wastewater Treatment Plant is a modern mechanical – biological sewage treatment plant. It produces ca. 80 tons of sewage sludge (side product) daily. At the beginning, sludge management was a great problem in Toruń (taken away on dumping site). From four years all the mass of sewage sludge is composted in pile together with addition of straw of cereals, corn, sawdust or other waste material (e.g. sewage sludge:straw:sawdust in ratio 1:0,5:0,5 v/v) in a hall area of 4500 $m^2$. The pile is aerated by the cyclic throwing process (2 month – intervals). After this time compost ripens on the grounds (ca. 130 ha) near to BCWP that is intended for soil reclamation in the future. Part of compost is ready for immediate use (e.g. as grounds under lawns in the city), while remaining part of compost is used to produce compost soil (mixing of compost and soil in the ratio of 1:1 v/v).