



EVALUATION OF WASTEWATER SLUDGE FOR POSSIBLE AGRICULTURAL USE

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Abstract

Sludge samples were taken at eight wastewater treatment plants (WWTPs) localized in different sites of Bursa City that the origin of municipal, municipal industrial and food industrial sewage sludge for their chemical composition and suitability for land application between May 2008 and April 2009 during to production period. According to the analysis results all sewage sludge were found between slightly acidic and alkaline properties. Generally sludge samples have high organic matter, N (Nitrogen) and P (Phosphorus) contents due to the origin of municipal treatment sludge and its may be suitable for agricultural purposes. Concentrations of heavy metals were determined according to their total and extractable fractions. Bursa Organized Industrial District (BTSO) sludge was found the most polluted with Ni (Nickel), Zn (Zinc) and Cr (Chrome) according to the pollutant concentration limits in Turkey legislation. Zn, Cu and Ni were observed to be in mobile or bioavailable fractions in the sludge. Although the sludge total heavy metal contents is below the limit ranges, it might not be suitable for agricultural application due to its high content in available heavy metals.

Key words: DTPA, heavy metals, plant nutrients, sludge

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