Dudziak, M., Bodzek, M. Analyzing the Content of Xenoestrogens in Water by Sorptive Extraction. *Ochrona Srodowiska* 2009, Vol. 31, No. 1, pp. 9–14.

Abstract: The content of xenoestrogens in water was determined using the rather poorly known Stir Bar Sorptive Extraction (SBSE) technique, as well as GC/MS analysis. Of the xenoestrogen group the following compounds were selected for the study: 4-*tert*-octylphenol, 4-nonylphenol and bisphenol A. For soptive extraction the use of a polydimethyloxosilane bar (2 cm in length) was proposed. Using acetic acid anhydride, the compounds were derivatized in water to acyl derivatives. In order to release the xenoestrogens from the sorptive element, use was made of desorption to a small amount of an organic solvent (liquid desorption, LD) in an ultrasonic field. For tap and surface waters, at the concentration of xenoestrogens ranging between 40 and 200 ng/cm^3, the efficiency of extraction exceeded 60%. The accuracy of the quantitative determinations performed with this method was lower than 11%, the limits of detection being 1 ng/cm^3 for 4-*tert*-octylphenol and bisphenol A, and 5 ng/cm^3 for 4-nonylphenol. The method of releasing the adsorbed compounds from the sorptive element in the way described above is competitive with the SBSE technique which involves thermal desorption and is used in laboratories for environmental analysis.

Keywords: Stir bar sorptive extraction (SBSE), GC/MS, xenoestrogens, water treatment.