Abstract

The artificial sweeteners are currently worldwide used as food additives. In human organism they are only partially metabolized and then renally excreted. The big amounts of these abiogenic compounds contaminate municipal wastewaters. The efficiency of cleaning process in the sewage treatment plants (STP) is usually for cyclamate about 99 % and saccharine cca. 90 %. Acesulfame K is in STP practically not eliminated. Although most of artificial sweeteners are considered as good degradable, the residues were found in both surface waters and groundwaters. At long-term treatment can these compounds exhibited biological effect such as cancer genesis, gastrointestinal effects and/or surprisingly body mass increasing. The phytoextraction of saccharine and acesulfame K was experimentally studied by using of „in vitro“ cultivated plants *Helianthus annuus, Zea mays, and Brassica napus.* The phytoextraction was monitored as decrease in medium concentration of tested substance in Murashige-Skoog cultivation medium. It was shown, that used species are able to extract tested substances and during 5 to 7 days 30 – 60 % of acesulfam K and 50 – 60 % of saccharine amounts disappear from cultivation medium depending of used plant species. The best extraction ability was observed at *Helianthus annuus* cultivars - 0.1 mg/g of fresh weight at acesulfam K and 0.16 mg/g at saccharine.

Keywords

Artificial sweeteners, cyclamate, sacharine, acesulfame K, phytoectraction, wastewaters