TH228 Combined toxicity-profiling method for the evaluation of waste water effluents C. Krifaton, I. Orosz, A. Risa, Szent István University / Department of Environmental Safety and Ecotoxicology; A. Balázs, Environmental Safety and Ecotoxicology; N. Szilágyi, I. Tóth, Organica Technologies Inc; B. Kriszt, Szent István University / Department of Environmental Safety and Ecotoxicology. The quality and quantity of the water-soluble organic and inorganic substances has a crucial role in the water-qualification. Examination of the water quality (eg COD, BOD, ammonia, nitrite, nitrate, etc.) with chemical analysis is important to explore weather water purification technology follows the water quality standards. However, these data are inefficient to examine the combined effects on the ecosystem. For that reason integrate application of standard tests and ecotoxicological tests in WWTPs should be applied. The Organica Food Chain Reactor (FCR) is a complete wastewater treatment solution including solids removal, biological treatment/nutrient removal, phase separation, and final treatment for reuse quality, all incorporated into a compact, single structure. The biological treatment step is accomplished via a series of reactors, which were characterised by a combined toxicity profiling method, wherero and eukaryotic test-organisms were used: (1) The *Aliivibrio fischeri* luminescence inhibition test to determine the toxicity of water samples and (2) *Pseudomonas fluorescens* growth inhibition test to detect the harmful effects on the soil bacteria. (3) *E. coli*-based SOS-Chromo test served to detect genotoxicity or (4) the presence of hormonal substances was revealed by the BLYAS/BLYES bio-reporters, which employs the bioluminescent genetically modified strains of *Saccharomyces cerevisiae* by the help of human estrogen/androgen receptor genes. The combined toxicity profiling method revealed substandard influent wastewater samples that were characterized by increasing quality while going through the cascade system of the FCR. Interestingly, the detoxification efficiency was not linear through the FCR, since adverse effect was detected in the middle reactors, which can be attributed to harmful intermediates and by-products created during the biodegradation. However, the cyto/geno/endocrine disrupting effect was eliminated in the FCR and the effluent wastewater was found appropriate in an eco-toxicological point of view. This project was sponsored by the Research Centre of Excellence 8526-5/2014/TUDPOL and the Organica-Biorem KMOP-1.1.1-09/1-2009-0009 project. Thanks for the BLYES/BLYR for the University of Tennessee (Knoxville, Tennessee). Csilla Krifaton in this project was supported by the János Bolyai Research Scholarship of the Hungarian Academy of Sciences