Necessity of meat-processing industry’s wastewater treatment—a one-year trial in Serbia

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The emission of untreated or insufficiently treated wastewater is very common in developing countries and consequently has harmful effects on the environment. The aim of this study was to analyse 24 physico-chemical parameters in raw wastewater and effluent after tertiary treatment (denitrification and disinfection) derived from meat-processing plants in Serbia during four sampling campaigns conducted for one year. The biochemical oxygen demand (BOD₅) and chemical oxygen demand (COD) were measured at high concentrations up to 6,960 and 14,160 mg/L, respectively, indicating a large amount of uncollected blood, solubilized fat, urine and faeces in discharged wastewater. Required limits of emission in all samples according to the European and national legislation for most of the studied parameters were exceeded. According to the obtained results, there is an imperative need for pretreatment of wastewater from meat industry before discharging it into the sewer. The applied wastewater treatment improved the quality of water by reducing BOD₅ and COD values to 97.97 and 98.08%, respectively, while phosphorus removal efficiency varied from 15.29 to 68.48%.

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