

## ENVIRONMENTAL AND SECURITY ASPECTS WASTEWATER TREATMENT STATIONS OF FOOD INDUSTRY IN UKRAINE

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### Abstract

Implementation of the Environmental Policy of Ukraine contributes to the construction of the local wastewater treatment station at the food technology enterprises. For purification of such wastewaters it is possible to use anaerobic-aerobic integrated technology to ensure complete liquidation of impurities/pollutants. The aim of this article was to determine the optimal parameters of wastewater treatment and to eliminate the certain deficiencies of aerobic fermentation.

Experiments were conducted in the laboratory settings that included: methane tank, gas tank, aerotank-mixer and secondary purifiers. The subjects to recycling were sewage waters from dairy industry which were contaminated by COD 4,200 mg O<sub>2</sub>/dm<sup>3</sup>. The process took place in periodic and continuous modes. In the periodic mode the wastewater was fed into the setting once in a fortnight, in the realization of continuous mode - by little portions every hour. There was made the research of processes of biogas obtained through anaerobiotic digestion of alimentary production sewage in periodic and permanent modes with subsequent additional purification using aerobiotic fermentation.

It was established that continuous fermentation mode of wastewater flows is the most effective to get the additional source of energy - biogas. Investigated ways of intensification of the aerobic fermentation stage can increase the productivity of an aeration tank in the wastewater treatment, reducing respectively the environmental load in the region where a food industry enterprise is situated.

The proposed ways of intensification aerobic fermentation of waste water can improve the effectiveness of the cleaning process more than 99%.

**Key words:** Activated sludge, Wastewater treatment, Food industry enterprises, Aerotank, Aerobiotic fermentation, Safety.