

DANGEROUS WASTES OF SUGAR PRODUCTION

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Abstract

The article considers the main concerns of the dangerous wastes of sugar production in Vinnytsia region. There are suggested the new methods of cleaning of the industrial purposes water to eliminate all groups of microorganisms and reduce foam formation of water.

Key words : *industrial water wastes, sewage, saturation gas, foam formation, filtration sediment, purification.*

Introduction

Water resources are considered to be the main ones according to the intensity of the negative impact of sugar industry enterprises on the environment. By the water costs per output unit the sugar industry is one of the top industry of the national economy. The high level of consumption causes a large amount of industrial water waste, having a high degree of pollution and danger to the environment.

The sewage of this industry is characterized by a high index of suspended organic matter contents. This sediment has been accumulated in settling tank and filtration fields maps resulting in filtration fields maps, overflow and sewage in open water is primarily used for washing beets, extraction of sucrose from beetroot, washing the filtration sediment and sugar in centrifuges. Also, water is used in sugar beet production of calcium oxide, calcium for the purification of diffusion juice. The level of biological and chemical oxygen need is increasing in 2-3 times.

The saturation gas is produced directly at a sugar plant by burning limestone in vertical limestone gas furnaces. The furnace works continuously, limestone CaCO_3 together with solid fuel (coal) is fed into the furnace. Under the influence of heat treatment, limestone is decomposed on quicklime and saturation gas. The main and necessary component of the carbonation gas is CO_2 but the gas also contains by products of combustion, such as nitrogen dioxide (NO_x) sulfur dioxide (SO_2) carbon oxide (CO) and solid particulates as they cause the pollution of the atmosphere.

An increase in the volume of food production will require the introduction of effective measures to improve the use of water resources. The main condition for solving this issue is the transition to fundamentally new technologies for food production and further improvement of water consumption.

In general, measures for the protection of the environment used in food industry are insufficient and need to be improved through the reconstruction of enterprises and the complex use of raw materials, secondary resources and waste products. Industrial food production has an impact on water supply system. Only in sugar industry during transportation about 2 % of the total volume of water consumption is lost and it increases almost 1,5 times the amount of water used in the alcohol and tabaco industries taken together.

Conclusion

Therefore, it is important to develop new methods of cleaning of the industrial purposes water that would provide a high effect of cleaning on suspended solids and significant water elimination removal of all groups of microorganisms and reduction of foam formation of water.

This enables to reduce the specific consumption of fresh water and the amount of wastewater per unit of processed beet and as a result improves the ecological environment of beet processing plants.

References

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