

Materials of Conferences

USING A COMBINED METHOD OF WASTEWATER TREATMENT OF ORGANIC POLLUTANTS

Myrzaliev S.K., Berdikulova F.A., Aymbetova E.O., Imanberlinov D.E.

*Almaty Technological University,
Almaty, e-mail: de7482@mail.ru*

In order to develop methods of systematic pollution control Wastewater dairy industry we studied process engineering from the point of view of water operations, made-patent literature review of methods of treatment and methods of studying the physical and chemical composition of the waste water.

Scientific idea of work is the scientific assessment of ways to choose effective methods of wastewater treatment and their effective combination based on the monitoring of wastewater effluents in relation to the composition of meat and dairy companies, to ensure water circulation in the industry.

Today, the Republic of Kazakhstan has more than 300 enterprises of meat and dairy industry. Therefore, a significant consumer of fresh water in our country is the food industry, namely, meat and dairy industry. To 1 ton of product consumed

an average of 20–30 m³ of water. Therefore, the growth of water consumption outstrips growth treatment plant, which is one of the main factors of water pollution problems. Moreover, even with the most advanced treatment, including biological, all dissolved inorganic substances and 10% of organic contaminants remain in the effluent.

Waste water discharged by enterprises meat-milk processing industry, are divided into four categories: industrial, household, heat exchangers, heavy.

The water used in the dairy industry for the following purposes: cleaning tank with a hose, steaming tank-cleaning coolers, washing the milk, weights and weight of tanks. Water is also used for washing containers storing milk, steaming them, as well as equipment and floor space. Therefore, dairy effluents are highly polluted and contain substances which, in each other's presence complicates treatment of wastewater disposal at any direction (as in the sewer and the water body). Moreover, prolonged exposure of wastewater under anaerobic conditions (septic tanks, sewage networks) leads to zakisaniyu by lactic fermentation and decrease in pH below 5. Average for the composition of wastewater dairy and meat industries are shown in Tables 1 and 2.

Table 1

Chemical composition of dairy wastewater

Consecutive number	Nameindicator	Unitmeasurement	Valueindex
1	Suspended solids	mg/l	300–900
3	BOD	mg/l	1200–8380
4	Fat	mg/ l	100–205
5	Chloride	mg/l	150–300
6	Total nitrogen	mg/l	60–90
7	Phosphorus	mg/l	6–8
8	pH		6,5–8,0

Table 2

Performance of wastewater meat industry

Consecutive number	Name indicator	Unit measurement	Value index
1	Suspended solids	mg/l	700–3500
3	BOD	mg/l	1800–2700
4	COD	mg/l	2100–5600
4	Fat	mg/l	250–1300
5	Chloride	mg/l	150–300
6	Total nitrogen	mg/l	107–175
7	Phosphorus	mg/l	37–73
8	pH		6,4–8,0
9	Temperature	°C	17–28

From the data in the table shows that the high value of the index as much BOD characterizes biological waste water charge shall dairy.

In the meat industry, water is used in the process of washing carcasses, viscera of animals, cutting and dushirovanii carcasses. These effluents contain sand, blood, grease, food particles kanygi, hair, and so on. In the sausage shops water consumed in the preparation of meat, spice preparation, preparation casings, Waste water containing particles of fat, meat, blood, protein, salt.

Wastewater meat industry are different from dairy wastewater enterprises high BOD (microorganisms). This is turn increases the risk of reproduction of pathogenic bacteria and viruses. It is also necessary to note the lack of treatment facilities in major markets of Almaty where meat is slaughtered. Effluent used for meat processing are released into the small rivers are close to the markets. Given the available data on the average composition of the wastewater (Table 1 and 2), we propose a combined method of processing waste, which is the following: wastewater subjected to mechanical cleaning, which removes various mehanoprimesi, followed by pressure flotation stage (removal of emulsified fats, oils) waste water is subjected to coagulation reagent, where solids can be processed to obtain the feed product, clarified solution is supplied to the biological treatment after the removal of biomass, depending on the components of impurities, various methods of waste water purification using natural sorbents.

Rationale for the selection stage of purification is directly related to physical and chemical composition of the waste water meat and dairy enterprises.

Thus, we propose an effective method of wastewater meat and dairy industry to a level consistent use of environmental security to date.

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UTILIZATION HIGHLY PARAFFINIC OF OIL WASTES AND THE DEVELOPMENT OF SCIENTIFIC AND PRACTICAL FOUNDATIONS OF RESOURCE-SAVING TECHNOLOGIES

Tanzharikov P.A., Sarabekova Y.J.

*Kyzylorda State University by Korkyt Ata, Kyzylorda,
e-mail: pan_19600214@mail.ru*

In Republic of Kazakhstan the intensive development of oil and gas industry play a leading role. The inevitable consequence is the increase of anthropogenic impact on the objects of the environment. In the areas of design, production, transportation and refining of crude oil recorded violations of the natural ecological balance.

Consumption of oil and gas in recent decades become one of the most important terms of eco-

nomie development of Kazakhstan, which in turn consists of the five environmentally disadvantaged sectors of the domestic industry. In this regard, a new approach to the formulation and implementation of environmental projects, environmental protection in oil-producing regions, which is the practical realization of tasks set by the President of Kazakhstan Development Strategy until 2030: «The environmental, sanitary and epidemiological services, and standards bodies should work in accordance with priority goals» [1].

As the analysis of the problem and our research with technological waste should include: minimization of their generation, environmentally safe handling, the maximum separation of the groups already at the stage of education to enable the most efficient ways of recycling or disposal of waste in each group, the development of affordable and technically feasible technologies to involve waste of resource management. Need to develop methodological approaches that address the problem of disposal of industrial wastes are not the traditional ways and methods of improving the consumer properties. Such approaches to involve the waste of resource management should be the basis for strategies to deal with man-made waste and the appropriate technical solutions.

This suggests that the development of scientific and practical bases of resource-saving technologies of solid waste to ensure environmental safety Geosystems is the important economic problems whose solution requires the development of new conceptual approaches and eco-solutions.

Alarming increase of accumulated annual hazardous solid oil waste in the absence of recycling, leads to the alienation of land for long periods, which can be calculated for decades. At the same time, they are secondary material resources, which can be used in road construction, as well as gidroizoliruemyh materials instead of raw materials and to obtain a patent fuel.

Given that the waste oil has a significant impact on the environment, an important task is to develop and implement science-based standards of education oil waste at all stages of the cycle of oil production. Among all the problems in dealing with oil waste one of the primary advocates of optimal choice of recycling or disposal, providing a given level of environmental safety.

Our approach to recycling asphalt-resinous paraffin deposits (ARPD), consisting of organo-mineral mixes waterproofing designed to provide a material having a high physical-mechanical properties, using available and inexpensive components. As shown, the structure of organo-mineral waterproofing material that determines its physical and chemical characteristics, due to the properties, quantitative and qualitative components, technological methods, conditions subsequent hardening.

One of the key questions to identify the possibility of obtaining materials with desired physical