

TREATMENT OF SLUDGE OF URBAN ORGANIC WASTE

Kohanenko Marina, Spilberg L.U., Mihalevich V.V.

Institute of Engineering Thermophysics of NAS of Ukraine.

2a, Zhelyabova Str., Kyiv, 03057, Ukraine, tel. (044) 424-32-85, (044)424-96-33

e-mail: marinakohanenko@meta.ua, kremnev@ukr.net

The goal of the work. Accumulation of statistical data on the process of precipitation drying and the study of the effect of the amount of mixing of the product on the specific productivity, relative to the moisture content (kg / m² per day).

Results. In addition to the well-known problems in the field of municipal wastewater treatment - the outdated technological process and the deterioration of the main funds, which at least require repair, at all without exception of treatment plants, a systemic violation of the organization of the process is practiced - sewage sludge is not removed for several decades. This led to the accumulation of a lot of silt sediments on the sludge sites. The problem of processing sludge deposits of urban wastewater at the present time is not resolved. Solutions that are currently operating do not fully address the problem of non-contamination.

On the example of one of the studies conducted for the period from May 30.2018, on June 4.2018, we want to show how with the help of warm environment on special platforms it is possible to dehydrate the silt of checks of aeration fields, where it was kept to the appropriate humidity, then it can be formed on demand in granules or pellets.

Experiments were carried out on an experimental stand of drying and granulation of sludge wastewater.

Conditions of study: in two-section drying chamber, where the square of each section was 0.172 m² was loaded by 6 kg of product, which had a height of layer 0.05 m. The drying chamber all the time was out. The dehydrated product in section № 1 is averaged once a day, in section № 2 – twice a day.

Conclusions. For drying time from 30.05.18 p. by 4.06.18 the moisture content of the product changed from 62.8% to 31.2% and 40.3% respectively in the I and II sections.

The bulk weight of the initial product is 800 kg / m³, the bulk weight of the final product: not condensed - 579 kg / m³, sealed - 653 kg / m³.

Averaging the data obtained from 1 m² of area at a height of the product layer 0.05 m, the average amount of evaporated moisture per drying cycle: I section - 3.08 kg / m², II section - 2.63 kg / m² per day.

The conducted studies allowed to develop the working design documentation of the dryer.