INVESTIGATION OF REVERSE OSMOSIS OF GRAIN DISTILLERY STILLAGE ULTRAFILTRATION PERMEATE

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This work presents the results of reverse osmosis of ultrafiltration permeate grain distillery stillage. The problem of complex utilization of distillery stillage is relevant for environmental and economic performance of enterprises. The experiments were carried out in dead-end experimental set-ups. The membrane NanoRo series K were used (ZAO STC “Nanotex”, Russia). The corn stillage was used for the experiments. It was observed, that permeate flux increased linearly with increasing the operating pressure in the range from 2 to 8 MPa. Found that the most intensive separation process ultrafiltration permeate grain distillery stillage is at a pressure of 4 MPa. Zatrymuvalna ability membrane increases with increasing work pressure caused by a decrease in the concentration of dissolved component in the permeate. This selectivity membrane mineral substances is 95-97%. A concentration ultrafiltration permeate grain distillery stillage. With increasing concentration factor productivity gradually decreases, it is connected with the increased viscosity of the solution forgiveness, as well as gradual pollution membranes. Established that the content of dry resistances in concentrate increased by 8 times. In the resulting permeate contained no solids and mineral content decreased by more than 20 times. Reverse osmosis can be used for separation and concentration of permeate of grain stillage.

Keywords: reverse osmosis, ultrafiltration permeate, grain distillery stillage.