



**ISOLATION OF CARBOHYDRATES BACTERIUM-DESTRUCTORS
FROM THE SOILS OF ZMIINIY ISLAND**

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Environmental protection, including soil, from oil pollution under conditions of infrastructure development and limited anthropogenic influence on the Zmiiniy island is very important.

We have conducted the research the main purpose of which was to study the destructive activity of bacteria isolated from oil contaminated soil on the Zmiiniy island.

9 samples of soil with fresh and old petroleum pollution were sampled from the contaminated areas of the Zmiiniy island to isolate carbohydrates bacterium-destructors. The specimens were sampled at the rate of 500 g by a spatula treated with alcohol. The fourteen bacterial cultures were isolated from petroleum contaminated soil of the Zmiiniy island. The cultures were sowed on liquid synthetic MKD medium contained petroleum or diesel fuel to determine their destructive activity in relation to oil carbohydrates. Petroleum and diesel fuel were sterilized and added to the tubes with MKD in 1 % concentration. The cultivation of specimens was performed for seven days with the temperature of 22° C. On the seventh day the presence of bacterial growth as compared with control tubes was registered. The evidences of growth for heterotrophic bacteria using petroleum and diesel fuel as the only source of carbon and energy were considered: the destruction of the substrate layer, change of transparency or color of medium, appearance of bacterial tapes under the bottom petroleum layer, formation of flake in column of medium.

As the result of our research it was determined that seven of the fourteen bacterial cultures had destructive properties relatively to oil carbohydrates (nc11, nc12, nc13, nx21, nx22, nx23, nx24). The most active destructor of carbohydrates was strain nc13. The strain caused increasing rate of biomass already after 2-4 days while the destructive activity was being observed - disaggregation of a petroleum tape. In ten days it its almost complete destruction was observed. The data obtained may help to develop new methods of environmental protection from pollution by chemical agents such as oil and diesel fuel.

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