

PREVALENCE OF THE FACULTATIVELY-ANAEROBIC ENDOSPOREFORMERS IN DEEP-WATER BLACK SEA SEDIMENTS MICROBIOTA

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Facultatively-anaerobic endosporeformers (FAE; in most from *Bacillaceae*, *Paenibacillaceae* and *Planococcaceae* families) are ubiquitous in nature and represented in all available biotopes (*Mandic-Mulec I. et al.*, 2015). Their representation in sea has been only begun to be investigated. Black sea is interesting water area for such investigations because of the unique geological history and combination of physicochemical conditions. Prevalence of the FAE in different biotopes is a rarely investigated parameter, but interesting from ecological point of view.

Our aim was to investigate percent of anaerobic endosporeformers in microbiota of the deep-water Black sea sediments from different sampling points.

Samples of sediments were collected during expedition from Bremen university in March of 2011, from four points (242, 233, 258 and 269) on the depth from 878 to 2080 m. Points were located: 242 and 233 near Turkey coast; 258 and 269 near the South Coast of Crimea. The total heterotrophic microbiota and endosporeformer's percent were revealed by the sediment inoculation on plates with basal medium with 18% of sea salt. As inoculum were used unpasteurized and pasteurized suspensions of sediments in dilution 1:100, with consequent counting colony forming units.

Percent of FAE in sediments was determined for two temperatures of cultivation. The first temperature of cultivation was +25°C; The maximum of FAE was registered for point 269 – 100%. From other points were obtained next data: 258 – 29,3%, 242 - 23,1%, 233 – 26,6%, The second temperature of cultivation was +5°C, and maximum of FAE in this case reached to 17,3% but the minimum was 0%. Intermediate data were demonstrated to points 258 – 2,2%, 269 – 13,4%. It only partly correlates with a literature data (*Суслова et al.* 2012; *Wunderlin T. et al.*, 2014). Further investigations will clarify qualitative and quantitative composition of this fraction.

References:

1. *Mandic-Mulec I. et al.* Ecology of Bacillaceae. // 2015. – Microbiol Spectrum. – Vol. 3. – №1. P. 1-24
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3. *Wunderlin T. et al.* Endospore-enriched sequencing approach reveals unprecedented diversity of Firmicutes in sediments. // 2014. – Environmental Microbiology Reports. Access: <http://onlinelibrary.wiley.com/doi/10.1111/1758-2229.12179/full>.