

MONITORIZAREA UNOR PARAMETRI MICROBIOLOGICI ȘI A COMPOZIȚIEI ALGALE ÎN APELE DE SUPRAFAȚĂ ALE UNOR EMISARI DIN BAZINUL DORNELOR

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Abstract

The objective of this study was to establish the microbiological and algal load of surface waters from the streams that cross the Dorna's Basin. In order to carry out this study, 10 sampling stations were established over four streams, the study taking place during the period of two years, 2017 and 2018, between May and October. The samples were analyzed in the laboratory using specific methods for each monitored indicator, observing the fluctuations which are determined by the sampling location, weather phenomena, and the influence of anthropogenic factors that are relevant for the streams that were studied. Therefore, microbiological parameters are strongly influenced by contamination with faeces from both animals (wild and domestic), as well as from households, that are not connected to a centralized sewer system, especially the ones which use septic tanks that are, in many cases, inappropriately built. All microbiological indicators showed significant variations between sampling stations along the same stream, upstream the values recorded being much lower than downstream. The samples that presented the lowest values, for all the evaluated parameters, were those collected upstream of the Călimănel brook. The absence of the *Pseudomonas aeruginosa* indicator from all samples taken during the study was recorded at two of the stations, Călimănel-sus (stream) and Secu-sus and the spores of sulfite-reducing anaerobic bacteria (*Clostridium*) were not identified in the samples collected from Călimănel-sus station (stream). The samples with the highest degree of contamination were those taken from Arinu-jos station and those from Călimănel-jos, the anthropic influence being evident through the economic activities that were carried out. Similar values were obtained following the analyzes performed for each type of algae, recording higher levels of parameters in the case of samples taken from the Arinu-jos station. The maximum values were recorded from the samples taken from the stations on the Arinu rivulet in August 2018, after a torrential rain, when large quantities of organic substances were entrained. The main conclusion obtained from the interpretation of the results is that the surface waters have a significant microbial load and that it multiplies exponentially from the source to the collector.

Key words: parametri microbiologici, alge, contaminare
