

Can Monitoring of Microorganisms from Show Caves be used in Human Impact Assessment?

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The problem of tourist impact on caves has received special attention mainly considering the physical phenomena, surpassing by far the very few studies on the microorganisms that are brought by tourists inside the caves and their effect on cave environment (except for some few special situations). Our study intends to be novel in different aspects by taking into consideration microbial monitoring for a longer period of time and considering the relationship to different environmental features, including the geometry of the general development of the touristic sector, the number and type of openings, temperature, air relative humidity, CO₂, and number of particles in the air. A simple method was used by exposing RI-DA@COUNT plates to cave air and pools

water and counting the number of microorganisms at 24 hours intervals for 5 days. The mediums were for Total aerobic, Yeast & Molds, E. coli/Coliformes and Enterobacteriaceae. The number of Enterobacteriaceae and Coliformes was small for air samples and more significant for some of the water samples, while the number of Total aerobic and Yeast & Molds was significant in all cases. We will discuss the differences between caves and between stations inside each of the four studied caves where monthly sampling was undertaken. We also discuss the usefulness of this method in the assessment of human impact in show caves and the need for an integrated monitoring of show caves.

