

MYCOBACTERIUM SPECIES IN WATER AND SOIL SAMPLES FROM YELLOWSTONE NATIONAL PARK

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Mycobacteria are free-living saprophytes which form part of the microbial community in natural habitats such as soil and water. Although mycobacterial optimal growth conditions are mild temperature and acidic pH, some species are able to survive, in hot water, and in extreme acidic conditions. Since geothermal areas of Yellowstone National Park have all these features, the objective of this work was to assess the presence of mycobacteria in these habitats and to compare it with non-thermal environments from this National Park.

Water and soil samples were collected from thermal and non-thermal locations in Yellowstone National Park. Samples were analyzed by culture-based and molecular biology methods. Confirmation of the isolates and Identification of the species were done by fluorescent microscopy (Auramine-Rhodamine, Beckton Dickinson, USA) and molecular biology techniques (GenoType Mycobacterium CM and GenoType Mycobacterium AS kits, Hain Lifesciences, Germany).

Mycobacterium species have been isolated in several locations in Yellowstone National Park, mainly along Norris Geyser Basin. The percentage of positive results in thermal areas is very high (75%), when compared with non-thermal areas (35%). Different species have been identified, namely *M. avium*, *M. gordonae*, *M. interjectum* and *M. scrofulaceum*.