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FUNGAL SPORES UNDER CONDITIONS OF MARS SURFACE.

**Abstract**

Due to the importance of Mars on the field of astrobiology, the possibility that extremophiles, as fungi, can be transported via lithopanspermia from Earth to Mars has been studied. In this work, *Aspergillus* sp. and *Alternaria* sp. were subjected to conditions resembling those on the Martian soil. The experiment analyzed their viability under three different pH (7, 8, 9), two temperatures (28C, -12C), and three exposure times to UV radiation (equivalent to one, two, and five minutes on Mars), measuring the growth of the colony before and after the treatment. We observed that *Aspergillus* grew successfully at both pH 7 and pH 8 media, but its growth was lower at pH 9, while *Alternaria* can freely grow regardless if it is on a pH 7, 8, or 9 medium, showing a preference for pH 7. Low temperatures stopped or slowed the growth rate of both fungi genera, but they recovered their normal growth at favorable conditions, although *Aspergillus* needed a longer time to recover. On the radiation experiment, *Aspergillus* was severely affected by the irradiation, while *Alternaria* was not. From our data, we found that cooler temperatures and UV radiation are more harmful parameters than alkaline pH. The initial major growth and layers of hyphae development of *Alternaria*, along with the presence of melanin in its cell walls, could be the cause of its endurance.