What a colorful pole: insights into Antarctic snow algae blooms

Simposio (solo por invitación)

Microbiología ambiental

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(1) Sin Afiliación.

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Snow algae blooms, found in melting snowfields worlwide, are characterized by complex microbial communities dominated by green microalgae, bacteria, fungi, among others microorganisms. These communities alter snow color, reduce albedo, and may intensify snow melting. In Antarctica, these communities form under challenging conditions and variable nutrient levels during rapid snowmelt. Despite that environmental filtering, which includes factors such as nutrient availability, seems influential on the microbial community assembly, the specific nutrient content like nitrate, ammonium, phosphate, and organic carbon may not significantly impact the microbial community structure. A study tracking the progression of these communities in Antarctica indicates that bacterial composition is governed by selective forces, while eukaryotic community assembly follows stochastic processes, and in some cases snow algae experience dispersion limitations. Thus, the transition from green cells to red dormant propagules emerges as a critical factor in snow algae ecology, facilitating successful in situ reestablishment and dispersion across geographical locations.