{rokbox title=|Eggs of Chelonia mydas (A) and Dermochelys coriacea (B), and internal view of one eggshell (C) with macroscopic signs of STEF (red arrows) :: Image: Authors| thumb=|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-csic-isolation-molecular-identification-bibi-2025-thumb-et-al.jpg|}images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-csic-isolation-molecular-identification-bibi-2025-et-al.jpg{/rokbox}

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Isolation and molecular identification of pathogens causing sea turtle egg fusariosis in key nesting beaches in Costa Rica
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Abstract: The global rise of fungal pathogens presents an emerging threat to biodiversity, with significant risks to species such as endangered sea turtles. The fungal disease known as sea turtle egg fusariosis (STEF) is associated with high embryo mortality rates and represents a substantial conservation challenge. This disease is caused by two fungal species, namely *Fusarium falciforme* (Ff) and *Fusarium keratoplasticum* (Fk), and their identification is essential for guiding future efforts to address potential fungal infections, particularly on important nesting beaches such as those in Costa Rica. In this study, we conducted fungal isolations from sea turtle eggshells and nest sand at four key nesting beaches along the Pacific and Caribbean coasts of Costa Rica to evaluate the presence of STEF-causing species. For accurate identification, we employed a multilocus sequence typing (MLST) approach, analyzing three genetic loci. We obtained 147 axenic cultures, of which 32% belonged to the STEF-causing species Ff (n = 32) and Fk (n = 15). *Fusarium falciforme* was found across all study locations on both coasts of Costa Rica, whereas Fk was only detected at one beach on the Caribbean coast. This study represents the first survey to accurately identify STEF-causing species in Costa Rica, revealing a widespread presence on the main nesting beaches. Currently, STEF is not severely affecting sea turtles in Costa Rica; however, various factors, such as changes in the nesting beach environment and sand composition, could increase the incidence and severity of the disease, posing a threatening risk to embryonic development. Therefore, a better understanding of the presence and distribution of these pathogens is critical for preventing the development of this emerging disease.

Keywords: turtles, *fusarium*, bird eggs, fungal pathogens, beaches, eggs, phylogenetic analysis, nucleotides