



**Figure S1. Redundancy Analysis (RDA) examining the relationship between the most abundant pathogenic fungal species and selected environmental variables.** Axes represent the percentage of explained variation (RDA1: 89.7%; RDA2: 6.9%). Species distributions (in red) are constrained primarily by Mean Annual Temperature (MAT) and Aridity Index (AI), along with other variables such as soil organic carbon (SOC), pH, and precipitation seasonality (PSEA).