

South America: an Invaluable Source of Yeast Diversity Lacking a Specialized Culture Collection

Diego Libkind

Instituto de Investigaciones en Biodiversidad y Medioambiente (INIBIOMA), UNComahue – CONICET, Bariloche, Argentina. libkindfd@comahue-conicet.gob.ar

South America possesses the largest biodiversity of the entire planet with approximately 40% of total global diversity. Yet, our knowledge of the biodiversity of many areas is scarce and this fact becomes even more significant when referring to microbial diversity. For many years microbial studies in South America were done by foreign researchers given the absence of local specialized human resources and infrastructure, and consequently native microorganisms were studied and preserved abroad. Today, local scientific development has led to a change in this respect. However, regarding yeast biodiversity, changes occur more slowly than other microbiological disciplines. Currently, only a few South-American laboratories have focused on native yeasts and so far local specialized yeasts culture collections are lacking. As a result, local microbiologists must send strains to foreign culture collections for preservation and/or for the description of new species. Despite such limitations, research on yeasts in South America is gradually increasing and has proven the existence of an exceptional yeast diversity, which, often, possesses important biotechnological potentialities. Scientific cooperation between South-American laboratories focusing in yeasts has been probably one of the most significant goals achieved in the last years, and will surely boost local yeast research in future years. Our studies in Patagonia focus mostly on basidiomycetous yeasts, and will be addressed in this presentation as an example of the importance of the bioprospection of South-American microflora, particularly, in unexplored habitats. Such investigations also contributed to yeast taxonomy and systematic, given that 12 novel yeast species have been described and more than 20 additional species are in progress. These, together with genetically unique strains of known taxa (e.g. *Phaffia* and *Saccharomyces*), have been isolated from Patagonian natural environments and have shown potential for the production of compounds relevant to the biotechnology industry such as carotenoid pigments, essential lipids, psicroenzymes and mycosporines (UV sunscreens).