

TITLE: ATLANTIC RAIN FOREST AND CAATINGA DRY FOREST: DIVERSITY OF YEASTS ASSOCIATED WITH THE BROMELIAD PHYLLIPLANE

AUTHORS: FÉLIX, C.R.; NAVARRO, H.M.C.; ANDRADE, D.A.; ALMEIDA, J.H.; LANDELL, M. F.

INSTITUTION: UNIVERSIDADE FEDERAL DE ALAGOAS (LOURIVAL MELO MOTTA AVENUE s/n CEP 570729-000, MACEIÓ – AL, BRAZIL)

ABSTRACT:

Brazil is a megadiverse country with many unique and highly endemic environments. The Atlantic Rain Forest (ARF) and the Caatinga Dry Forest (CDF) are ecosystems with different phytophysionomic and meteorological parameters, but both are important because of their unique characteristics. The ARF is a tropical rainforest, home to 1% to 8% of the world's species. On the other hand, CDF is the largest dry forest in South America with an area of ~1 million km², marked by long periods of drought and high solar radiation. Bromeliads are plants with high diversity and endemism, ecological importance and a broad environmental spectrum distribution, from humid environments to dry forests, for example. In this context, our aim was to investigate the diversity of yeasts associated to phylloplane (leaf surface) of bromeliads in ARF and CDF environments. Bromeliad leaves samples were collected, had an area of 10 cm² cut and washed under mechanical agitation. The final product was inoculated on modified YM agar for 7 days at 22-25 °C. The genomic DNA of the yeast isolates was extracted, the D1/D2 rDNA region was amplified by PCR and then sequenced by Sanger method. The diversity indexes were generated in PAST software. A total of 140 samples of bromeliads were collected (80 from ARF and 60 from CDF). Then, 413 strains of the yeasts and yeast-like were isolated (222 from ARF and 191 from CDF). We found a richness of 175 species (93 from ARF and 82 from CDF). Only 22 species were common to the two environments, a dissimilarity of almost 85%. The diversity indexes of Shannon (H'), Simpson dominance (D) and equitability (J) were similar in both ecosystems, ARF (H'=4.222, D=0.0228, J=0.896) and CDF (H'=4.054, D=0.025, J=0.907). The species responsible for the high dissimilarity between environments have low occurrence (frequently found only once in the study), while the core groups occurs frequently and are commonly found in plant tissues such as *Aureobasidium* spp., *Hannaella* spp., *Papiliotrema* spp. and *Vishniacozyma* spp.. Some species of these groups are cosmopolitan and strong space and nutrient competitors, such as *Aureobasidium pullulans*. The results indicate that CDF, although considered a more hostile environment, is as diverse as ARF. More studies are necessary, but our results reinforce the uniqueness of each environment and that dry forests are also rich environments.

keywords: Leaf, tropical rain forest and tropical dry forest.

Development Agency: Coordenação de Aperfeiçoamento de Pessoal de Nível Superior - CAPES, Fundação de Amparo à Pesquisa do estado de Alagoas - FAPEAL, Conselho Nacional de Desenvolvimento Científico - CNPq.