

Chemical Analysis of Cycads from Varied Environment

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Cycads are one of the most primitive plants (ancestral species), that are believed to have existed even during the Mesozoic Era, the dinosaurs period. They have evolved over millions of years, in varied climate and habitat, and yet there are some feature that has remained unchanged over years. For my thesis, I study the chemical and functional traits of cycads. The functional analysis includes studying of morphological features the shape, weight, the association of roots with bacterial colonizes i.e; coralloid roots etc. Chemistry study deals with concentration of important elements like nitrogen, phosphorus, carbon and other important compounds in the samples,

The objective is to either study cycad plants from different species which are adapted to similar habitat like the rainforest, dry forest, desert etc. or study all plants from single species of cycads in a different range of habitat. For the functional analyze of the morphology . First, the samples are collected from the plants, cleaned and preserved, and lastly they are scanned and analysis on a software. For chemical analysis, at first the leaves and roots samples are ground into fine powder, which are micro weighted and concentration of important elements like a carbon isotopes, nitrogen and phosphorus etc. are measured.

Chemical analysis of plants to understand ecological factors and evolutionary aspect, and studying bacterial colonization in roots called coralloid roots make this an unique an important project. Also, Florida has one of the best collection of cycads an ideal place to research cycads. Many species of cycads are endemic to a certain island like Haiti, Hispaniola, Dominican Republic etc. Understanding the function of morphology and chemistry of cycads in a different environment and their history can help in conservation efforts and can open doors for further research