Abstract

Wood and bark anatomy and histochemistry of Acacia bilimekii Humb. & Bonpl., Acacia cochliacantha Mcbride., Conzatia multiflora (Rob) Stand. and Guazuma ulmifolia Lam. are described from stem samples collected in a tropical dry forest (Morelos, Mexico). Enzyme activities were tested in tangential, radial and transverse cuts of fresh material. Histochemistry and stem anatomy were studied on similar cuts previously softened in a solution of water-glycerol-PEG. Our results show that the anatomical patterns of bark and wood, as well as the histochemical patterns and specific gravity, are influenced by water accessibility and climate; these patterns could guarantee mechanical and anti-infection strategies to support extreme conditions. Enzyme cytochemistry reveals biochemical activities probably related to lipid utilization routes for the lignification processes and for synthesis of extractives; these results suggest that the formation and maturation of woody tissue is very active at the beginning of the rainy season. These species are widely used by the local population. Traditional uses include firewood, dead and live fences, fodder, construction, supporting stakes, handcrafts, farming tools, extraction of tanning products, and medicine. There is no relationship between use and abundance. Alternative uses are proposed according to a density index.

Keywords
Bark and wood anatomy, histochemistry, enzyme cytochemistry, uses, drought-deciduous species, dry forest, Mexico.