



ANATOMICAL CHARACTERIZATION OF THE ROOT, STEM AND BRANCHES WOOD OF URBAN TREES

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Abstract

The objective of this study was to characterize and compare the anatomy of roots, stem and branches wood of eight species of native and exotic trees present in the urban arborization of the State of São Paulo. The study provides an understanding of the physical-mechanical anatomical properties that are essential for the understanding trees' resistance to external stresses, allowing a more accurate diagnosis of the condition of the tree.

Key words:

Macroscopic analysis, non-destructive tests, cellular structure

Introduction

The presence of trees and green areas within the urban domains is considered of fundamental importance for the well-being of society when it refers to the reduction of temperature, pollution and shelter to the existing fauna. However, the same trees can also be the protagonists of accidents. Within this context, this scientific initiation project aimed to characterize and compare the anatomy of root, stem and branches wood of native and exotic tree species present in the green urban areas of the State of Sao Paulo. The study provides an understanding of the physical-mechanical anatomical properties that are essential for understanding the resistance of trees to external stresses, allowing a more accurate diagnosis of the condition of the tree. Thus, contributing to the decision making regarding the risk of falling urban trees.

Results and Discussion

From the analyzes it was possible to obtain information on the organoleptic and macroscopic characteristics according to Zenidi & Ceccantini (2007) for root, stem and branch wood of four species, among the eight species collected for this study (Chart 1).

Conclusions

The results, still preliminary, point towards organoleptic variations in the wood of the different organs (root, stem and branches) for the same species. In addition, the anatomical analyzes of the different organs show changes in the cellular patterns for the same species.

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Chart 1. Organoleptic characteristics analyzed for root, stem and branches wood of four species of urban trees.

Species analyzed	Root	Branch	Stem
<i>Enterolobium contortisiliquum</i> (Vell.) Morong	Color whitish; Right to irregular; Thick texture; And low mass density	Yellowish color; Right; Thick texture and low mass density	Brown color; Medium texture; Low mass density
<i>Switenia macrophylla</i> King	Color brownish; Wavy grain; Thick texture; Low mass density	Brown color; Right; Thick texture; Low mass density	Yellowish color; Right; Medium texture; low mass density
<i>Handroanthus pentaphylla</i> (L.) Mattos	Blackish color; Right; Medium texture; Low mass density	Yellowish color; Wavy grain; Medium texture; Low mass density	Yellowish color; Right; Medium texture; High mass density
<i>Schinus molle</i> L.	Blackish color; Right; Medium texture; Low mass density	Brown color; Right; Fine texture; Low mass density	Color brownish; Right; Fine texture; High mass density

Zenid, G. J. & Ceccantini, G.C.T. 2007. Identificação botânica de madeiras. São Paulo: Laboratório de Anatomia e Identificação de Madeiras do Instituto de Pesquisa Tecnológica do Estado de São Paulo.