

Monitoring tree-ring formation, radial increment and phenology of forest trees

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Resumo

Many tropical and subtropical tree species produce growth rings with annual nature or not in response to seasonal environmental factors that influence the activity of the vascular cambium. By applying some non destructive methods and long-term observations, involving wood anatomy, cambial markings, phenology and permanent dendrometer bands it is possible to analyze the nature and appearance of tree-ring formation, growth rates and periodicity of some tree species growing on tropical and subtropical areas. Cambial dormancy and annual tree rings in woody plants are generally induced by seasonally alternating favorable and unfavorable growth conditions. Growth rates and periodicity may change depending on species, specific years, tree age, forest structure, environmental conditions and vigor of the plants. Promising results from some experiences carried out are briefly presented also showing how these methods can be useful and applicable on forest monitoring. Long term observations and multidisciplinary activities focused on relationship between climate and environmental conditions in the tropics, especially in areas with little or no clear seasonality, contribute to understanding these relationships and some of the multiple mechanisms related to forest dynamic. These studies can provide important information for the management and conservation of these endangered forests.