

TITLE

Using the Near Infrared Spectroscopy (NIRS) technique on a pilot scale, as a potential tool for the monitoring of Mahogany trade

SUMMARY

The wood anatomy is a tool for identification when there is no availability of plant material as required for the conventional botanic classification. The correct identification is an important task today for the purpose of preservation of species, exploitation and monitoring of the timber trade. Identification of similar wood species requires highly specialized knowledge. One alternative is the development of instrumental methods that enable rapid analysis. The Forest Products Laboratory - LPF was pioneer in classifying similar woods of native species: *Swietenia macrophylla* King. (Mahogany), *Carapa guianensis* Aubl. (Crabwood or Andiroba), *Cedrela odorata* L. (Cedar), and *Micropholis melinoniana* Pierre (Curupixá) using near infrared spectroscopy (NIRS) associated with multivariate statistics analysis (PLS-DA). Now, it is necessary to test a commercial portable equipment already used for other materials (soy bean, coffee, etc) and simultaneously expand the NIRS spectra database of Mahogany, incorporating a large number of samples in order to build a robust model of this wood discrimination. The specific outputs and activities of this project include: 1) a consolidated methodology for an important commercial wood species identification by NIRS; 2) transfer of the statistical model from the bench equipment to a portable one; 3) consolidation of the databank of Mahogany spectra covering three occurrence regions in Brazil, 4) field tests with NIRS portable equipment carried on a pilot scale; and 5) expanding the present databank of Mahogany spectra with samples for at least two countries in South America.

EXECUTING/IMPLEMENTING AGENCY:

- Brazilian Forest Service /Forest Products Laboratory (SFB/LPF)
(IBAMA's Headquarters area, SCEN, Av. L4, Trecho 2, Bloco B, CEP 70.818-900 Brasília, DF, Brazil)
- Antônio Carlos Hummel, General Director of the Brazilian Forest Service – SFB
- Paulo José Prudente de Fontes, Head of the Forest Products Laboratory - LPF/SFB

ENDORISING AGENCY:

- IBAMA Brazilian Institute for the Environment and the Natural Resources; SCEN Av. L4, Trecho 2, Edifício Sede do IBAMA, CEP 70.818-900 Brasília, DF

DURATION (months): 24 months.

PROPOSED START DATE: January 1st, 2014