Preliminary first global NIRS models to predict chemical properties of *Eucalyptus* woods

Gilles Chaix

Global near infrared models to predict wood properties of Eucalyptus were developed using one hundred samples. Samples were provided from different country and location (Congo, Senegal, Brazil), including different species and hybrids (E. urophylla, E. grandis, E. camaldulensis, E. urophylla x E. grandis, E. urophylla x E. pellita) from different age (from 5 to 30 years old). The global models tested by cross-validation, based on our own reference data, shown encouraged fits for extractives (correlation coefficient R^2cv = 0.98 and error of cross-validation SECV = 0.76 and ratio of performance deviation RPD = 7.2), lignin (R^2cv = 0.91, SECV = 1.1, RPD = 3.3), cellulose (R^2cv = 0.89, SECV = 1.2, RPD = 3.0), hemicelluloses (R^2cv = 0.82, SECV = 1.6, RPD = 2.4). The high variability of chemical properties due to the sampling (for example extractive contents varied from 3 to 21%), associated to the good repeatability of reference measurements, provided high values of model parameters. These results suggest that global calibration could be useful in tree breeding processes and for different experiment trials from the fields, to rank genotypes for extractives, lignin, cellulose, and hemicelluloses. In order to get near infrared local models, we are improving our sampling in term of number and origin of wood.

CIRAD, France

ISSN 2225-594X

IUFRO Working Group 2.08.03
IMPROVEMENT AND CULTURE OF EUCALYPTS

PROCEEDINGS

PORTO SEGURO, BAHIA, BRAZIL

14th to 18th | NOVEMBER | 2011

Porto Seguro
2011