



Tropentag, September 14-16, 2010, Zurich

“World Food System —
A Contribution from Europe”

Enhancement of Possibilities for Farmers in the Coffee Region of Colombia Supported on Bamboo Forest Managing

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Abstract

The *Guadua* (*Guadua angustifolia* Kunth) is the most important woody bamboo species of tropical countries in South America. In the coffee region of Colombia, forests are highly fragmented and dominated by this bamboo species; however these forests represent an important alternative for farmers as a complement of agriculture or livestock. During several decades, bamboo forests have provided raw material for different application such as structures, handicrafts and fences. In addition, these forests fulfil relevant ecological functions because of high biodiversity, habitat for fauna, soil protection, CO₂ fixed and water regulation. Currently, demand of *guadua* culms has increased due to some initiatives of rural enterprises aimed to develop bamboo products for local and international market. Therefore, high quality of bamboo culms is demanded by these enterprises. Quality depends on different factors which include silvicultural practices, the selection of mature culms, standardisation of culms and organisation of farmers. Silvicultural practices are being optimised by proper inventory and planning. Maturity of culms which is the base of the quality definition is being estimated by different ways including physical and mechanical properties, lignin and starch content and developing a device which relates maturity and the transmission of sound waves. After defining the quality and also including information on dendrometrics features, culms are standardised according to range of values previously established. Farmer organising has included training and technical support as well as engages them with forest certification process. Improvement in each one of the factors contributes to consolidate an alternative for rural farmers based on bamboo managing.

Keywords: Bamboo quality, maturity, physical and mechanical properties