

VARIATION IN MOISTURE CONTENT AND DENSITY WITHIN THE INTERNODE OF THE CULM OF *BAMBUSA BAMBOS* AND *DENDROCALAMUS STRICTUS*

R. SANTHOSHKUMAR\* AND K.V. BHAT

Kerala Forest Research Institute, Peechi, Kerala, India

\*Present Address: Post Graduate Department and Research Centre of Botany, Mahatma Gandhi College, Keshavadasapuram, Thiruvananthapuram, Kerala, India

\*Corresponding author: santhoshkumar30576@gmail.com

**ABSTRACT:** Moisture and Density are the most important parameters of bamboo culms for the utilization in various purposes. A number of studies were carried out in these aspects. However, most of the studies were related with age and height levels of the culms. The present result is connected with the variation in moisture content and density within the internode. The result shows that a uniform variation was observed within the internode. The maximum moisture content was noted in mid portion of the internode in both the species followed by upper and lower portions of the internode. There was no earlier reports was available in connection with this results

**Keywords:** Parameters, Utilization, Internode, Moisture, Density.

**Citation:** Santhoshkumar R, Bhat KV (2016) Variation in moisture content and density within the internode of the culm of *Bambusa bambos* and *Dendrocalamus strictus*. Indian J Trop Biodiv 24(1): 103-105

Received on : 21 Apr. 2016

Accepted on : 05 May. 2016

Published on : 30 Jun. 2016

Bamboo is an important natural resource. Due to concerns regarding unplanned rapid deforestation, for meeting the needs of growing construction industry, bamboo has emerged as one of the best alternatives. Bamboo is a viable alternative to wood. In fact, bamboo is also one of the oldest building materials used by mankind (Latif *et al.*, 1990). In many densely populated countries of the tropics, certain bamboos supply at least one suitable material that is sufficiently economical and plentiful to meet the extensive need for economical housing (McClure, 1966). Bamboo is widely used for the conservation of soil (Tewari, 1992), landscape designing and it provides shade, wind breaks, acoustical barriers and is a source of visual beauty. It has anti-erosion properties which can be utilized for creating successful watershed, covering the soil along the sliding river banks, deforested areas, and in areas prone to earthquakes and mud slides. It has a total of stem flow rate and canopy intercept of 25% which means that bamboo significantly reduces rain run-off, preventing massive soil erosion in the regions where it is grown. A number of studies were carried out in connection with different physical properties such as density, moisture content and shrinkage. Most of these studies were related to age and height levels of the culms. Variation in density and its relation to the

distribution, frequency and percentage of tissues in Bamboo culms were studies (Santhoshkumar and Bhat, 2014, 2015). The present study shows the variation in moisture content and density within the internode.

#### Source of materials

Samples of *B. bambos* were collected from different forest areas of Kerala, from three localities, Attappady, Nilambur and Palappilly. The samples were collected from Natural forest as well as planted areas. Age of the culm was ascertained based on the procedure described by Waheed Khan (1962) and Banik (1988).

#### Physical properties

##### Basic density

The volume of culm samples was determined by water displacement (ASTM, 2002). The samples were kept in a hot air oven at 105°C for about 48 hours (ASTM, 2002) for drying. After cooling the samples in a desiccator, the oven dry weight was determined. Basic density was calculated using the formula,

$$\text{Basic density} = \frac{\text{Oven dry weight (kg)}}{\text{Green volume (m}^3\text{)}}$$