302

Use of Wood Characters in the Identification of *Terminalia* spp in Sri Lanka

Ruwanpathirana N.D.*

Research & Training Division, State Timber Corporation, Sampathpaya, Battaramulla, Sri Lanka
**nimalruwan@gmail.com*

Abstract

More than 250 timber species are being used by the timber industry in Sri Lanka, among the major timber consumers are housing developer, furniture manufacturer and wood fabricators. Once the tree is felled, the identification of the tree become very difficult and need to rely on their macroscopic/ microscopic features and physical properties of timber. Timber identification is necessary for right use of timber and to check on fraud in timber trading as some timber traders mix or sell low price, different type of timber species, deceiving customers to increase their profit margin.

Five timber species of *Terminalia* namely *Terminalia arjuna* (Kumbuk), *Terminalia bellirica* (Bulu), *Terminalia catappa* (Kottamba), *Terminalia chebula* (Aralu) and *Terminalia parviflora* (Hampalanda) of the family of Combretaceae were studied anatomically in search of sufficient features by which one Terminalia sp can be separated from the other . The examination of the transverse section of wood with a hand lens (x25) does not provide adequate reliable information to differentiate one species from the other for identification due to resemblance of wood structure of five Terminalia spp. Hence for the anatomical examination, transverse section (T.S.), radial longitudinal section (R.L.T.) and tangential longitudinal section (T.L.S.) were obtained using the microtome.

In this study, some important wood anatomical and non anatomical features were studied according to IAWA (1989). It was found that all the Terminalia spp had diffuse porous wood having vessels mainly solitary and occasionally in 2 -3 vessels of radial multiples. Mean vessel diameter and vessel diameter range were recorded respectively as 241 µm and 172-331 µm in *Terminallia arjuna,* 169 µm and 107-204 µm in *Terminalia bellirica* , 240 µm and 169-309 µm in *Terminallia catappa,* 115 µm and 68-175 µm *inTerminalia chebula* and 124 µm and 75-159 µm in *Terminalia parviflora*. Mean vessel frequency were observed as 3 per mm^2 in *Terminallia arjuna,* 4 per mm^2 in Terminalia bellirica , 3 per mm^2 in *Terminallia catappa*, 6 per mm2 in *Terminalia chebula* and 5 per mm^2 in *Terminalia parviflora*. Mean rays frequency, mean ray height and mean ray width were found respectively as 9 per mm, 206 µm, 24 µm in *Terminallia arjuna*, 11 per mm, µm 283, 24 µm in *Terminalia bellirica*, 8 per mm, 280 µm, 25 µm in *Terminallia catappa*, 13 per mm, 239 µm, 31 µm in *Terminalia chebula* and 10 per mm, 235 µm, 30 µm in *Terminalia parviflora*. Ray cell arrangement is mostly uniseriate and occasionally byseriate in *Terminalia bellirica, Terminalia parviflora, Terminallia arjuna.* Ray cell arrangement is mostly multiseriate and occasionally uniseriate in *Terminallia catappa. Terminalia chebula* has uniseriate ray cell arrangment.

Different type of axial parenchyma types were found in each terminalia species from which the prominent type of axial parenchyma was identified from each species as follows; *Terminalia bellirica* had axial parenchyma band (more than three cells wide). *Terminalia*

parviflora and *Terminalia catappa* had aliform/ vasicentric type axial parenchyma which can be differentiated from confluent parenchyma type in *Terminalia chebula*. Vasicentric (halo) parenchyma typewere found mainly in *Terminallia arjuna*. Finaly, it can be concluded that ray cell arrangement and axial parenchyma types can be used together as baseline to distinguish Terminalia spp in Sri Lanka for the purpose of timber identification.

Keywords: Wood characters, *Terminalia* spp