

Improved Utilisation of Lesser Known and Plantation Grown Timbers from South India



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A. Nature of Technology: Improved Utilisation of Lesser Known and Plantation Grown Timbers from South India

B. Process in Brief:

India is bestowed with about 1600 timber yielding species out of which about 126 species have been commercially exploited. However, wood from all the species are not alike. A few species are preferred over others due to their superior properties and this led to their over exploitation. Unscientific use of such valuable timbers also sometimes urges frequent replacement. Continuous harvest of timber from natural forest in the past has resulted in reduction of forest cover and depletion of existing stocks. To prevent over exploitation, government/supreme court enforced restriction on the felling of tree in natural forest in 1997. As a result, there is always a gap between demand and supply of timber and this gap is increasing due to the growing population. To fill the gap between demand and supply, import of timber has played a major role. However, this is not a permanent solution as it incurs a huge flow of money out of the country. From global perspective, import also encourages exploitation of valuable timber in the exporting country and in due course of time might come under regulations. To meet the ever increasing need of the growing population, the assured source of timber is plantation forest. Use of lesser known species will also reduce the pressure on primary species.

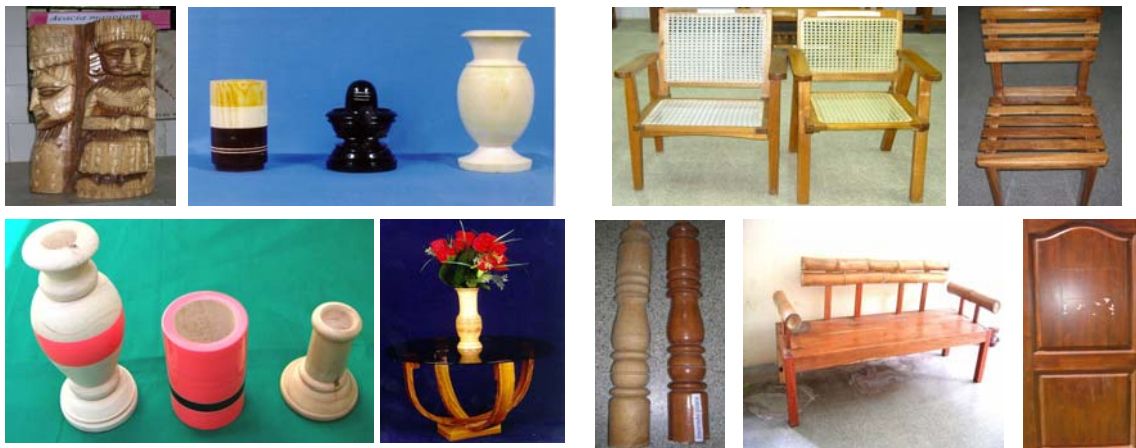
Plantations of fast grown and short rotation timber species were established throughout the country in the last few decades. In this processes, a number of exotics have also been introduced initially on trial basis and later on large scale plantations including clonal trials by government, public and private sectors. Fast-grown plantation species have different timber characteristics from the same species grown in native forests. In plantation forestry, mostly fast grown and short rotation species are preferred. The rate of growth influences the wood quality by influencing the relative proportion and arrangement of different cell types which make up the wood. An understanding of anatomical, physical, and mechanical properties of such species helps in classifying and grading the timber for various end uses. In promoting these species as a substitute for the traditional timber, scientific data plays a pivotal role. In this endeavor, IWST, Bangalore has been working to evaluate the properties of these timbers. This led to generation of scientific data on number of lesser known/plantation grown species. Although all of them are not available for commercial exploitation but the generation of scientific data helps in classifying the timber for various end uses based on their physical and mechanical properties. In order to reduce pressure on use of primary timbers from natural forests, a number of lesser known timbers and timbers from plantations have been studied for their various physical, mechanical and anatomical properties to find out their suitability in different applications. Suitability indices of these species for different potential uses such as construction, door and window shutters, furniture, handicrafts, agricultural implements, sports goods, tool handles etc. were worked out and recommendations were made for various end uses. An account of the species studied and recommended for different end use from southern states is given below.

Species studied at IWST Bangalore for various end uses

Usages	Species recommended by IWST
Construction	<ul style="list-style-type: none"> • <i>Acacia auriculaeformis</i> (Bengaljali) • <i>Cocos nucifera</i> (Coconut wood) • <i>Eucalyptus camaldulensis</i> (Eucalypts) • <i>Gironniera reticulata</i> (Naru bhootala) • <i>Hevea brasiliensis</i> (Rubberwood) • <i>Protium serratum</i> (Murtenga) • <i>Tecomella undulata</i> (Rohida)
Furniture	<ul style="list-style-type: none"> • <i>Acacia auriculaeformis</i> (Bengaljali) • <i>Acacia mangium</i> • <i>Eucalyptus citriodora</i> (Eucalypts) • <i>Grevillea robusta</i> (Silver oak) • <i>Hevea brasiliensis</i> (Rubberwood) • <i>Sterculia urens</i> (Karar) • <i>Tecomella undualata</i> (Rohida)
Handicraft	<ul style="list-style-type: none"> • <i>Acacia auriculaeformis</i> (Bengaljali) • <i>Acacia mangium</i> • <i>Azadirachta indica</i> (Neem) • <i>Eucalyptus camaldulensis</i> (Eucalypts) • <i>Eucalyptus citriodora</i> (Eucalypts) • <i>Eucalyptus tereticornis</i> (Eucalypts) • <i>Grevillea robusta</i> (Silver Oak) • <i>Gyrocarpus jacquini</i> (Tanaku) • <i>Maesopsis eminii</i> (Musuzi) • <i>Simarouba glauca</i> (Oil tree)
Packaging	<ul style="list-style-type: none"> • <i>Eucalyptus camaldulensis</i> (Eucalypts) • <i>Eucalyptus hybrid</i> (Eucalypts) • <i>Grevillea robusta</i> (Silver oak) • <i>Gyrocarpus jacquini</i> (Tanaku) • <i>Hevea brasiliensis</i> (Rubber wood)
Agricultural Implements	<ul style="list-style-type: none"> • <i>Eucalyptus camaldulensis</i> (Eucalypts) • <i>Gironniera reticulata</i> (Churchi) • <i>Melia composita</i> (Malabar Neem) • <i>Protium serratum</i> (Murtenga) • <i>Tamarindus indica</i> (Imli) • <i>Tecomella undulata</i> (Rohida)
Sports Goods	<ul style="list-style-type: none"> • <i>Acacia auriculaeformis</i> (Bengaljali) • <i>Mangifera</i> spp. (Mango) • <i>Morus alba</i> (Mulberry)
Boats and other Marine crafts	<ul style="list-style-type: none"> • <i>Albizia falcataria</i> • <i>Bombax ceiba</i> (Semul) • <i>Gyrocarpus jacquini</i> (Tanaku)
Picture & Slate Frames (Small Scale Industries)	<ul style="list-style-type: none"> • <i>Entorolobium contortisiliquium</i> • <i>Eucalyptus camaldulensis</i> (Eucalypts) • <i>Eucalyptus hybrid</i> (Eucalypts) • <i>Gyrocarpus jacquini</i> (Tanaku)
Panel Products	<ul style="list-style-type: none"> • <i>Eucalyptus camaldulensis</i> (Eucalypts) • <i>Grevillia robusta</i> (Silver oak) • <i>Hevea brasiliensis</i> (Rubber wood) • <i>Maesopsis eminii</i> (Musuzi)

WOOD PRODUCTS FROM DIFFERENT PLANTATION TIMBERS

(*Acacia mangium*, *Acacia auriculaeformis*, *Simarouba glauca*,
Eucalypts tereticornis and Coconut wood)



Timber Identification/Certification:

Various timbers which are available in different markets in India are not sold with the correct botanical/trade name. The sellers use the local name of a reputed timber and sell with that name. Hence, timber identification has always been a service in great demand from users in Industry, Government Departments, Forest Departments, Police, Vigilance, Lokayukta, CBI, Port Trust, Defense, Railways, Handicrafts and common man. This Institute has been rendering service to all these user agencies with the help of basic tools of wood anatomy and wood anatomical structure to identify timber to check adulteration. There is a collection of about 1300 samples of authentic wood species and 700 authentic permanent slides which are used as references in the process of identification. During last ten years (2000-2010), around 700 enquiries and 2000 wood samples were received, for knowing their identity and other properties including possible alternate uses, from different organizations.

C. Beneficiaries of thee Technology: Wood users and wood based industries

D. Economic Significance: Utilization of lesser known wood species for various applications with low investment.

Technology Transfer:

The technology can be transferred to any industry or individual. The institute is having a policy to transfer the technology to different stakeholders. For detailed terms and conditions and negotiation of cost of technology, the interested parties may contact Marketing Cell of IWST. Email Id: groupco_iwst@icfre.org Phone: 080-23340115. Office Hours- 9.00 A.M. to 5.30 P.M.
