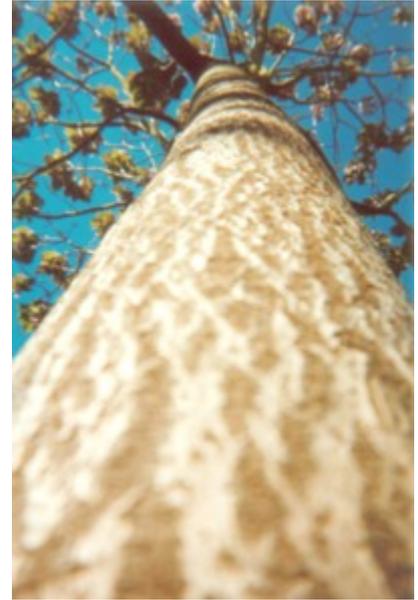


# KIRI, PAULOWNIA TIMBER

a concise report by James S. Lawrence of TGG ~ toadgully.com.au



Paulownia wood (known as Kiri in Japan) produces white to straw coloured timber which is light, soft and easy to work, but strong for its weight and does not easily warp or split. Kiri wood air dries well, thus eliminating or reducing the expense of kiln drying. Air dried Kiri wood density is generally in the range of 260 to 350kg/m<sup>3</sup>.

Harvesting of Paulownia for high quality timber, suitable for veneer, architraves, furniture, picture and window frames, generally takes place between 8 and 12 years. Even at 2 to 4 years of age, however, they could be used for poles or paper pulp if a viable market can be developed. A ten year old Paulownia should yield at least 0.4 m<sup>3</sup> of rough sawn timber. One exceptional 11 year old tree in China was measured at 3.69 m<sup>3</sup> timber volume in the log standing.

Paulownia timber industries are most well established in China, Japan, Taiwan and Sth Korea. Somewhat smaller trading in Paulownia timber takes place in the USA, with other countries such as Brazil, Paraguay and Australia also well on the way to developing an industry with strong interest in many other nations, particularly in SE Asia where the economic and environmental benefit is especially strong.



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There is potential for larger Paulownia growers to export to Japan which purchases over 90% of all the Kiri wood traded internationally. About 80% of Kiri wood used in Japan is made into plywood and parts for furniture, 12% is made into small boxes and much of the remainder is used for clogs and traditional musical instruments. In the period 2000 to 2002 Japan imported an average of 133,747 m<sup>3</sup> of Kiri wood each year. This can be broken into four categories. In the log (roughly or half squared for shipping) averaged 127 m<sup>3</sup> a year at a price ranging from A\$543/m<sup>3</sup> for fast grown Chinese trees to A\$891/m<sup>3</sup> for higher density wood from the USA. Rough sawn boards averaged 4,953 m<sup>3</sup> per year at A\$476 to A\$1,745/m<sup>3</sup> with an average price of A\$1,030/m<sup>3</sup> over the three years. Imports of processed Kiri timber, exceeding 6mm thickness, planed or sanded, averaged 125,119 m<sup>3</sup> each year at A\$413 to A\$3,347/m<sup>3</sup> depending on the product and quality, with an average value of around A\$840/m<sup>3</sup>. Non planed or sanded timber of 6mm thickness was imported at an average of 3,548 m<sup>3</sup> per annum with the average annual price ranging from A\$1,974/m<sup>3</sup> in 2001 to A\$2,308/m<sup>3</sup> in 2002. Some of these figures may be confusing to interpret, but basically the reason for the variation in price has to do with quality and source market differences - some nations receive a better price for their product than others. It is clear that the majority of the Kiri timber imported by Japan is now processed, much of it coming in the form of products such as panels from China.

Paulownia trees cultivated in temperate regions generally result in timber with the most decorative grain pattern due to the seasonal variation, with the cool weather experienced in early spring and late autumn producing more slowly grown dense timber, than that produced during summer. In addition, the more variable the climate the greater the number of dark lines in the wood grain, as a cold week during summer or a period of stress due to extreme heat, will result in a temporary slowing of growth with a band of more densely packed wood cells produced, followed by more open cells when rapid growth resumes. Tropical regions will result in softer, often



more evenly grained timber, but as it grows faster the trees can be harvested sooner and this type of timber is well suited to many applications, in particular mouldings for house interiors and picture frames. Slowly grown Kiri, resulting in close growth rings, achieves the top price in Japan where it is prized for use in traditional furniture, in particular chests of draws called Kiri Tansu. However, this premium market is relatively small and the emerging or potential markets targeting import replacement of rainforest timbers worldwide suggest even fast grown Paulownia timber should be economically viable. The higher rate of crop rotation in the warmer zones should compensate for any lower returns per m<sup>3</sup>. The climatic variation in Australia should allow for the production of the full range of Paulownia timber.

Some of the variation possible with Kiri wood.

This unique guitar was made by Yokinobu Chai (master instrument maker, Japan) from Kiri wood provided to him by Masaichi Tanaka, curator of Ryogoku Kiri Museum, Tokyo. The guitar has a deeper, warmer tone than those made from cedar or pine. The fretboard requires a very hard wood and was made from ebony, but all other parts of the guitar are made from Kiri - a truly excellent instrument.



A Kiri wazumi - a cylindrical stack of Paulownia wood blocks - air-drying in Aizu, Japan and a Japanese Tea Room made from Kiri

