

***Eucalyptus*: Having an Impact on the Global Solidwood Industry**

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A new report, “The Global Eucalyptus Wood Products Industry”, describes how this fast-growing hardwood is impacting international markets through substituting for more valuable hardwoods, especially tropical hardwood species. The following article highlights some of the findings of this report, looking at changes in forest management, manufacturing, and marketing of Eucalyptus for “higher-value utilization.”

Forest management

The *Eucalyptus* genus, which includes more than 500 species, is by far the most commonly planted fast-growing hardwood in the world. Only a relatively few species have been planted outside of Australia, but today the total area of *Eucalyptus* plantations is estimated at between 16 and 19 million hectares (40-47 million acres). While the overwhelming majority of this resource has been managed to produce either pulpwood or fuelwood, a number of companies, including some large multi-national companies, are changing their focus. Rather than targeting pulpwood as the objective, these companies are extending rotations, and pursuing aggressive management regimes including early thinnings and prunings, to produce higher value sawlogs with a maximum amount of clear wood. In this paradigm, the pulpwood produced – in the form of thinnings or conversion residues—is a by-product.

Most of the *Eucalyptus* roundwood produced in the world from plantations today is in South America. Despite wide-spread planting in parts of Asia and Australia, South America is still expected to produce 55% of the world’s *Eucalyptus* roundwood in 2010. Sawlogs make up only a small share of the *Eucalyptus* harvest today, approximately 6 million m³ of sawlogs in total. Of this, just over half are logs from native *Eucalyptus* forests in Australia, while the balance are from plantations worldwide. Brazil produces just over a third of all the plantation-grown *Eucalyptus* sawlogs in the world. By 2015, the volume of sawlogs from native forests in Australia will be substantially smaller, but the total sawlog harvest will be nearly double the current amount. Of the total production in 2015, an estimated 1.4 million m³ are expected to be pruned sawlogs.

Over the past four years, some major international companies have begun management of *Eucalyptus* for higher value utilization, including aggressive and early thinning and pruning regimes. The Weyerhaeuser/UBS joint venture subsidiary in Uruguay, Colonvade S.A., acquired the plantations of West Fraser in northern Uruguay. They have also planted additional areas of *E. grandis* in the same region, following somewhat the same management regime. Masisa in Argentina has shifted 25% of its *E. grandis* plantations to a sawlog regime, recognizing the value to be gained by managing for pulplogs/fiber as a by-product rather than the targeted end-product. Other major international companies, such as Aracruz, had already begun managing a small portion of their forest holdings to produce high quality sawlogs.

A new growth and yield model developed by INIA (Instituto Nacional de Investigación Agropecuaria) in Uruguay was used to evaluate the expected financial returns for a variety of *Eucalyptus* sawlog management regimes. The analysis revealed that “multiple purpose regimes” that sought to maximize both pulpwood production and sawlog production did not produce returns as high as those regimes targeting maximum clear wood production through early thin-to-waste and pruning. More importantly, the analysis indicated that, unlike most plantation investments today, growing *Eucalyptus* under aggressive clear-wood (sawlog) management

regimes are expected to achieve results that meet or exceed the requirements of the major international pension fund investors, with rates of return in excess of 20% (pre-tax) in Uruguay, and in the wider MERCOSUL region under appropriate site / climatic conditions.

Manufacturing

Plantation-grown *Eucalyptus* has long had the reputation of being a difficult species to work with. However, significant advances in log handling and sawing and drying technology have greatly improved sawmill and veneer mill recoveries in the last 4-5 years. Proper harvesting and log handling techniques have proven essential to improving conversion yields. Mechanized harvesting is recommended, with equipment that can control the logs during falling, to reduce end splitting and stress fractures. Logs should be delivered from the forest to the mill on a JIT (just-in-time) basis in the longest feasible length, which minimizes the proportion of material affected by end-splitting. Log bucking should take place just prior to conversion at the mill.

There have been several new sawmills built to process plantation-grown *Eucalyptus* over the past 4-5 years. These include Aracruz, CAF and several mini-mills in Central Parana State in Brazil. These are not the penultimate solution but the current log availability is less than optimal both in size and quality. There have been investments in additional kiln capacity and development of more down-stream re-manufactured processing. It is expected that new sawmills built in the next several years will benefit from the experience gained and will process higher quality sawlogs soon to become available. As with most hardwood lumber, drying *Eucalyptus* is considerably more expensive than with conifer lumber, due to the much longer times involved. Increased use of, and experimentation with, pre-dryer systems, solar kilns, and continuous driers will improve product quality and significantly reduce kiln degrade, which can be a 15 – 35% down-grade in regions some regions.

As with forest management changes, several large international companies have begun production of higher value *Eucalyptus* products in the past 4-5 years. These include Aracruz in Brazil (lumber and now flooring and sliced veneer)¹, ENCE in Spain and Uruguay (plywood and sawn products in Spain, lumber in Uruguay) and Boise in Brazil (rotary peeled veneer for LVL and plywood). Weyerhaeuser/UBS in Uruguay have announced major plans for capital investment in sawmilling, rotary peeling and composite panel investments later in the decade, and some initial investments are being studied for 2003/04. Mondi Timber in South Africa is also considering upgrades for one or more of its *Eucalyptus* sawmills in that region.

Marketing

One of the most notable changes in marketing of plantation-grown *Eucalyptus* products over the past several years has been the alliance established between Weyerhaeuser and Aracruz. Weyerhaeuser now has global export marketing responsibility for Aracruz's LyptusTM lumber outside of Brazil. (LytpusTM is the brand used by Aracruz for its *E. grandis*/*E. urograndis* lumber.) Partly because of the limited supplies available, Weyerhaeuser has chosen to position high grade (FAS) LyptusTM as a substitute for cherry and mahogany, with pricing in the US market discounted 30% and 15-20%, respectively, from those species.

Another major change in export marketing of *Eucalyptus* lumber has been the flow of lumber from producing countries (primarily, Brazil, Uruguay and South Africa) to Southeast Asian countries, for production of FSC certified garden furniture for Europe. This trade is exemplified

¹ The LytpusTM flooring and sliced veneer are produced under contract for Aracruz.

by the ScanCom operation, which purchases logs in Brazil, contract-saws at local mills and exports the partially air-dried lumber to Vietnamese furniture factories.

One of the most important factors aiding the introduction of plantation *Eucalyptus* products into selected international markets has been the demand by major retailing chains to source products from “sustainably managed” forests. A number of large plantation owners have had their *Eucalyptus* forests certified by the Forest Stewardship Council and downstream processors have quickly followed with chain-of-custody certification. While certification has probably not increased prices for plantation-grown *Eucalyptus* products, it has opened up new markets due to “demand pull” from DIY retailers for FSC certified products.

Products manufactured from plantation *Eucalyptus* are currently substituting for tropical hardwood species in a variety of markets and applications, and this substitution has been expanding. The garden furniture already mentioned is substituting for the other lower-cost substitutes for Teak, such as yellow balau, keruing, kwila (or merbau) and other non-certified tropical hardwoods from Southeast Asia and Africa. Some Brazilian companies are now producing *E. grandis* millwork products such as “vigas” (laminated window casings), for North European markets, where the wood compete with red meranti from Southeast Asia. A secondary product is dowelling, which replaces ramin in some Home Depot stores, as well as in European DIY retailers. Edge-glued panels are being produced for the European DIY market, as are tool handles and other products. In all cases, FSC certification has been the prerequisite for entering these markets.

In Brazil, interior furniture producers have been substituting *Eucalyptus* for mahogany, as the *E. grandis* lumber can be stained to closely resemble that wood. Another new market niche opened to plantation-grown *Eucalyptus* in the last several years has been the active substitution of *E. grandis* 5.2mm plywood in North American home centers for lauan plywood from SE Asia.

Another forest products giant, Boise, has pioneered yet another alternative use of *Eucalyptus*, in engineered wood products. After years of testing, Boise in Spring 2002 opened a new veneer plant in Rio Grande do Sul, Brazil. This is the largest *Eucalyptus* veneer plant in the world, and most of the production is exported to Boise’s LVL plant in the Southern USA. The *Eucalyptus* veneer is mixed with Southern yellow pine veneer, to increase the stiffness and strength of the final product. Other North American companies are also now testing *Eucalyptus* veneer, and some are expected to follow Boise’s lead.

Summary

Over the next 5-10 years, the plantation *Eucalyptus* business will remain an “emerging industry”. As in any new market segment, not all companies will be successful, due to incorrect decisions made on species mix, forest management, processing technology, marketing-mix strategies or some combination thereof. As the log supply for the next 5-10 years is already in place, success during this period will be determined by marketing and investment decisions for manufacturing facilities to process the relatively small volume of logs which will be available. It is inevitable that higher value utilization of *Eucalyptus* will continue to progress and prosper, emerging as an important component of the international wood business in the 21st century.

For more information on “The Global *Eucalyptus* Wood Products Industry”, contact Bob Flynn at Wood Resources International, email bobgflynn@aol.com, or phone 1-253-565-4846.