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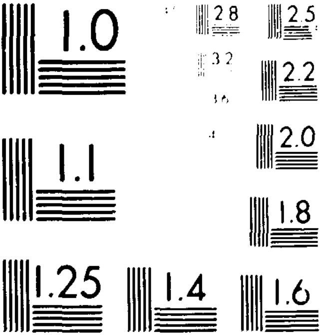
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Technical Course on Criteria for the Selection of Woodworking Machines

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GENERAL INFORMATION ON THE CHILEAN FOREST INDUSTRY *

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In Chile, there is a big difference between the traditional woodworking industry, which specially uses native hardwoods as raw material, and the industry exploiting pine-wood (Pinus raidata).

Lately, the latter has developed so rapidly - especially as concerns exports that it has transformed completely the whole timber activity and it has become extremely important for the country's economy.

The economic development strategy implanted in Chile since the end of 1973 embodies two fundamental elements:

- Widening of the economic ambient in the various markets, and
- Greater opening of the economy to foreign trade.

Both of these are new aspects in the recent economic history of this country, where the trands had formerly been precisely the reverse; growing State intervention and a strongly protectionist foreign trade policy.

Until 1973 the quantity of timber products exported was limited and the development of this product was restricted. With the removal of the difficulties and the problems related to the export of unprocessed wood, pine-sawnwood has been one of the most rapidly growing of Chile's non-traditional export sectors. Sawn pine exports rose from US$ 9.3 million in 1974 to nearly US$ 60 million in 1978.

Through expansion of its exports , the forestry sector has achieved its objectives, with growth rates higher than any other sector.

One of the most important elements of this growth, was Decree Law No. 701, promulgated in October 1974, seeking to develop afforestation, ensure reforestation of felled forest, rationalize filling and encourage optimum management of the resource.

After five years, figure from 1975 to 1979 give a clear picture of its effectiveness:

- 1,041,206 hectares classified as preferentially suitable for for forestry.
- 461,206 hectares with approved managements plans.
- 211,710 hectares with forestation plans approved.

The total area planted in Chile since 1974 is 418,719 hectares.

Most of the forestry expansion is based on Pinus Radiata, of which there are some 75 million standing cubic metres today. During the past year it provided:

- 92 per cent of the raw material for the forestry manufacturing industry;
- 96 per cent of the value of forestry exports (timber and manufactured products).

Incomplete figures for forestry exports during 1978 show a provisional total of US$ 236,0 million, 6.5 times greater than the amount exported in 1973.

The actual installed capacity of the Chilean Forest based industry is:

Product	Unit	Volume
Sawn Lumber:		
Pinus Radiata	M3	1.646.560
Other species	M3	453.120
Wood Pulp and Cellulose	Ton	683.000
Newsprint and Paper	Ton	310.000
Board and Veneer	M3	112.338
Prefabricated Houses	M2	3.600.300

During last year new exporters, big and small, brought the total number to 239 firms, which sent 75 different products to 46 different countries.

The countries buying remained practically unchanged, but there were changes in their percentage shares of Chile's exports. The most notable was the Republic of Korea, which increased its purchases from 5.8 per cent of the total to 11.3 per cent, mainly through imports of Radita Pine logs and unbleached pulp.

The export markets receiving Chilean sawn pine lumber are remarkably concentrated. The Latin American countries of Argentina and Venezuela together took 52 per cent of Chilean exports, while Middle Eastern countries absorbed an additional 19 per cent. In total, eight countries accounted for 91.5 per cent of exports. Adequate timber supplies and new growth in the pine forest regions are available to permit sustained increases in the volume of exports in the years to come.

The main countries importing Chilean forest products are in order of importance:

Country	Value of Imports (US$ million)
Argentina	49.5
Brazil	29.4
Venezuela	27.2
Republic of Korea	26.7
Federal Republic of Germany	18.5
Japan	11.6
France	10.8

We can wee that South America is still definitely the most important buyer, even though, European purchases have increased a lot during this period, especially by Germany, France, Belguim and Spain.

Examining the different products, pulp continues to be the undoubted leader with US$ 107.9 million, followed by sawnwood with US$ 51.1 million. In this latter item, Radiata Pine sawnwood exports attained US$ 47.6 million, against only US$ 3.5 million for all other species.

Bleached pulp surpassed all other types of pulp with almost US$ 40.9 million worth of exports.

These rapidly rising forestry exports are causing some concern to the Port Authority, especially since 93.0 per cent of the total is shipped through three ports of the Bio-Bio Region.

Estimates for shipment through this Region in 1980 are 2.5 million tons, and for 1985 2.7 million tons.

Looking at the future Chile must develop its market, because the country offers tremendous investment possibilities in forestry.

Chile's great potential is in the raw material, whose market price is very low, largely becuase of the low cost of the renewing the resource in Chile.

The problems confronting the Chilean lumber exporting industry may be considered as two-fold: On the one hand, adequate investment in mills and transport infrastructure must be made to enable producers to deliver existing supplies to the world markets. On the other hand, the world markets must be developed to accept readily an increasing volume from Chile.

The other major sector of Chile's wood-working industries is basically the furniture and joinery industry. Actually, in this sector, the artisanal production is larger than the real industrial production. An estimate made by PROCHILE indicates that the total production of furniture is about 48.000 sets per year. Nevertheless, only 9 per cent of the industries produce more than 2.000 sets per year, the rest does not attain 500 pieces per year, although only 70 per cent of the installed capacity is used, because of the low internal demand.

The annual consumption of these industries is approximately 9.000 m^3 hardwood, 220.000 m^2 of particleboard, 65.000 m^2 of plywood, and 220.000 m^2 veneer.

The hardwood used by the furniture industry is mainly Oak and Eucalyptus, species which are grown in Chile but are of foreign origin, like the Pinus Radiata pine, which is employed for cheaper furniture. The native hardwoods most used are Lingue (Persea lingue), Coigüe (Nothofagus dombeyi), Rauli (Nothofagus alpina) and Mañio (Podocarpus nubigena).

The saw mills operating in Chile are innumerable, but except for three large and modern ones, (Inforsa, Copihue and Laminadora), most of the others are small and obsolete and still powered by locomobiles.

The other local suppliers for Chile's furniture industry are three particlaboard plant, four plywood plants and two veneer plants. All of them are located in the south of Chile, where most of the forests are situated.

The most important impediments to the expansion of the furniture industry in Chile are the rudimentary use of antique machines, the intensive sue of hand labour for jointing, assembly, carvings, varnishings, and finishing, and, above all, the shortage of kiln driers, which influences considerably in the quality of the lumber employed. (A study made by TRAFOP indicates, that there is a deficit of 60 kiln driers in Chile).

The above mentioned deficiencies prevents Chile from reaching a production able to satisfy the huge volumes of external demands. Therefore the export of furniture is actually limited, but there should be no problem to redress this. Nowadays, there are no restrictions on imports of any kind of machinery, tools nor equipments, and, because of this a promising future may also be expected for these industries.