

Customer Bulletin

ISSUE 5: CLONAL TECHNOLOGY

"WE BELIEVE THAT OUR TIMBERLANDS TRANSCEND TIME..."

Alvaro Molinari



Clonal cuttings ensure trees will grow that optimize final wood quality.

Setting the global benchmark

Our Bulletins to date have covered a variety of topics that make the LUMIN business unique. We've looked at innovation and investment, the major role our business plays in social and environmental responsibility, and of course the fundamental issue of sustainability.

But what makes our business really special is our approach to forest management, including clonal technology – which is where the process starts and is the key factor driving our business and decisions.

With more than 20 years of operation, LUMIN is one of the leading timberland and forest products companies in Uruguay.

Our business includes 120,000 hectares of timberland in north eastern and north central Uruguay, as well as a seedling nursery, a cogeneration facility, and a plywood and veneer manufacturing facility.

We are proud that our timberlands were chosen as the model to develop the first timberland standards in Uruguay. In addition, we work with a clonal seedling nursery with the aim of developing timberlands that produce the highest quality raw materials.

Through sustainable timberland management, LUMIN provides products that meet a wide variety of human needs while preserving a healthy environment. Today LUMIN forests and products are certified by the PEFC (Programme for the Endorsement of Forest Certification).

LUMIN Forest Management

- Our timberlands are 100% comprised of pine and eucalyptus plantations, and our mill uses wood fibre from our own plantations and other plantations nearby. Our procurement policy precludes the purchase of wood products from at-risk timberland, as defined in our procurement guidelines. Our approach relies on two types of standards: one for environmental management systems, the other for specific practices associated with growing and harvesting trees. We carry out our operations in accordance with the internationally accepted standard for the environmental management system known as ISO 14001.
- One of the pillars of LUMIN's responsible forest management is the production of essential wood based products for humanity, conserving natural resources and biodiversity. To achieve these objectives, this principle of sustainability is put into practice from planning the establishment of our forests, designing the stands according to the potential of the site (both for productivity and the conservation of values, and the wealth of natural resources and biodiversity), respecting areas of high value for conservation and maintaining the connection between ecosystems.
- An important task within these principles is the monitoring of fauna and flora throughout the company's timberlands.
 This allows any changes to be observed and remedial actions implemented if required.
- Depending on its suitability, the non-forested area is also used for alternative non-forestry uses, such as grazing cattle, sheep and horses, beekeeping, agricultural crops, or else being preserved in its natural state as environmental conservation areas.

Issue date: 6 August 2020



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Tree Improvement and Clonal Technology

The LUMIN timberlands strategy is focussed on maximising the yield of high quality clear grade raw material per hectare, oriented towards making solid wood products with outstanding engineering and structural properties at a competitive cost. Our operations produce high quality, long lasting, beautiful and sustainable wood products. Our business is inspired by the desire to guarantee a trustworthy supply of products from responsible and sustainable sources to our clients at national, regional, and global levels.

LUMIN utilises clonal technology and this produces excellent results. A clone is basically a rooted cutting, that is a genetic blueprint of its parent.

The genetic improvement programme picks the best trees for the land, climate and a variety of end uses. LUMIN has a clonal nursery producing approximately 3 million clones per year for planting, aimed at producing top level trees and thus providing timber and materials of excellent quality.

This full cycle results in many significant benefits including: improved wood quality, faster growth, better density and colour, increased resistance to disease, uniformity – these improved properties lead to higher recovery and cost optimisation during processing.

Like all living organisms, trees compete with the rest of vegetation for water, light and nutrients. That is why they are thinned. In Uruguay the first commercial thinning is at 11 or 12 years.

When we complete the final harvest at 18 to 20 years, most of these trees go to the plywood and solid wood sectors and a smaller percentage to cellulose and biomass. In the years ahead, as we increase the volumes of clear timber, we will focus on increased thin peel veneer for plywood (see Bulletin 1), and other end uses and markets that need this.

At LUMIN, we plant, harvest and sell forest products but above all – we work safely and take care of people and the environment. We believe that our timberlands transcend time, grow vigorously and are renewable with our plantations now on successive rotations.

Our next Bulletin will take a look at the comprehensive quality control testing at our LUMIN plywood production facility.



Cuttings after a few weeks of growth in a climate controlled environment.



Small eucalyptus plants ready to be planted in the forest.



40 month old eucalyptus trees.



Mature eucalyptus plantation.

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