



October 2009



BC Coastal Forest Sector Hem-Fir Initiative

This quarterly bulletin provides up-to-date information on projects related to the five-year BC Coastal (Hemlock and Amabilis Fir) Initiative. It covers the areas of product development and market economics, resource characterization, manufacturing techniques, and opportunities in the evolving bio-energy and bio-refinery sectors. The overall objective of this initiative is to increase the value of the Coastal hem-fir resource and the products manufactured from it.

The BC Coastal Hem-Fir Initiative is working hard to keep industry informed of significant research findings with commercial applications. This bulletin is devoted to sharing some of the results our Steering Committee found particularly noteworthy. The Committee has representation from industry, CFPA and the federal and provincial governments. To encourage faster uptake by industry, information sessions about these findings will be held in the coming months with Ministry of Forests and Range staff and industry partners.

Alternative Approaches To Scaling Measurement

FPInnovations is investigating methods to reduce costs associated with scaling. Preliminary accuracy benchmarking of the on-board weigh scales and load averaging against traditional platform scaling was conducted. Results showed that on-board scales were accurate to within +/- 1-3% and did not require recalibration over the three week trial, while standard error tare averaging was found to be +/- 5%, or too high for practical purposes. The Steering Committee sees value in pursuing scenarios where on-board weigh scales could be used to reduce travel and wait times for platform scales, ultimately improving delivered log cost.



On-board weigh scale used in the FPInnovations trial.

For more information, please contact Jack MacDonald at jack.macdonald@fpinnovations.ca

Direct To Mill Delivery By Truck

Common knowledge on the BC Coast suggests that transporting logs by water is the cheapest form of delivery. However, the cost of water transport does not factor in the degradation of log value further down the value chain as a result of biological damage, salt accumulation or loss through sinkage. The following costs were suggested to FPInnovations in interviews with a variety of sources: between 0.25 and 9% log volume loss occurs between sortyard and sawmill; teredo and ambrosia damage costs up to 10% of value at the sawmill; and, corrosion from salt-laden hog fuel and chips can cost millions of dollars per year at a coastal pulp mill. Using this information and best/worst assumptions, FPInnovations found anywhere between a \$12/m³ potential benefit to a \$6/m³ added cost related to keeping logs out of the water. Due to the magnitude of this potential opportunity, the Steering Committee has encouraged FPInnovations to investigate the true "value chain" cost of water transport by conducting trials.

For more information, please contact Jack MacDonald at jack.macdonald@fpinnovations.ca

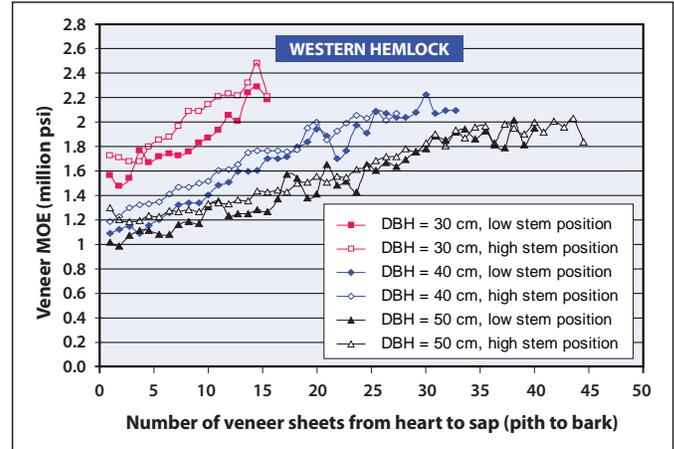
FPInnovations would like to thank its industry members, Natural Resources Canada - CFS and the Province of British Columbia MoF&R for their support in this joint federal-provincial-BC industry initiative. The program was developed as a result of the Province's "Competitiveness Report" and is a component of the "Coastal Forest Action Plan".



Value in Sorting Second-Growth Hemlock and Amabilis Fir Veneer

Preliminary results from the BC Coastal Hem-Fir Initiative show how differences in rate-of-growth influence product potential and value. This chart shows how stiffness (MOE) of veneer sheets from western hemlock trees, 67.5 years in average age, varies by growth-rate (DBH), from pith-to-bark, and from low vs. high stem position (1st vs. 2nd 5 m log). In general MOE is highest in slower growing trees, higher near the bark (mature wood) than near the pith (juvenile wood) and higher in the 2nd log than in the 1st log. The chart illustrates the potential to sort short-rotation logs or veneer for high-value engineered wood products that require high MOE, and it illustrates that informed stand management decisions are required to ensure important wood quality attributes are retained in future forests. Analysis is continuing on other hem-fir wood attributes including strength and stiffness of small clears, incidence of spiral grain and compression wood, CT imaging of internal defects and pulping properties.

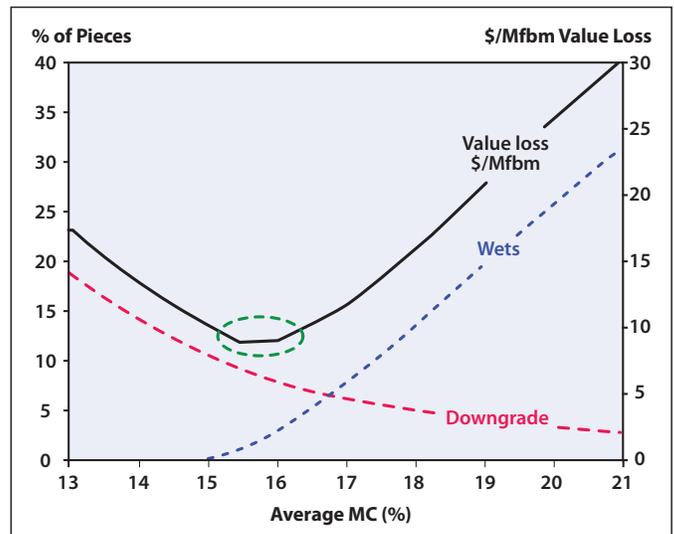
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Moisture Separation Before Drying

In 2008, the *Barriers and Opportunities in Sawmill Manufacturing Report* identified an opportunity to improve value gain and reduce drying time by separating pieces by moisture content before drying. Optimally drying hemlock requires the determination of minimal value loss or the intersection between over-dried (potential downgrade) and under-dried (wets), which is challenging. FPInnovations ran a trial over the summer, in which 4x4 **baby squares** destined for Japan were separated into two moisture sorts and dried using the same schedule to achieve the same final moisture content. The result was improved value recovery estimated to be \$8/mfbm and an overall reduction in drying time by approximately 2%. Further manipulation of the drying schedule indicated that drying time could be reduced by a total of 7% on the drier sort while still meeting the percentage of allowable wets. This positive result has prompted the mill where the trial was held to implement a moisture sorting strategy as part of its production. FPInnovations believes moisture separation has the potential to add value and reduce drying times for other hem-fir, kiln-dried products as well.

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For more information about this program, please contact spokesperson John Talbot at (250) 308-9955 or john.talbot@fpinnovations.ca

FPInnovations brings together Feric, Forintek, Paprican and the Canadian Wood Fibre Centre of Natural Resources Canada, to create the world's largest private, not-for-profit forest research institute. With over 600 employees spread across Canada, FPInnovations unites the individual strengths of each of these internationally recognized forest research and development institutes into a single greater force.