



EvalUTree™

Analyzing your fibre resource

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Have you ever wondered how to scientifically assess your wood and fibre quality, allowing you to make operational and business decisions that would maximize the potential of your fibre resource?

Look no further than the Pulp and Paper Research Institute of Canada (Paprican) and their new EvalUTree™ research resource.

Established by a Canadian Foundation for Innovation grant, the BC Knowledge Development Fund, and Paprican's members, EvalUTree™ is based in Paprican's Vancouver Laboratory with x-ray densitometers also located with partners at the University of Northern British Columbia and the University of Victoria. EvalUTree™ offers the forest products industry state-of-the-art technologies that, when combined with the knowledge of Paprican researchers, provide comprehensive wood- and fibre-analysis solutions.

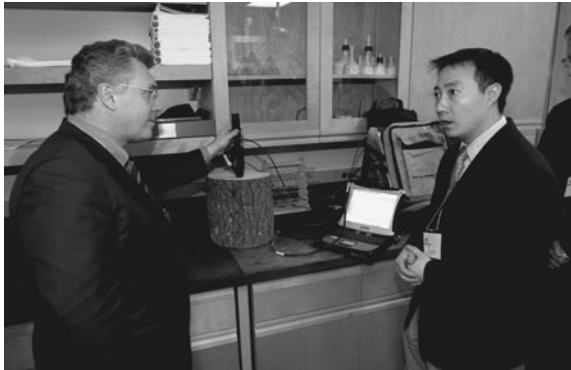
strument that rapidly, accurately, and automatically determines length, shape, shive content, vessel elements, and average coarseness of fibres.

An example of how this resource can benefit the forest industry is the recent work conducted at Paprican to evaluate the properties of lodgepole pine fibre from trees attacked by the mountain pine beetle (MPB). An increased harvest of lodgepole pine in BC has increased the proportion of lodgepole pine in the spruce, pine, and fir (SPF) chip furnish at many pulp mills. With the use of SilviScan, EvalUTree™ was able to measure industrially important wood properties such as density, microfibril angle, and cell dimensions to determine how the pulp properties might be affected. Understanding the properties of the raw material will help a pulp mill determine the impact fibre quality can have on end-product properties. In this case, changes in SPF pulp strength, due to an increase in pine content, were found to be minor.

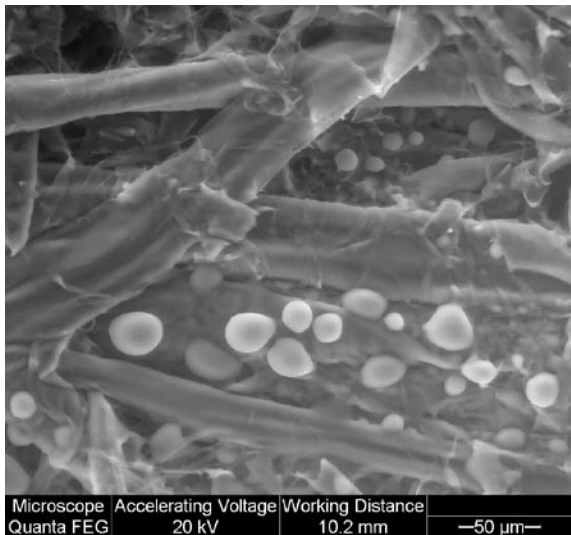
Another EvalUTree™ application has been quantifying the major issue of blue stain in MPB-attacked lodgepole pine using Spectroscopy. In mechanical pulp production, an increased volume of blue-stained chips increases pulp brightening costs. In solid wood, blue stain can degrade product appearance. One portable spectroscopy tool uses a probe that is inserted into a log through a 12-mm hole created by an increment corer. This prototype system collects data that calculates the intensity of the blue stain. EvalUTree™ has developed calibration models for MPB-killed lodgepole pine that can determine the amount of blue stain and is continuing to improve upon this system. The funding for these projects was provided by the Canadian Forest Service through the Mountain Pine Beetle Initiative.

On January 22, 2007 Paprican held the official opening of EvalUTree™ at their Vancouver research facility. Many forest industry representatives, the research community, and government officials were on hand for the opening ceremonies, which included a guided tour. Moving forward, EvalUTree™ services will play a key role in fibre quality and fibre value-chain initiatives aimed at improving the competitiveness of Canada's forest sector. 🌲

For more information on EvalUTree, contact Andrew Goodison at agoodison@paprican.ca or visit <http://www.evalutree.com>



Paprican photo



Paprican photo

Microscope	Accelerating Voltage	Working Distance	
Quanta FEG	20 kV	10.2 mm	—50 µm—

Top photo: Paprican researcher, Thanh Trung, demonstrating an EvalUTree process at the official opening to the Honourable Murray Coell, Minister of Advanced Education.

Bottom photo: Water droplets on the surface of paper seen through the environmental scanning electron microscope.

The EvalUTree™ infrastructure includes world-leading capabilities in the following:

- SilviScan: A rapid and cost-effective assessment of key wood quality parameters from pith to bark, via increment core or disc samples.
- Confocal Microscopy: A non-destructive optical analysis of fibre at a microscopic level.
- Spectroscopy: A tool for determining physical and chemical properties of a sample.
- Light and Electron Scanning Microscopy: An optical analysis of fibre at a microscopic level using electron and x-ray technology.
- Fibre Quality Analysis: This uses a commercial in-