After the beetle: How long is the wood good?

FORESTRY INNOVATION INVESTMENT LTD.

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Mountain Pine Beetle Update

Shelf life is the length of time before moisture content, wood density and fibre quality deteriorate to a point at which primary or secondary processing is uneconomic.

The longer beetle-killed trees remain standing in the forest the less value can be recovered from them in the sawmill. The forest industry needs to know how long it has to harvest and process beetle-killed trees before they're not worth the effort.

The Council of Forest Industries (COFI) in conjunction with Forestry Innovation Investment Ltd., enlisted the services of J.S. Thrower & Associates to provide preliminary data on the shelf life of beetle-killed trees.

In September 2005, lodgepole pine trees killed over the last six or seven years were removed from beetle-attacked and killed stands in the Burns Lake, Williams Lake and Kamloops areas. The 109 trees represented a fairly small sample, and the researchers urge caution in interpreting trends in the data.

The trees were felled and bucked into 397 five-meter logs, with stem analysis discs taken from the top, bottom and middle of each log. Checks and bluestain were mapped and moisture content was measured on 1,143 discs.

Researchers took site, tree, standing timber, fallen log and disc measurements. From those numbers, researchers compiled data on moisture content, quadrants with checks and bluestain with the following results and emerging trends.

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CHECKING OR SPLITTING

Checking, or splitting, is a natural shrinking process that occurs as the log releases moisture. As the log (or beetle-killed tree) dries, the circumference of the growth rings shrinks twice as much as the diameter. As a result, stresses build up and the log checks, or splits. For mills, checked logs mean less lumber recovery.

The project showed that checks were evident in 82 (75%) of the 109 trees and 252 (63%) of 397 logs. In addition, the proportion of logs with checks increased with years since attack, as Diameter at Breast Height (DBH) class increased, as moisture content decreased and as remaining tree foliage decreased. This gives some idea of the important parameters needed to predict the amount of checking.

FOR THE FULL REPORT GO TO **WWW.BCFII.CA/MPB/** AND DOWNLOAD THE REPORT "MPB 2006-09: ECONOMIC SHELF LIFE AND VALUATION OF BEETLE-KILLED TREES FROM B.C.'S MOUNTAIN PINE BEETLE EPIDEMIC".

For those trees containing checks, most were in the 50% depth class (that is, the average depth of checks in a log was 50% of the radius of the disc where the check was measured), with larger trees having deeper checks. It was found that the average depth of checks increased over time, from 5 cm in year one to 7 cm in year six.

MOISTURE CONTENT

Moisture content decreased as the number of years since attack increased, but not significantly, from 25% in year one to 20% in year six.

The proportion of bluestain increased with years since attack, and overall about 30% of log volume was bluestained. Trends showed a lower proportion of bluestain in the longer attacked trees. Researchers expect this is the result of more recently killed trees having a higher level of attack and thus a higher fungus content.

COFI says this study is a stepping-stone to a better understanding of the shelf life issue. A larger sample size and further analysis will be needed to answer many of the questions. This project is currently being carried out under the MPBI of the Canadian Forest Service.

Forestry Innovation Investment Ltd. is a British Columbia government corporation investing in initiatives to help market BC forest products, and promote our sustainable forest practices to the world. FII's Mountain Pine Beetle Program supports government's Mountain Pine Beetle Action Plan and its objective to maximize the economic value of mountain pine beetle wood. FII does this through marketing activities and research into new products and manufacturing processes for mountain pine beetle wood.

For more information, contact
Dan Alexander, Director, MPB Program,
(604) 685 7507

Forestry Innovation Investment Ltd.