



Optimizing Western Hemlock and Amabilis Fir

The research team used X-ray computed tomography (CT) imaging to characterize internal and external log attributes in western hemlock and amabilis fir. With the help of these images, they used industry software to virtually transform tree stems into lumber according to typical processing practices in British Columbia. This allowed the team to determine potential economic benefits and identify how forest management practices, such as density management, may affect the wood industry.

PROJECT TITLE

Optimizing western hemlock and amabilis fir resource transformation based on existing X-ray computed tomography images

ORGANIZATION

University of British Columbia

CONTACT

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START DATE

4 April 2018

END DATE

31 March 2020

COLLABORATORS

FPInnovations

The primary goal of this project is to quantify the benefits of using fibre attributes to optimize resource transformation. To achieve this, the team partnered with FPInnovations, who shared their industry software with the University of British Columbia.

During the project, the team developed a new, functional tool; collected key data; and modelled the value chain before analyzing and sharing their findings. The results have proved that they could characterize the traits of western hemlock and amabilis fir from just X-ray and CT scans. This allowed them to estimate important internal attributes that sawmill manufactures can use to adjust their production. The project shows how complex the interaction is between a tree's growth history and its lumber quality and how important the relationship should be between forest managers and lumber producers.

Canadian sawmills that adopt this technology can position themselves as leaders in advance manufacturing techniques and suppliers of high-quality wood products. These increasingly flexible manufacturing processes help sawmills diversify their product range, ensuring the preservation of well-paying jobs. Ultimately, linking forest management with wood transformation tactics ensures a steady timber supply and a diversified bioeconomy.

Cat. No. Fo4-152/2021E-PDF (Online)
ISBN 978-0-660-39037-6

Aussi disponible en français sous le titre: Optimisation de la transformation des ressources de pruche de l'Ouest et de sapin amabilis basée sur des images numériques existantes de tomographie par rayon X

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