

Hardwood University Workshop #5

Sawmill efficiency and quality control January 27, 2022

Objective:

Discuss current and state-of-the-art sawmilling technology, including tree and log scanning, lumber overrun and recovery, statistical quality control, lean manufacturing principles and other modern management techniques.

Agenda:

- 9:30 – 9:45 Registration and Hardwood University Program Introduction (Rado Gazo)
- 9:45 – 10:00 **Overview of hardwood sawmilling process and sawyer decisions** (Rado Gazo)
- 10:00 – 11:00 **Sawmill Yield Studies: Connecting Quality and Processing to Dollars** (Brian Bond)
Yield studies can help you to better define you log prices, how you process your logs through the mill and how much mill improvements can impact your bottom line. Why, What, and How to conduct a yield study will be discussed, including software tools to analyze the data.
- 11:00 – 12:00 **LORCAT Sawmill Analysis Tool** (Ed Thomas)
The LOG ReCOVERY Analysis Tool is a free MS Excel spreadsheet tool that enables mill personnel, mobile bandsaw operators and researchers to examine the impact and relationships among various factors that influence hardwood mill recovery
- 12:00 – 12:30 Lunch
- 12:30 – 1:15 **Statistical Process Control** (Henry Quesada)
SPC is an important tool to make sure products and processes are delivered with the right quality. Statistical concepts behind SPC will be explained with examples from lumber manufacturing will be presented.
- 1:15 – 2:30 **Continuous Improvement** (Henry Quesada)
Main philosophies and methodologies that are available to increase efficiencies and effectiveness of manufacturing processes in wood products industries
- 2:30 – 3:15 **Tree and Log Scanning and Sawing Optimization** (Rado Gazo)
Until now, operators involved in log inspection, purchasing, merchandising and processing made their decisions mostly based on external log or tree characteristics and their experience. This presentation will discuss state-of-the-art CT scanning of internal characteristics of logs.
- 3:15 Conclusion

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Speakers

Rado Gazo is a professor of wood processing and industrial engineering at Purdue University. His recent work focuses on evaluating tree, log and lumber quality using CT, laser and image scanning research and development. Over past 30 years, Rado has worked with over 150 companies, often in consulting capacity.



Brian H. Bond serves as a professor and extension specialist in the area of wood products at Virginia Tech, Department of Sustainable Biomaterials. His focus is on improving the sustainable use and manufacturing of wood products. He has twenty-four years of experience in wood drying, sawmill performance, and the performance of wood products (flooring, furniture, etc.).



Ed Thomas is a research computer scientist for the USDA Forest Service. Ed develops and refines sawmill simulation programs to examine questions related to log quality and processing. His other interests involve secondary processing and the development and use of simulation programs to examine related research questions. The overall goal of this research is to determine the most efficient processing method and avoid decisions that result in recovery loss and or lower quality lumber.



Henry Quesada is a professor and extension specialist in the area of wood products at Virginia Tech, Department of Sustainable Biomaterials. He works in the area of Industrial Engineering with specific interests in continuous improvement, supply chain management, international marketing, and organizational innovation.

