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# Investigations into the Chemical and Structural Factors Contributing to Large Differences in the Biomass Recalcitrance of Douglas Fir Trees.

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A method for screening the recalcitrance of softwood biomass toward deconstruction of cellulose was devised and applied to a group of over five hundred plantation-grown Doulgas fir trees. The trees selected exhibited considerable differences in biomass recalcitrance despite their similar origin; some samples tested exhibited fermentable carbohydrate yields of over three times difference. In this presentation, we will discuss our investigations into the chemical and structural variations in several of these trees selected to represent a cross-section of the variation in recalcitrance of Douglas fir. By examining these trees showing widely differing levels of biomass recalcitrance but from similar origin, this study aims to determine the subtle differences that contribute to the variations in biomass recalcitrance of softwood biomass.

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