

# Supplementary dataset S2: Traits measured in our analyses.

Type of analysis →		Parsons et al. (2015)																		
Complete trait name (and unit) →	Proportion of carbohydrates in the total detected pyrolyzed biomass (%)	Proportion of G-lignin in the total detected pyrolyzed biomass (%)	Proportion of S-lignin in the total detected pyrolyzed biomass (%)	Proportion of H-lignin in the total detected pyrolyzed biomass (%)	Proportion of non-associated phenolic compounds in the total detected pyrolyzed biomass (%)	Proportion of unidentified compounds in the total detected pyrolyzed biomass (%)	Proportion of unknown compounds in the total detected pyrolyzed biomass (%)	Ratio of 5-lignin to G-lignin in the total detected pyrolyzed biomass (%)	Ratio of carbohydrates to lignin in the total detected pyrolyzed biomass (%)	Proportion of lignin in the total detected pyrolyzed biomass (%)										
Short trait name →	C	G	S	H	P	U	D	SG	CC	L										
Type of analysis →		Direct measurements of growth trait																		
Complete trait name (and unit) →	Stem height (cm)	Average internode length (cm)	Diameter at the base of the stem (mm)	Anisole content (wt@10%)	Phenolase content (wt@10%)	Fucose content (wt@10%)	Xylose content (wt@10%)	Rhamnose content (wt@10%)	4-C-methylglucosone acid content (wt@10%)	Galactose content (wt@10%)	Galacturonic acid content (wt@10%)	Extractable glucose content (wt@10%)	Glucuronic acid content (wt@10%)							
Short trait name →	Height	Internode length	Diameter	Anisole	Phenol	Fucose	Xylose	Rhamnose	4-C-Methylglucosone	Galactose	Galacturonic	Glucose	Glucuronic							
Type of analysis →		Sugar yields after enzymatic hydrolysis without pre-treatment																		
Complete trait name (and unit) →	Glucose production rate (g/L <sub>h</sub> ) measured every 2 hours without pre-treatment	Anisole released (g/g after 72h) without pre-treatment	Galactose released (g/g after 72h) without pre-treatment	Glucose released (g/g after 72h) without pre-treatment	Xylose released (g/g after 72h) without pre-treatment	Mannose released (g/g after 72h) without pre-treatment	Arabinose released (g/g) by hydrolysis (72h) and in the pre-treatment liquid	Galactose released (g/g) by hydrolysis (72h) and in the pre-treatment liquid	Glucose released (g/g) by hydrolysis (72h) and in the pre-treatment liquid	Xylose released (g/g) by hydrolysis (72h) and in the pre-treatment liquid	Mannose released (g/g) by hydrolysis (72h) and in the pre-treatment liquid									
Short trait name →	GPwp	ARAwp	GAwp	GLwp	XYwp	MAwp	ARAwpL	GAwpL	GLwpL	XYwpL	MAwpL									
Type of analysis →		Sugar yield in enzymatic hydrolysis after pre-treatment																		
Complete trait name (and unit) →	Glucose production rate (g/L <sub>h</sub> ) measured every 2 hours after pre-treatment	Anisole released (g/g after 72h) after pre-treatment	Galactose released (g/g after 72h) after pre-treatment	Glucose released (g/g after 72h) after pre-treatment	Xylose released (g/g after 72h) after pre-treatment	Mannose released (g/g after 72h) after pre-treatment	Arabinose (g/g) in the pre-treatment liquid	Galactose (g/g) in the pre-treatment liquid	Glucose (g/g) in the pre-treatment liquid	Xylose (g/g) in the pre-treatment liquid	Mannose (g/g) in the pre-treatment liquid									
Short trait name →	GPwp	ARAwp	GAwp	GLwp	XYwp	MAwp	ARAwp	GAwp	GLwp	XYwp	MAwp									
Type of analysis →		Siltcon measurement																		
Complete trait name (and unit) →	Average number of vessels per mm <sup>2</sup> of scanned wood cross-section	Average cross-sectional area of vessel cells (µm <sup>2</sup> )	Average cross-sectional perimeter of vessel cells (µm)	Average cross-sectional major axis length of vessels (µm), assuming an elliptical	Average cross-sectional minor axis length of vessels (µm), assuming an elliptical	Fraction of scanned cross-sectional wood area occupied by fibers	Fraction of scanned cross-sectional wood area occupied by vessels	Average number of fibers per vessel in the scanned wood cross-section	Average cross-sectional longest radial width of fibers (µm)	Average cross-sectional longest tangential width of fibers (µm)	Average number of fibers per mm <sup>2</sup> of scanned wood cross-section	Average cross-sectional area of fibers (µm <sup>2</sup> )	Average cross-sectional perimeter of fibers (µm)	Average wood density without vessels (kg/m <sup>3</sup> )	Average wood density (kg/m <sup>3</sup> )	Fiber weight per length (µg/m) [specification for the weight of fibers used in]	Average cellulose microfibril angle (degrees)	Wood stiffness: estimated acoustic modulus of elasticity (GPa)	Average fiber cell wall thickness (µm)	Average fiber surface area divided by its mass (m <sup>2</sup> /kg)
Short trait name →	Vesswp	Vesarea	Vesperm	Vesmajax	Vesminax	Fiberw	Vesfrac	FibFvessel	FibRadLen	FibTanLen	FibNum	FibArea	FibPerm	Denswood	Dens	FiberWt	MFCA	Stiff	WallThick	SpecificSurf