

Table 1 Summary of Genome-wide Association Studies (GWAS) of wood property traits in main timber species

Phenotype	Species	Sample size	No. of markers	Method	Reference
Growth and wood properties	<i>Eucalyptus globulus</i>	303	7 680 [Diversity Array Technology markers (DArT)]	General linear model (GLM) and unified mixed model (UMM)	Cappa et al., 2013
Wood density, stiffness, microfibril angle, and ring width	<i>Picea glauca</i>	1694	7 434 (SNPs)	Mixed linear model (MLM)	Lamara et al., 2016
16 wood chemistry/ultrastructure traits	<i>Populus trichocarpa</i>	334	29 233 (SNPs)	GLM	Porth et al., 2013
Lignin percentage, Lignin S:G ratio, 5-carbon sugars, and 6-carbon sugars	<i>Populus deltoides</i>	391	334 679 (consensus SNPs), 185 526 (Common SNPs), 76 804 (functional SNPs)	Single-variant and multiple-variant associations on GLM	Fahrenkrog et al., 2017
Basic wood density (BWD), bleached pulp, pulp yield (SPY), and pulp bleaching content	<i>Eucalyptus grandis</i> × <i>Eucalyptus urophylla</i>	768	24 806 (SNPs)	GWAS and regional heritability mapping	Resende et al., 2017
17 wood-quality traits	Norway spruce	517	178 101 (SNPs)	Multilocus LASSO Penalized regression	Baison et al., 2018
Seven wood properties	<i>Populus tomentosa</i>	435	5 482 (InDels)	MLM and Kempthorne model	Gong et al., 2017

Note: Diversity Array Technology (DArT) markers (Source: Du et al., 2018)