

Table S1. Numbers of clone and individuals surveyed and phenotyping ages used to estimate Clonal values for each trait.

Trait	Methods	G1 (first generation)						G2 (second generation)						total	
		Clone	N	N/ clone	site/ clone	Age	Statistics	Clone	N	N/ clone	site/ clone	Age	Statistics	Clone	N
Tree	Field survey	44	11,860	269.5	4.4	10	BLUP ^a	95	3058	32.2	1.0	10	BLUP ^a	139	14,918
height	Published score	3	-	-	-	10	Z-score ^b							3	-
	total	47				10		95				10		142	
Wood	Lumber survey														
stiffness	Individual	27	202	7.5	-	30~39	BLUP ^a	46	191	4.2	-	30~39	BLUP ^a	73	393
	juvenile lumber		(397)	(14.7)					(382)	(8.3)					(779)
	mature lumber		(252)	(9.3)					(372)	(8.1)					(624)
	Standing tree														
	Fakopp							53	416	7.8	-	22~29	Mean	53	416
	TreeSonic	17	97	5.7	-	30~39	Mean	2	13	6.5	-	30~39	Mean	19	110
	total	44	299					101	620					145	919
Male	Field survey							101	4640	45.9	-	22~29	BLUP ^a	101	4640
flower	Published score	47	-	-	-	15~	Z-score*							47	-
quantity	total	47						101						148	

BLUP^a (Best Linear Unbiased Prediction) is the same as Clonal value.

The Z-score^b is the number of standard deviations by which a raw score deviates from the population mean and was calculated from the means and standard deviations of published scores.

For the tree height trait, the published scores for the three G1 clones that could not be field surveyed were converted into Clonal values using a BLUP-derived equation (see details in Supplementary Materials S1).

For wood stiffness, the mean stress wave times of the 72 clones (Fakopp: 53 clones, TreeSonic: 19 clones) surveyed as standing trees were similarly converted into Clonal values using a BLUP-derived equation (see details in Supplementary Materials S2).

For male flower quantity, the published scores for the 47 G1 clones that could not be field surveyed were converted into Clonal values using a BLUP-derived equation (see details in Supplementary Materials S3).

The numbers in parentheses in the Wood stiffness are the number of lumbers obtained by cutting each log.

The numbers of individuals surveyed for each clone are shown in the supplementary data (Height: Table S2, Wood stiffness: Table S3, Male flower quantity: Table S4).