

Table S2. Numbers of individuals and mean tree heights (measured at 10 years of age in the 6 clonal test sites) that were used to calculate Clonal values for tree height.

Generation	Clone	Site	Site_110		Site_111		Site_112		Site_113		Site_115		Site_116		Total		Published score	statistics	Clonal value
		N	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean			
G1	P3122_sag1	4	42	6.8			61	3.3			28	4.3	90	3.2	221	4.1	3	BLUP	-0.76
G1	P3123_sag2	3	31	5.0			41	2.8	51	3.6					123	3.7	2	BLUP	-1.19
G1	P3124_sag3	4	23	7.3					74	4.8	33	6.7	121	4.2	251	5.0	4	BLUP	0.30
G1	P3126_fuj1	3	45	6.6			43	4.5	98	4.9					186	5.2	4	BLUP	0.61
G1	P3127_fuj2	4	79	5.0			47	3.9	96	4.0			95	3.2	317	4.0	3	BLUP	-0.92
G1	P3129_fuj5	5	84	6.8			124	3.7	96	4.9	27	6.0	26	5.4	357	5.1	3	BLUP	0.12
G1	P3130_fuj6	3	40	4.7	63	3.2	37	3.2							140	3.6	2	BLUP	-1.10
G1	P3132_fuj8	1			46	2.3									46	2.3	4	BLUP	-1.94
G1	P3133_fuj9	1			94	3.4									94	3.4	3	BLUP	-1.18
G1	P3134_fuj10	6	86	5.9	84	3.4	50	3.4	87	4.2	31	5.1	35	4.9	373	4.5	3	BLUP	-0.21
G1	P3135_fuj11	4	79	5.3	76	3.7	66	3.1	38	3.9					259	4.1	2	BLUP	-0.74
G1	P3136_fuj12	6	49	5.6	63	3.9	32	3.8	68	4.3	26	5.8	50	3.9	288	4.4	4	BLUP	-0.11
G1	P3138_fuj14	6	114	5.4	110	3.8	157	3.2	91	3.4	24	4.8	239	2.8	735	3.6	2	BLUP	-1.03
G1	P3139_fuj15	2	41	5.4	61	2.4									102	3.6	2	BLUP	-0.48
G1	P3140_fuj16	4	63	5.8	73	2.4	65	3.0			29	4.5			230	3.7	2	BLUP	-0.77
G1	P3141_fuj17	5	181	5.5	140	2.7	205	3.3	81	5.7	25	5.1			632	4.2	3	BLUP	-0.78
G1	P3143_fuj19	5	48	5.0	72	2.7	37	3.2	90	4.4	16	5.1			263	3.9	3	BLUP	-0.97
G1	P3144_fuj20	6	57	5.4	62	2.4	56	2.2	39	3.9	23	4.5	47	2.8	284	3.4	2	BLUP	-1.49
G1	P3145_fuj21	4	57	4.7	48	3.6	40	3.3			28	4.3			173	4.0	2	BLUP	-0.90
G1	P3146_fuj22	4	31	5.1	64	2.5	65	3.7					23	2.5	183	3.4	3	BLUP	-0.91
G1	P3147_fuj24	5	86	5.1	83	3.8	68	3.9	81	3.9			48	2.9	366	4.0	3	BLUP	-0.76
G1	P3148_fuj25	6	73	5.9	86	4.8	131	3.8	98	3.8	23	5.6	39	4.5	450	4.5	3	BLUP	-0.33
G1	P3149_fuj26	4	50	5.8	55	3.3	23	2.8			29	5.6			157	4.4	3	BLUP	-0.55
G1	P3150_fuj27	3	63	5.1	58	2.6	94	3.0							215	3.5	2	BLUP	-1.26
G1	P3151_fuj28	5	34	6.3	63	3.9	41	3.5	91	4.6	29	5.0			258	4.5	3	BLUP	-0.42
G1	P3152_fuj29	4	44	5.5			106	3.8	91	5.0	15	4.6			256	4.6	3	BLUP	-0.18
G1	P3153_ima1	5	51	7.4	60	4.2			63	5.4	26	7.2	60	4.4	260	5.5	5	BLUP	0.37
G1	P3154_ima2	5	52	5.4	65	3.7			104	4.3	33	5.5	87	3.2	341	4.2	3	BLUP	-0.44
G1	P3155_kan1	4	45	5.9			61	3.5			33	5.6	15	3.3	154	4.6	3	BLUP	-0.38
G1	P3156_kan2	4	44	7.3			78	3.8			28	5.2	105	3.5	255	4.4	3	BLUP	-0.31
G1	P3157_kan3	3	23	5.3			71	2.9			30	6.5			124	4.2	3	BLUP	-0.48
G1	P3158_kan4	2					19	3.7			28	4.3			47	4.1	2	BLUP	-0.12
G1	P3162_kar1	5	65	5.6	78	3.6			96	5.3	30	6.0	72	3.6	341	4.7	3	BLUP	-0.33
G1	P3163_kar2	4	52	4.9			68	3.1	71	4.2			52	3.6	243	3.9	3	BLUP	-0.68
G1	P3164_kar3	5	30	3.8	62	2.5	34	2.3	44	3.4			73	3.4	243	3.1	1	BLUP	-1.72
G1	P3165_kar4	6	45	5.4	72	4.2	69	3.7	80	5.0	26	4.5	33	4.2	325	4.5	3	BLUP	-0.74
G1	P3166_kar5	5	34	3.9	51	3.2	67	2.6			27	3.6	117	2.6	296	2.9	1	BLUP	-1.48
G1	P3167_kar6	6	85	5.0	71	2.5	73	2.4	104	3.8	31	4.5	124	2.5	488	3.3	1	BLUP	-1.42
G1	P3168_kar7	5	70	5.5	54	3.2	49	3.3	92	4.6	29	4.7			294	4.4	3	BLUP	-1.09
G1	P3169_kar8	6	50	4.3	78	2.7	41	3.5	90	3.3	26	3.9	90	3.0	375	3.3	2	BLUP	-1.28
G1	P3170_kar10	3	41	5.9	72	2.5	60	2.7							173	3.4	2	BLUP	-1.37
G1	P3171_kar11	2	23	4.8			54	2.9							77	3.5	2	BLUP	-0.97
G1	P3172_kis1	6	71	5.5	47	2.5	84	3.4	83	4.4	56	5.7	104	3.8	445	4.2	3	BLUP	-0.42
G1	P3173_kis2	6	60	5.2	58	3.8	132	3.0	104	3.9	32	4.3	34	3.5	420	3.8	2	BLUP	-0.83
G1	P3086_yam1																2	z-score	-1.00
G1	P3091_yam9																3	z-score	-0.59
G1	P3107_kas1																4	z-score	-0.17
G2	F1103_A-3	1									18	6.6			18	6.6		BLUP	0.21
G2	F1111_A-11	1									22	5.2			22	5.2		BLUP	-0.66
G2	F1112_A-12	1									12	3.6			12	3.6		BLUP	-0.35
G2	F1120_A-20	1									19	6.5			19	6.5		BLUP	0.43
G2	F1121_A-21	1									16	5.7			16	5.7		BLUP	0.48
G2	F1122_A-22	1									15	6.3			15	6.3		BLUP	-0.93
G2	F1128_A-28	1									10	9.0			10	9.0		BLUP	0.55
G2	F1130_A-30	1									14	6.3			14	6.3		BLUP	0.46
G2	F1137_A-37	1									10	6.2			10	6.2		BLUP	-0.45
G2	F1141_A-41	1									7	6.3			7	6.3		BLUP	-0.66
G2	F1148_A-48	1									17	5.0			17	5.0		BLUP	-0.41
G2	F1163_A-63	1									20	4.5			20	4.5		BLUP	-0.31
G2	F1166_A-66	1									18	7.4			18	7.4		BLUP	1.01
G2	F1171_A-71	1									14	7.4			14	7.4		BLUP	0.91
G2	F1172_A-72	1											16	5.3	16	5.3		BLUP	-0.06
G2	F1176_A-76	1											22	5.6	22	5.6		BLUP	1.12
G2	F1210_B-10	1								8	6.2				8	6.2		BLUP	0.59
G2	F1214_B-14	1											44	5.3	44	5.3		BLUP	1.41
G2	F1216_B-16	1											9	6.1	9	6.1		BLUP	0.97
G2	F1218_B-18	1											21	6.0	21	6.0		BLUP	1.71
G2	F1220_B-20	1								12	7.3				12	7.3		BLUP	-0.42
G2	F1221_B-21	1											23	4.7	23	4.7		BLUP	0.16
G2	F1222_B-22	1											29	4.7	29	4.7		BLUP	0.40
G2	F1226_B-26	1											40	5.6	40	5.6		BLUP	0.71
G2	F1227_B-27	1											30	5.9	30	5.9		BLUP	0.67
G2	F1229_B-29	1											26	4.2	26	4.2		BLUP	0.52
G2	F1230_B-30	1											20	5.9	20	5.9		BLUP	1.17
G2	F1238_B-38	1								5	7.6				5	7.6		BLUP	0.24
G2	F1240_B-40	1											32	5.7	32	5.7		BLUP	0.45
G2	F1250_B-50	1											21	5.5	21	5.5		BLUP	1.72

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Generation	Clone	Site	Site_110		Site_111		Site_112		Site_113		Site_115		Site_116		Total		Published score	statistics	Clonal value
		N	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean			
G2	F1254_B-54	1									9	7.1			9	7.1		BLUP	-0.62
G2	F1255_B-55	1											31	4.8	31	4.8		BLUP	1.01
G2	F1256_B-56	1											44	5.9	44	5.9		BLUP	0.94
G2	F1259_B-59	1									16	6.8			16	6.8		BLUP	0.45
G2	F1261_B-61	1											38	6.7	38	6.7		BLUP	1.13
G2	F1265_B-65	1									20	5.9			20	5.9		BLUP	0.12
G2	F1274_B-74	2									23	6.7	53	7.5	76	7.2		BLUP	1.22
G2	F1275_B-75	1											39	5.0	39	5.0		BLUP	0.43
G2	F1282_B-82	1									13	6.4			13	6.4		BLUP	0.66
G2	F1293_B-93	1									33	6.6			33	6.6		BLUP	0.46
G2	F1294_B-94	1									19	7.1			19	7.1		BLUP	0.71
G2	F1303_ima_33-11	1					51	3.9							51	3.9		BLUP	-0.05
G2	F1304_ima_24-5	1					41	3.8							41	3.8		BLUP	-0.03
G2	F1306_oom_05-06	1			76	4.0									76	4.0		BLUP	-0.51
G2	F1307_oom_07-07	1			51	3.4									51	3.4		BLUP	-1.39
G2	F1308_oom_31-03	1			32	3.4									32	3.4		BLUP	-0.51
G2	F1309_oom_24-12	1			42	3.7									42	3.7		BLUP	-0.48
G2	F1310_oom_20-04	1			36	4.8									36	4.8		BLUP	0.51
G2	F1312_oom_05-08	1			38	3.5									38	3.5		BLUP	-0.40
G2	F1313_oom_05-03	1			42	3.0									42	3.0		BLUP	-0.43
G2	F1314_oom_08-04	1			41	3.8									41	3.8		BLUP	0.26
G2	F1315_tar_11-01	1			13	3.8									13	3.8		BLUP	-0.08
G2	F1316_tar_11-03	1			28	4.2									28	4.2		BLUP	0.13
G2	F1317_tar_08-12	1			40	4.6									40	4.6		BLUP	0.70
G2	F1318_tar_10-01	1			32	3.8									32	3.8		BLUP	-0.37
G2	F1319_tar_08-06	1			19	4.6									19	4.6		BLUP	-0.40
G2	F1320_tar_08-02	1			22	5.0									22	5.0		BLUP	0.40
G2	F1321_tar_13-10	1			28	4.6									28	4.6		BLUP	-0.50
G2	F1322_tar_10-07	1			23	3.4									23	3.4		BLUP	-0.92
G2	F1323_tar_08-09	1			20	4.5									20	4.5		BLUP	-0.09
G2	F1324_tar_08-11	1			23	4.1									23	4.1		BLUP	-0.11
G2	F1325_tar_10-06	1			38	4.2									38	4.2		BLUP	-0.03
G2	F1327_ima-2	1	76	6.5											76	6.5		BLUP	0.02
G2	F1328_ima-3	1	8	7.7											8	7.7		BLUP	1.40
G2	F1329_ima-4	1	9	7.9											9	7.9		BLUP	1.00
G2	F1330_ima-5	1	44	7.6											44	7.6		BLUP	0.30
G2	F1331_ima-6	1	60	6.3											60	6.3		BLUP	0.28
G2	F1332_ima-7	1	69	7.4											69	7.4		BLUP	1.07
G2	F1333_ima-8	1	46	7.4											46	7.4		BLUP	0.63
G2	F1334_ima-9	1	49	7.1											49	7.1		BLUP	0.74
G2	F1335_ima-10	1	39	6.9											39	6.9		BLUP	0.70
G2	F1336_ima-11	1	83	7.2											83	7.2		BLUP	0.83
G2	F1337_ima-12	1	66	6.1											66	6.1		BLUP	0.07
G2	F1338_ima-13	1	14	5.8											14	5.8		BLUP	0.46
G2	F1339_ima-14	1	17	7.8											17	7.8		BLUP	0.85
G2	F1340_sef-1	1	45	7.3											45	7.3		BLUP	0.94
G2	F1341_sef-2	1	24	8.8											24	8.8		BLUP	1.62
G2	F1342_sef-3	1	25	8.1											25	8.1		BLUP	1.25
G2	F1343_sef-4	1	50	7.9											50	7.9		BLUP	1.57
G2	F1344_sef-5	1	43	7.0											43	7.0		BLUP	0.47
G2	F1345_sef-6	1	19	7.2											19	7.2		BLUP	0.71
G2	F1346_sef-7	1	36	8.2											36	8.2		BLUP	1.71
G2	F1347_sef-8	1	12	9.6											12	9.6		BLUP	1.37
G2	F1348_sef-9	1	88	8.4											88	8.4		BLUP	2.04
G2	F1349_sef-10	1	87	7.2											87	7.2		BLUP	0.72
G2	F1350_sef-11	1	49	6.5											49	6.5		BLUP	0.31
G2	F1351_sef-12	1	54	7.2											54	7.2		BLUP	0.82
G2	F1352_sef-13	1	52	7.0											52	7.0		BLUP	0.59
G2	F1353_sef-14	1	49	5.9											49	5.9		BLUP	0.21
G2	F1354_sef-15	1	54	7.0											54	7.0		BLUP	0.88
G2	F1355_sef-16	1	44	6.5											44	6.5		BLUP	0.68
G2	F1357_sef-18	1	15	7.0											15	7.0		BLUP	1.16
G2	F1358_sef-19	1	58	6.4											58	6.4		BLUP	-0.21
G2	F1359_sef-20	1	22	7.1											22	7.1		BLUP	0.56
G2	F1361_sef-22	1	8	6.2											8	6.2		BLUP	-0.07
G1	44 clones	4.3	2,341	5.5	2,169	3.2	2,549	3.3	2,201	4.3	821	5.1	1,779	3.5	11,860	4.0			-0.72
G2	95 clones	1.0	1,414	7.2	644	4.0	92	3.8			370	6.4	538	5.6	3,058	6.0			0.42
Total		2.1	3,755	6.3	2,813	3.5	2,641	3.3	2,201	4.3	1,191	5.7	2,317	4.4	14,918	5.4			0.04

These sites were settled based on randomized complete block designs with three replicates per clone. However, due to missing data the reported values for Site 116 are based on two replicates per clone.

The Published Score column shows the evaluated values listed in the characteristic table (Kyushu Forestry Research Association 1998) .

The statistics column shows the method used to calculate the Clonal value. BLUP denotes Best Linear Unbiased Prediction, while z-score denotes the method based on standardization values in conjunction with means and standard deviations.

The published scores of three G1 clones (P3086_yam1, P3091_yam9, P3107_kas1) not planted in the clonal test sites were converted to Clonal values using a linear model relating the published scores of the 44 other G1 clones to the corresponding BLUP-derived Clonal values (see details in Supplementary Materials S1).