Supplementary Figure and Table

Table S1. Geographic locations, genetic diversity, and mean seed traits of the sampled populations from the pine populations.

Species	Location	Population	lon	lat	Alt (m)	genetic diversity (mtDNA)	genetic diversity (cpDNA)	seed wide （mm）	seed length (mm)	seed mass (100seeds/g)
Pinus. yunnanensis	1 Tengchong, China	TCPy	98.58	24.91	1776	0	0.303	2.2237	5.8867	1.698
	2 Baoshan,China	BSPy	99.1333	24.4667	1966	0.264	0.282	2.169	5.966	1.824
	3 Lijiang, China	LJPy	100.217	26.8833	2651	0.718	0.404	2.1497	4.6483	1.355
	4 Jianshui, China	JSPy	102.95	23.8333	2003	0.75	0.37	2.2407	5.5307	1.969
	5 Kunming, China	KMPy	102.617	24.91	2041	0.467	0.315	2.1627	5.389	1.53
	6 Yiliang, China	YLPy	103.167	24.7167	1846	0.133	0.505	2.151	5.503	1.681
	7 Wenshan, China	WSPy01	104.241	23.4219	1434	0.719	0.4	2.1617	5.5643	1.819
	8 Wenshan, China	WSPy02	104.23	26.53	1573	0.682	0.341	2.1667	5.67	1.908
	9 Xilin, Guangxi, China	XLPy	104.617	24.5979	857	0.747	0.337	2.4647	6.1393	2.141
	10 Longlin, Guangxi, China	LLPy	104.963	24.6907	1294	0.5	0.297	2.362	6.078	2.061
	11 Leye, Guangxi, China	LYPy	106.366	24.8044	1336	0.362	0.265	2.2967	6.2323	2.257
	12 DaLi yunlong, China	DLPy	99.29	25.87	2572	0	0.402	2.078	5.3693	1.373
P. kesiya var. *langbianensis*	13 Mojiang, China	MJPk	101.608	23.4036	1690	0.505	0.407	2.1667	5.372	1.72
	14 JingDong, China	JDPk	100.636	24.7022	1713	0.833	0.418	2.2253	5.5643	1.735
	15 Zhengyuan, China	ZYPk	101.14	23.8781	1109	0.824	0.418	2.188	5.3573	1.544
	16 Ninger, China	NEPk	100.973	23.1847	1004	0.682	0.372	2.3673	6.0127	2.06

	17 Jinggu,China	JGPK	100.5	23.4912	1707	0.692	0.347	2.2417	5.577	1.686
	18 Simao, China	SMPk	100.948	22.7074	1340	0.641	0.32	2.5617	5.8973	1.962
	19 Dadugang,China	DDGPk	100.992	22.4172	1113	0.476	0.442	2.3687	5.6117	1.774
	20 Jinghong Hejian, China	JHPk02	100.513	22.2446	1244	0.857	0.39	2.3417	5.895	2.018
P. kesiya	21 Samneua, Laos	SNPk	103.964	20.2158	1399	0.371	0.376	2.4257	6.0483	2.203
	22 Phonsavan, Laos	FSWPK	103.1182	19.4996	1070	0.821	0.383	2.1697	5.6277	1.572
	23 Attapeu, Laos	ASPPk	107.189	15.2223	1061	0.808	0.132	2.3427	5.646	2.014
	24 La Pan Tan,Vietnam	V04	104.1333	21.75	1410	0.923	0.117	2.6487	5.8627	2.484
	25 Dak Nong, Vietnam	V08	107.4333	12.15	1493	0.659	0.12	2.1507	5.0657	1.45
	26 QingMai,Thailand	T0421	98.817	19.317	1353	0.25	0.044	2.401	6.0513	1.969
	27 Nong Krating, Thailand	T0463	98.283	17.933	1022	0	0.221	2.5543	5.952	2.101
	28 Hod, Thailand	T0465	98.417	18.167	442	0.182	0.03	2.4167	5.6633	1.856

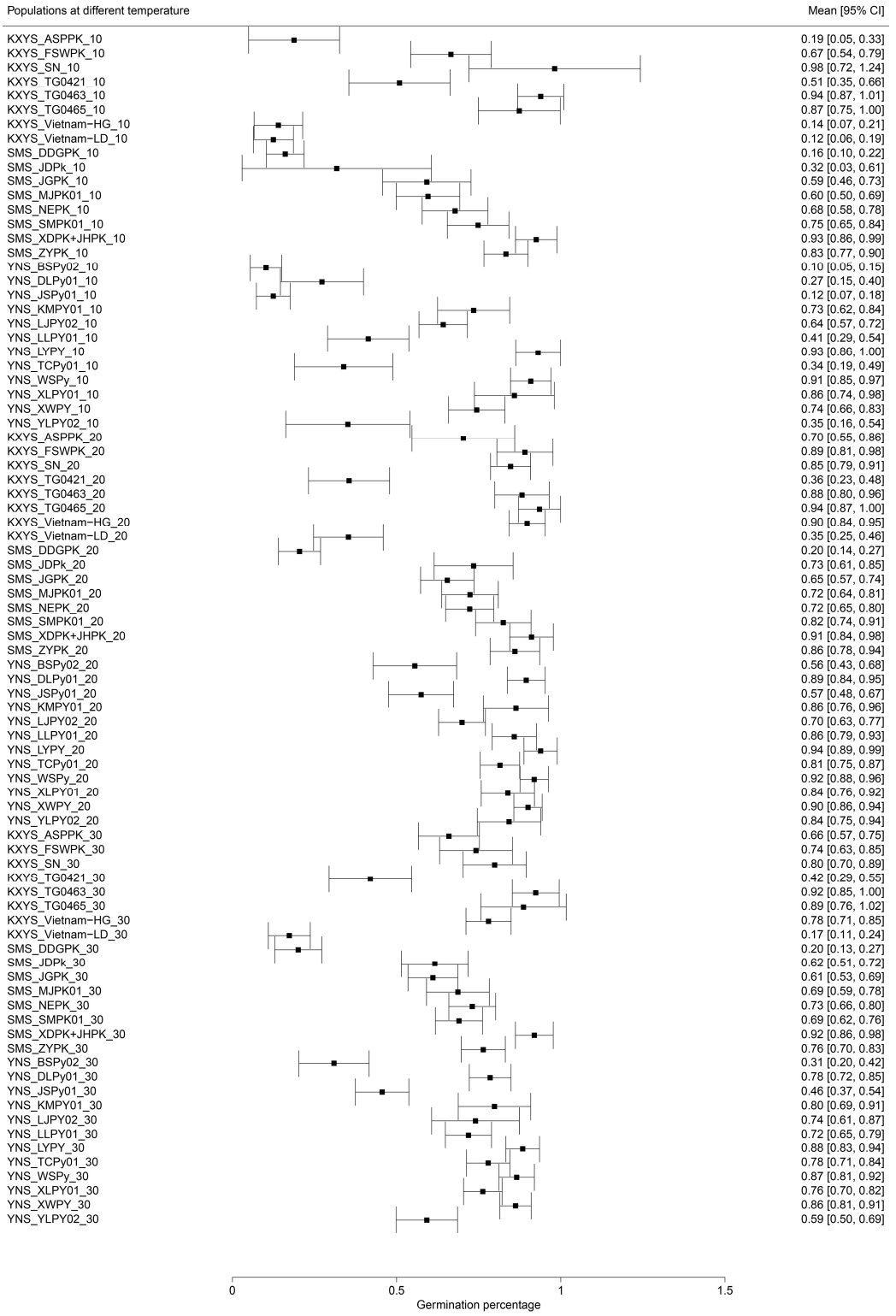

Figure S1 Germination percentage estimated based on the meta-analytic approach.

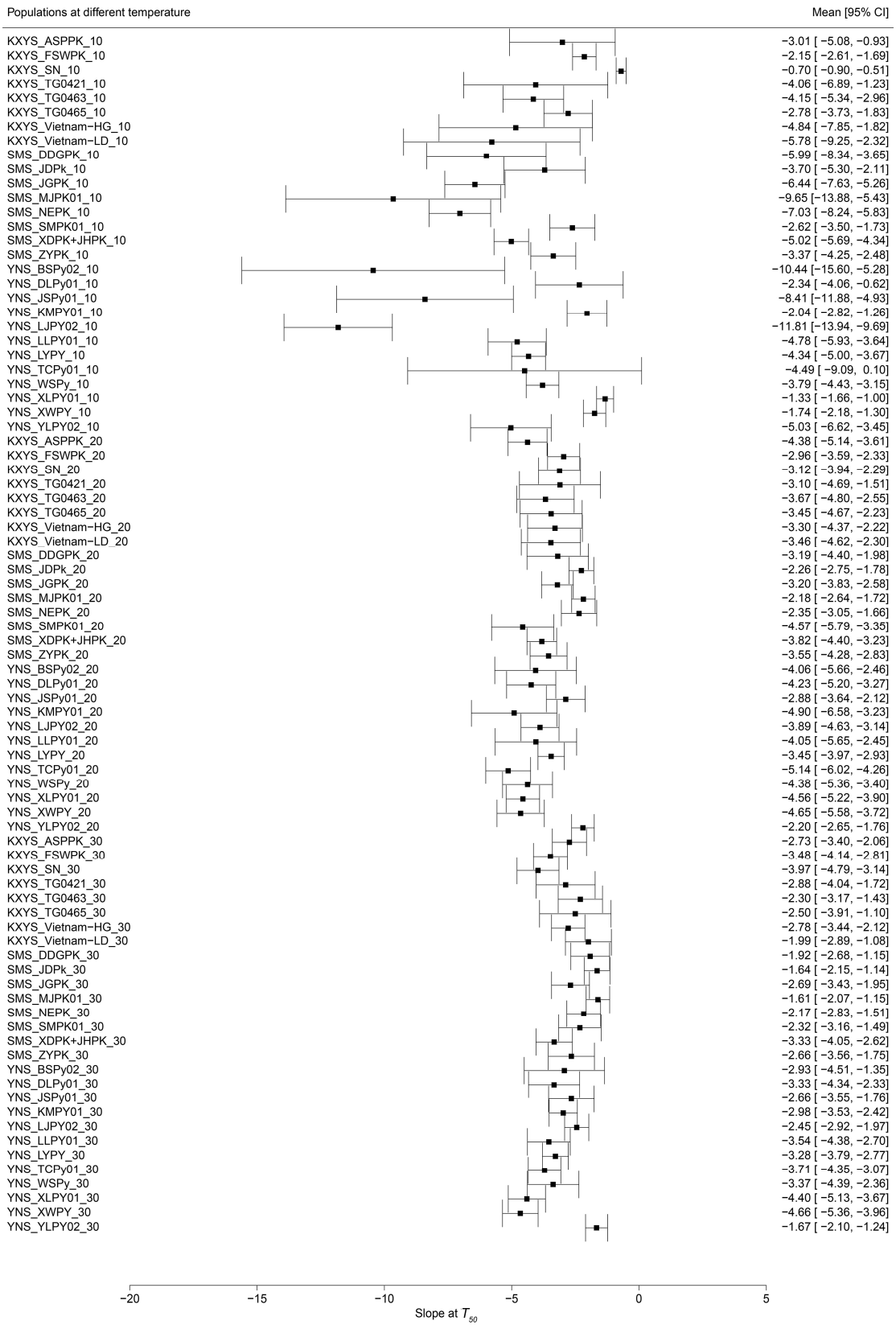

Figure S2 The *D* (Slope T_{50}) estimated based on the meta-analytic approach.

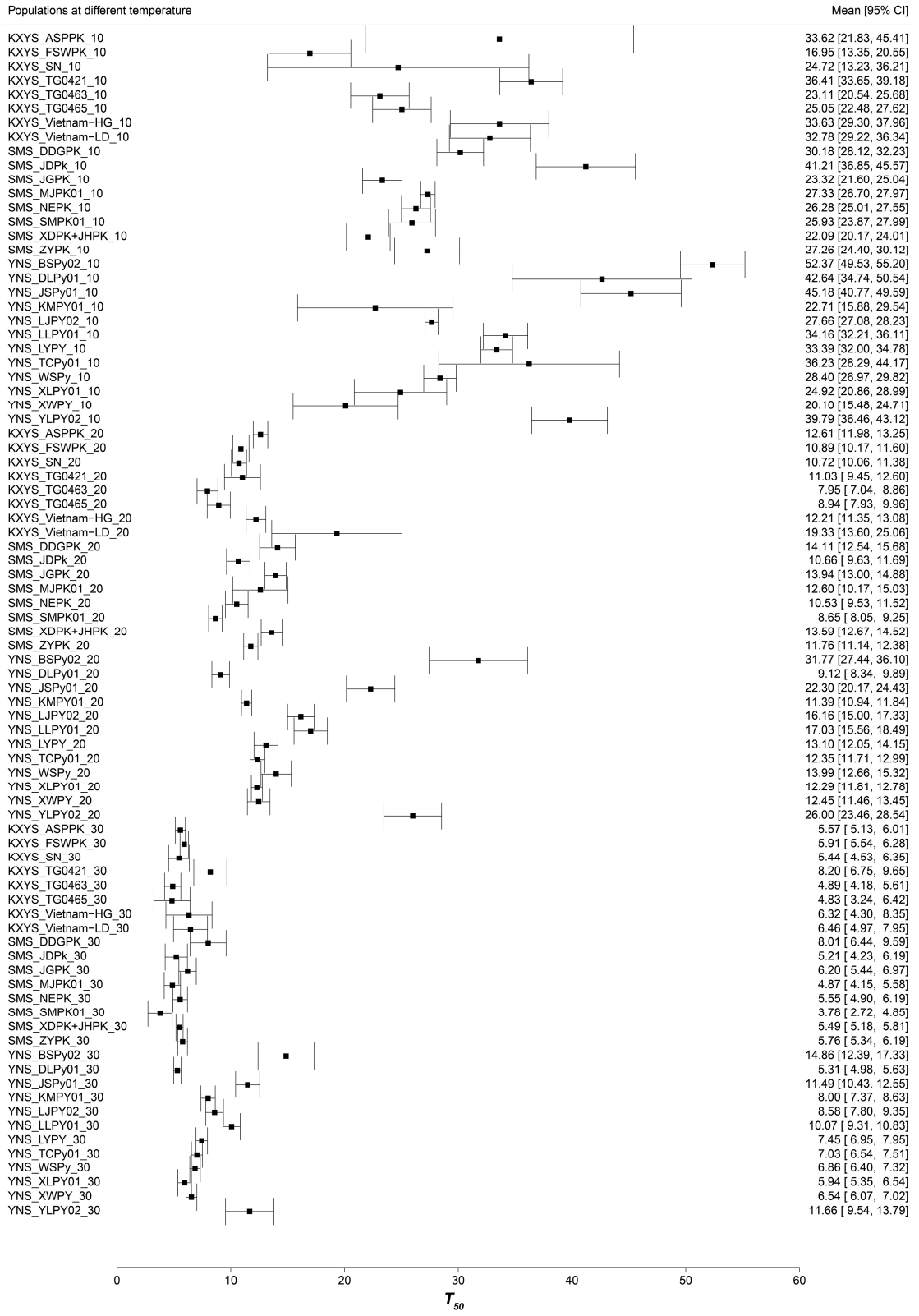

Figure S3 *T50* estimated based on the meta-analytic approach.