Supplementary Materials

Table S1: Two-way analysis of variance of effects of *Polygonum perfoliatum* populations, seed dormancy release treatments and their interactions on final germination percentage

Source	DF	SS	MS	F value	P Value
Populations (P)	2	17.49	8.74	0.36	0.6991^{NS}
Treatments (T)	6	103572.22	20714.44	852.06	0.0001*
P×T	12	162.78	16.28	0.67	0.7488^{NS}

DF = Degree of freedom, SS = Sum of squares, MS = Mean square, NS = Non-significant ($p > 0.05$), * = Significant ($p \leq 0.05$)

Table S2: Two-way analysis of variance of effects of *Polygonum perfoliatum* populations, light dark regimes and their interactions on final germination percentage

Source	DF	SS	MS	F value	P Value
Populations (P)	2	234.72	117.36	2.98	0.0676^{NS}
Light/Dark (LD)	2	2955.55	1477.77	37.55	0.0001*
P×LD	4	61.11	15.27	0.38	0.8151^{NS}

DF = Degree of freedom, SS = Sum of squares, MS = Mean square, NS = Non-significant ($p > 0.05$), * = Significant ($p \leq 0.05$)

Table S3: Two-way analysis of variance of effects of *Polygonum perfoliatum* populations, constant temperatures and their interactions on final germination percentage

Source	DF	SS	MS	F value	P Value
Populations (P)	2	265.41	132.70	4.80	0.0104*
Temperature (T)	9	108200.83	12022.31	434.97	0.0001*
P×T	18	1255.41	69.74	2.52	0.0022*

DF = Degree of freedom, SS = Sum of squares, MS = Mean square, * = Significant ($p \leq 0.05$)

Table S4: Two-way analysis of variance of effects of *Polygonum perfoliatum* populations, alternating temperatures and their interactions on final germination percentage

Source	DF	SS	MS	F value	P Value
Populations (P)	2	280.35	140.17	3.77	0.0282*
Constant tempeartues (T_c)	6	53097.61	8849.60	238.51	0.0001*
P× T_c	12	1173.80	97.81	2.63	0.0064*

DF = Degree of freedom, SS = Sum of squares, MS = Mean square, * = Significant ($p \leq 0.05$)

Table S5: Two-way analysis of variance of effects of *Polygonum perfoliatum* populations, pH levels and their interactions on final germination percentage

Source	DF	SS	MS	F value	P Value
Populations (P)	2	185.19	92.59	3.03	0.0538*
pH	8	55912.96	6989.12	228.73	0.0001*
P×pH	16	1414.81	88.43	2.89	0.0009*

DF = Degree of freedom, SS = Sum of squares, MS = Mean square, * = Significant ($p \leq 0.05$)

Table S6: Two-way analysis of variance of effects of *Polygonum perfoliatum* populations, salinity levels and their interactions on final germination percentage

Source	DF	SS	MS	F value	P Value
Populations (P)	2	585.19	292.59	20.39	0.0001*
Salinity levels (S)	8	86668.52	10833.56	754.85	0.0001*
P×S	16	260.65	16.29	1.14	0.3385^{NS}

DF = Degree of freedom, SS = Sum of squares, MS = Mean square, NS = Non-significant ($p > 0.05$), * = Significant ($p \leq 0.05$)

Table S7: Two-way analysis of variance of effects of *Polygonum perfoliatum* populations, different osmotic potentials and their interactions on final germination percentage

Source	DF	SS	MS	F value	P Value
Populations (P)	2	257.41	128.70	4.12	0.0198*
Osomotic Potentials (O)	8	98146.30	12268.29	392.59	0.0001*
P×O	16	184.26	11.52	0.37	0.9861^{NS}

DF = Degree of freedom, SS = Sum of squares, MS = Mean square, NS = Non-significant ($p > 0.05$), * = Significant ($p \leq 0.05$)

Table S8: Two-way analysis of variance of effects of *Polygonum perfoliatum* populations, seed burial depths and their interactions on seedling emergence

Source	DF	SS	MS	F value	P Value
Populations (P)	2	204.17	102.08	3.00	0.0533*
Seed burial Depths (D)	8	52058.33	6507.29	191.23	0.0001*
P×D	16	504.17	31.51	0.93	0.5433^{NS}

DF = Degree of freedom, SS = Sum of squares, MS = Mean square, NS = Non-significant ($p > 0.05$), * = Significant ($p \leq 0.05$)