

1) Results of Analysis of Molecular Variance for two model based populations indicated by STRUCTURE

Pop	P1	P2
n	144	126
SSWP	1999.514	1973.675

Summary AMOVA Table

Source	df	SS	MS	Est. Var.	%
Among Po	1	330.052	330.052	2.345	14%
Within Po	268	3973.188	14.825	14.825	86%
Total	269	4303.241		17.171	100%

Stat	Value	P(rand >= data)
PhiPT	0.137	0.001

$$\text{PhiPT} = \text{AP} / (\text{WP} + \text{AP}) = \text{AP} / \text{TOT}$$

Key: AP = Est. Var. Among Pops, WP = Est. Var. Within Pops

2) Results of Analysis of Molecular Variance for accession grouped according to geographic origin

Pop	North America	South America	Eastern Asia	Southern Asia	Western Asia	Balkans	Southern Europe	Northern Europe	Eastern Europe	Western Europe	Central Europe
n	17	16	14	20	42	43	47	13	41	27	85
SSWP	282.353	229.188	174.929	260.300	602.619	581.093	699.149	162.538	556.317	435.333	1225.235

Summary AMOVA Table

Source	df	SS	MS	Est. Var.	%
Among Po	10	545.146	54.515	1.247	8%
Within Po	354	5209.054	14.715	14.715	92%
Total	364	5754.200		15.962	100%

Stat	Value	P(rand >= data)
PhiPT	0.078	0.001

PhiPT = AP / (WP + AP) = AP / TOT

Key: AP = Est. Var. Among Pops, WP = Est. Var. Within Pops

Pairwise Population Linearized PhiPT Values

North America	South America	Eastern Asia	Southern Asia	Western Asia	Balkans	Southern Europe	Northern Europe	Eastern Europe	Western Europe	Central Europe	
0.000											North America
0.041	0.000										South America
0.102	0.057	0.000									Eastern Asia
0.085	0.078	0.011	0.000								Southern Asia
0.103	0.088	0.087	0.074	0.000							Western Asia
0.074	0.029	0.018	0.059	0.092	0.000						Balkans
0.068	0.038	0.073	0.083	0.053	0.045	0.000					Southern Europe
0.033	0.003	0.078	0.101	0.117	0.039	0.063	0.000				Northern Europe
0.042	0.046	0.122	0.108	0.119	0.051	0.062	0.045	0.000			Eastern Europe
0.040	0.026	0.087	0.087	0.126	0.040	0.053	0.012	0.013	0.000		Western Europe
0.074	0.095	0.165	0.157	0.211	0.102	0.127	0.034	0.071	0.033	0.000	Central Europe

Linearized PhiPT Values below diagonal.

3) Results of Analysis of Molecular Variance for accession grouped according to source of seeds and improvement status

Pop	Cultivars PAS BG	Cultivated materials PAS BG	Landraces PAS BG	Collection of A. Lukaszewski	Cultivars from breeding compan	Breeding strains from Danko
n	90	46	155	11	39	26
SSWP	1203.878	616.391	2273.200	175.727	581.154	232.577

Summary AMOVA Table

Source	df	SS	MS	Est. Var.	%
Among Po	5	651.283	130.257	2.172	13%
Within Po	361	5082.927	14.080	14.080	87%
Total	366	5734.210		16.253	100%

Stat	Value	P(rand >= data)
PhiPT	0.134	0.001

$$\text{PhiPT} = \text{AP} / (\text{WP} + \text{AP}) = \text{AP} / \text{TOT}$$

Key: AP = Est. Var. Among Pops, WP = Est. Var. Within Pops

Pairwise Population PhiPT Values

Cultivars PAS BG	Cultivated materials PAS BG	Landraces PAS BG	Collection of A. Lukaszewski	Cultivars from breeding compan	Breeding strains from Danko	
0.000						Cultivars PAS BG
0.135	0.000					Cultivated materials PAS BG
0.115	0.092	0.000				Landraces PAS BG
0.272	0.305	0.204	0.000			Collection of A. Lukaszewski
0.183	0.215	0.200	0.174	0.000		Cultivars from breeding companies
0.250	0.247	0.253	0.331	0.120	0.000	Breeding strains from Danko

Phi'PT Values below diagonal.