Supplementary Materials

Table S1. List of geographic location with bioclimatic conditions of Algerian faba bean (*Vicia faba* L.) accessions

Accession	Geographical origin	Climate	Botanical Class	Altitude	Latitude	Longitude
VF A1	Biskra (Sidi okba)	Desert climate, dry and hot	Major	54 m	34° 45′ 0″ N	5° 54′ 0″E
VF A2	Bouira (Aïn bessam)	Mediterranean climate with hot summers	Major	675 m	36° 17′ 48″ N	3° 40′ 12″E
VF A3	Bouira (Guerrouma)	Mediterranean climate with hot summers	Major	558 m	36° 26′ 5″ N	3° 25′ 37″ E
VF A4	Chlef (Bouzghaia)	Mediterranean climate with hot summers	Major	246 m	36° 20′ 20″ N	1° 14′ 23″E
VF A5	Chlef (Abou el hassene)	Mediterranean climate with hot summers	Major	193 m	36° 25′ 4″ N	1° 11′ 42″E
VF A6	Chlef (Abou el hassene)	Mediterranean climate with hot summers	Major	193 m	36° 25′ 4″ N	1° 11′ 42″E
VF A8	Djelfa (Ain oussara)	Mediterranean climate with hot summers	Major	800 m	35° 26′ 56″ N	2° 54′ 16″ E
VF A9	Relizane (El guettar)	Mediterranean climate with hot summers	Major	485 m	36° 5′ 16″ N	0° 48′ 57″E
VF A10	Tiaret (Sebaine)	Mediterranean climate with hot summers	Major	898 m	35° 27′ 22″N	1° 36′ 13″E
VF A11	Medea (Tablat)	Mediterranean climate with hot summers	Major	893 m	36° 28′ 9″ N	3° 17′ 58″E
VF A12	Medea (Tablat)	Mediterranean climate with hot summers	Major	893 m	36° 28′ 9″ N	3° 17′ 58″E
VF A13	Tizi ouzou (Ain el hammam)	Mediterranean climate with hot summers	Major	1083 m	36° 34′ 17″ N	4° 18′ 35″E
VF A14	Tizi ouzou (Ouaguenoun)	Mediterranean climate with hot summers	Major	254 m	36° 46′ 12'' N	4° 10′ 29″E
VF A15	Tarf (Ain el karma)	Mediterranean climate with hot summers	Major	366 m	36° 35′ 38″ N	8° 12′ 4'' E

Table S2. Summary of primers used for SSR studies among 14 Algerian faba bean accessions.

Locus	Forward	Reverse	Annealing temp. (°C)	Expected size (bp)
VFG34	AGATGGGAGCTGAGAATGAT	TTTAAACCAAACAACAGAGT	58	200
GA6	GAAAGGTTTTCTGATTCCAACAA	GACAGTGTACGTAGACCCACGC	58	184
GAII67	GATTCAGAGAAAAGGTGGAAAGC	GTCACATGATGAAGCTAGATGGC	58	248
GATTA 11	GTTGCACTACATTTCGTCTTTGG	GTTGCAACAGAAGAGGCCAC	58	233
JF1AG2	GTGGTCGAAAACCTGACAAGA	GGAGCATCCTGAATCCAAGTACC	55	211
JF1AG3	GTGGTCGAAAACCTGACAAGA	GGAGCATCCTGAATCCAAGTACC	58	211
JF1AAC2	GATCTATGCGACACAACATGTAT	GCTCACATCCAAAGTTGAATC	55	147

Table S3. Eigenvalues, variances and coefficients associated with the principal components

	Eigenvalue	Variance (%)	Cumulative variance (%)
Dim.1	**3.453202**	**34.53202**	**34.53202**
Dim.2	**2.296495**	**22.96495**	**57.49697**
Dim.3	**1.527162**	**15.27162**	**72.76859**
Dim.4	1.186852	11.86852	84.6371
Dim.5	0.815574	8.155739	92.79284
Dim.6	0.349926	3.499256	96.2921
Dim.7	0.19454	1.945399	98.2375
Dim.8	0.105842	1.058423	99.29592
Dim.9	0.054427	0.544268	99.84019
Dim.10	0.015981	0.159811	100

Table S4. Results of the cophenetic correlation coefficients (CCC) for comparing diversity matrices and clustering methods for agro-morphological and molecular data in Algerian faba bean.

Dissimilarity matrix	**Clustering methods**			
Agro-morphological data	Ward	Single	UPGMA	Complete
Euclidean	0.87	0.71	0.76	0.67
Square Euclidean	0.65	0.59	0.65	0.57
Manhattan	0.75	0.72	0.76	0.73
Mahalanobis	0.55	0.57	0.67	0.52
Genotypic data				
Nei	0.64	0.69	0.83	0.74
Jaccard	0.73	0.54	0.66	0.74
Rogers	0.69	0.51	0.63	0.71

Table S5. Analysis of molecular variation (AMOVA) among and within fourteen Algerian faba bean accessions.

Source	df	SS	MS	Est. Var.	%
Among Regions	8	80.952	10.119	0.742	16%
Among Pops	5	39.333	7.867	3.933	84%
Within Pops	14	0.000	0.000	0.000	0%
Total	27	120.286		4.675	100%

df, degree of freedom; SS, sum of square; MS, mean of square; Est.Var., estimated variation; %, percentage of estimated variation.

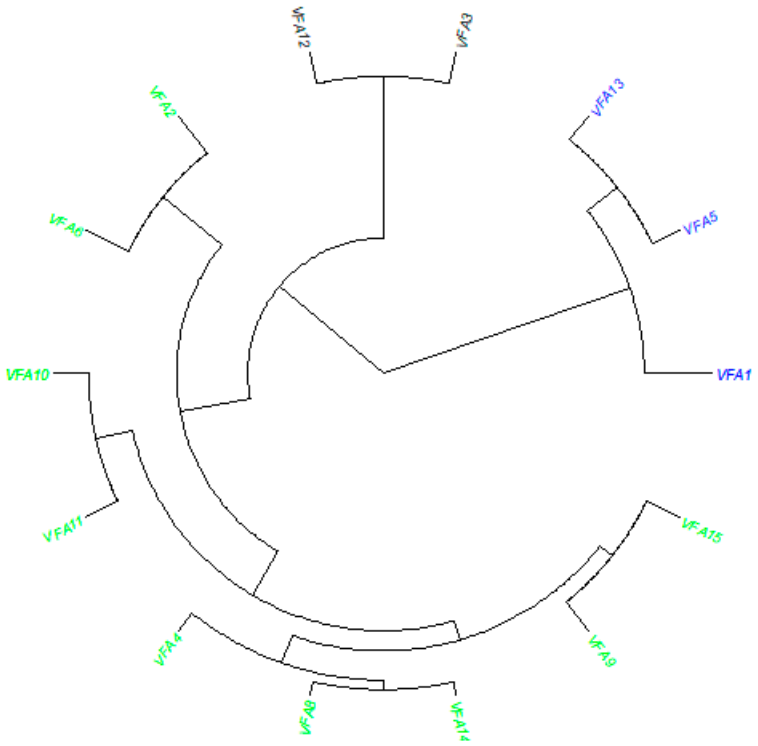

Figure S1. Dendrogram based on Euclidean distance and Ward's method for morphological traits of the 14 Algerian faba bean accessions.

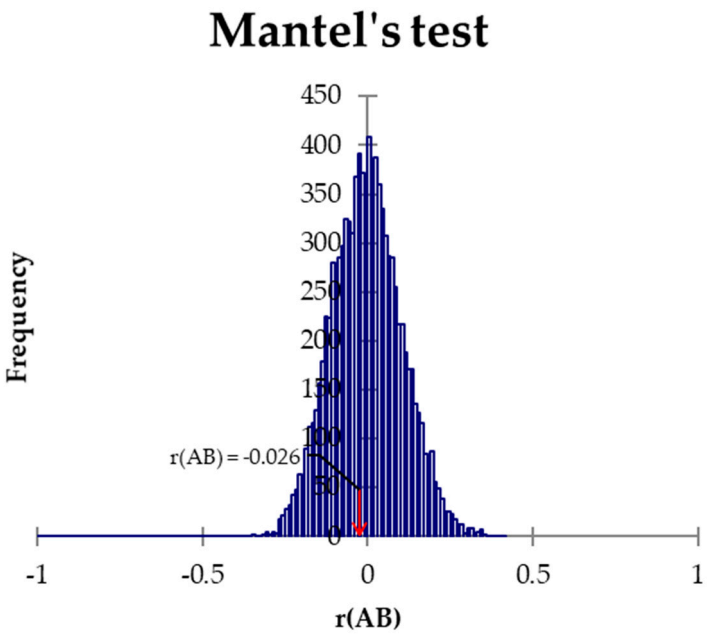

Figure S2. Mantel's test of the morphological (A) and molecular (B) matrices obtained from 1000 permutation. (r(AB) = -0.0256, p-value = 0.83)