

Table S1. Details of tomato germplasm collection analysed in the present study. Cultivars were obtained from the National Gene Bank, from the community Seed Bank – Peliti, from Independent Producers (IP), or from Hellenic Agricultural Organization DEMETER (HAO).

#	Germplasm	Accession	Type	Source	Origin	Fruit size ¹	Type of growth
1	GRC 058/04	GB1	Landrace	Greek Gene Bank	Irakleion	medium	indeterminate
2	GRC 069/04	GB2	Landrace	Greek Gene Bank	Chania	large	determinate
3	GRC 442/04	GB3	Landrace	Greek Gene Bank	Chania	large	indeterminate
4	GRC 443/04	GB4	Landrace	Greek Gene Bank	Chania	large	determinate
5	GRC 445/04	GB5	Landrace	Greek Gene Bank	Chania	large	indeterminate
6	GRC 448/04	GB6	Landrace	Greek Gene Bank	Chania	very large	indeterminate
7	GRC 451/04	GB7	Landrace	Greek Gene Bank	Chania	small	indeterminate
8	GRC 488/04	GB8	Landrace	Greek Gene Bank	Chania	small	determinate
9	GRC 490/04	GB9	Landrace	Greek Gene Bank	Chania	small	determinate
10	GRC 492/04	GB10	Landrace	Greek Gene Bank	Chania	very large	indeterminate
11	HL 073/07	GB11	Landrace	Greek Gene Bank	Irakleion	very large	indeterminate
12	HL 123/07	GB12	Landrace	Greek Gene Bank	Irakleion	very large	indeterminate
13	HL 170/07	GB13	Landrace	Greek Gene Bank	Lasithi	large	determinate
14	HL 226/07	GB14	Landrace	Greek Gene Bank	Iraklion	large	indeterminate
15	HL 229/07	GB15	Landrace	Greek Gene Bank	Iraklion	very large	indeterminate
16	A2	CB1	Landrace	Peliti Seed Bank	Santorini	medium	indeterminate
17	K4	CB2	Landrace	Peliti Seed Bank	Crete	very large	indeterminate
18	K5	CB3	Landrace	Peliti Seed Bank	Crete	large	indeterminate
19	K6	CB4	Landrace	Peliti Seed Bank	Santorini	medium	indeterminate
20	K7	CB5	Landrace	Peliti Seed Bank	Crete	very large	determinate
21	K8	CB6	Landrace	Peliti Seed Bank	Crete	small	determinate
22	K9	CB7	Landrace	Peliti Seed Bank	Crete	very large	determinate
23	K10	CB8	Landrace	Peliti Seed Bank	Crete	small	indeterminate
24	K14	CB9	Landrace	Peliti Seed Bank	Crete	cherry	indeterminate
25	K16A	CB10	Landrace	Peliti Seed Bank	Crete	large	indeterminate

26	K21	CB11	Landrace	Peliti Seed Bank	Crete	very large	indeterminate
27	K23	CB12	Landrace	Peliti Seed Bank	Halkidiki	very large	indeterminate
28	ABOURNELA	IP1	Landrace	IP	Crete	small	determinate
29	AVGENIKIS	IP2	Landrace	IP	Crete	large	indeterminate
30	BOURNELATI	IP3	Landrace	IP	Peloponisos	small	indeterminate
31	PLATANIANH	IP4	Landrace	IP	Crete	very large	indeterminate
32	PSOMOTOMATA	IP5	Landrace	IP	Crete	very large	indeterminate
33	KATERINI	IP6	Landrace	HAO-KATERINI	Katerini	very large	indeterminate
34	1A 24	MV1	Modern variety	HAO- CRETE		medium	indeterminate
35	TOM 8/19	MV2	Modern variety	HAO- CRETE		medium	indeterminate
36	TOM 8/24	MV3	Modern variety	HAO- CRETE		large	indeterminate
37	ARTEMIDA	MV4	Modern variety	HAO- KORIVOS		large	indeterminate
38	PAXOI	MV5	Modern variety	HAO- KORIVOS		very large	indeterminate
39	OLYMPIA	MV6	Modern variety	HAO- KORIVOS		very large	indeterminate
40	ILIDA	MV7	Modern variety	HAO- KORIVOS		medium	determinate
41	ZAKINTHOS	MV8	Modern variety	HAO- KORIVOS		large	indeterminate
42	PRIMADONA F1	H1	Hybrid	HAZERA GENETICS		very large	indeterminate
43	ELPIDA F1	H2	Hybrid	ENZA ZADEN		large	indeterminate

¹Fruit size classification (according to Schwarz et al., 2014): Very Small (cherry) = 1-20 g; Small = 20-70 g; Medium = 70-100 g; Large = 100-180 g; Very Large = >180 g.

Table S2. Full details of the CPVO tomato descriptors (CPVO/TP-044/4-Rev.2 2016).

Trait	CPVO Code	Scale/Characterization										
Leaf: Attitude	7	1=erect	3=semi-erect	5=horizontal	7=semi-drooping	9=drooping						
Leaf: Length	8	3=short	5=medium	7=long								
Leaf: Width	9	3=narrow	5=medium	7=broad								
Leaf: Type of blade	10	1=pinnate	2=bipinnate									
Leaf: Size of leaflets	11	1=very small	3=small	5=medium	7=large	9=very large						
Leaf: Intensity of leaf colour	12	3=light	5=medium	7=dark								
Leaf: Attitude of petiole of leaflet	15	3=semi-erect	5=horizontal	7=semi-drooping								
Inflorescence: Type	16	1=mainly uniparous	2=equally uniparous and multiparous	3=mainly multiparous								
Peduncle: abscission layer	19	1=absent	9=present									
Fruit: Green shoulder	21	1=absent	9=present									
Fruit: Intensity of green colour (exc shoulder)	24	1=very light	3=light	5=medium	7=dark	9=very dark						
Fruit: Green stripes	25	1=absent	9=present									
Fruit: Size	26	1=very small	3=small	5=medium	7=large	9=very large						
Fruit: Shape in longitudinal section	28	1=flattened	2=oblate	3=circular	4=oblong	5=cylindric	6=elliptic	7=cordate	8=ovate	9=obovate	10=pyriform	11=obcordate
Fruit: Ribbing at peduncle end	29	1=absent or very weak	3=weak	5=medium	7=strong	9=very strong						
Fruit: Depression at peduncle end	30	1=absent or very weak	3=weak	5=medium	7=strong	9=very strong						
Fruit: Size of peduncle scar	31	1=very small	3=small	5=medium	7=large	9=very large						

Fruit: Size of blossom scar	32	1=very small	3=small	5=medium	7=large	9=very large		
Fruit: Shape at blossom end	33	1=indented	2=indented to flat	3=flat	5=flat to pointed	5=pointed		
Fruit: Thickness of pericarp	35	1=very thin	3=thin	5=medium	7=thick	9=very thick		
Fruit: Number of locules	36	1=only two	2=two and three	3=three and four	4=four, five or six	5=more than six		
Fruit: Colour at maturity	37	1=cream	2=yellow	3=orange	4=pink	5=red	6=brown	7=green
Fruit: Colour of flesh	38	1=cream	2=yellow	3=orange	4=pink	5=red	6=brown	7=green
Time of flowering	41	3=early	5=medium	7=late				
Time of maturity	42	1=very early	3=early	5=medium	7=late	9=very late		

Table S3. Descriptors for 25 qualitative (CPVO descriptors) and 6 quantitative (normalized) traits used for assessing phenotypic diversity in the 43 tomato genotype collection, number of classes, and proportion (%) of occurrence for each class (I-XI).

Trait	Proportion (%)										
Qualitative	I	II	III	IV	V	VI	VII	VIII	IX	X	XI
LA	0		10.9		83.9		5.2		0		
LL	20.5		65.9		13.6						
LW	21.6		68.6		9.8						
LB	40.9	59.1									
LS	2.3		24.8		58.2		14.8		0		
ILC	21.1		78.9		0						
AP	58.6		41.4		0						
IT	78.9		15		6.1						
PA	97.7	2.3									
FGSh	23.2	76.8									
FIG	5.9		55.9		37.7		0.5		0		
FGSt	93.4	6.6									
FS	7		41.6		42.5		8.6		0.2		
FSL	25.2	20.5	28.2	2.3	2.3	0	3.4	2.3	2.3	13.6	0
FR	13.6		13.6		26.1		15.2		31.4		
FD	30.5		32		26.4		11.1		0		
FSPS	2.3		23.6		52.7		14.1		7.3		
FSBS	2.3		18.2		67.7		11.8		0		
FSB	29.1		18.9		29.8		13.2		9.1		
FTP	0		27.3		57		15.7		0		
FNL	20.5		6.8		18.4		30		24.3		
FC	2.3	0.7	24.5	6.6	65.9	0	-				
FCF	2.3	0.2	7.7	41.8	48	0	0				

FL	29.5		58.2	12.3		
MAT	-		29.5	47.3	23.2	0
Quantitative	Small/Low	Medium	Large/High			
DP	18	71.8	10.2			
DE	21.6	62.3	16.1			
FW	64.3	27.7	8			
DW	7.7	77.5	14.8			
FM	75.2	19.6	5.2			
YD	34.8	52.1	10.9			

Table S4. Correlation coefficients among 25 qualitative traits in the 43 tomato genotypes based on non-parametric Spearman correlation analysis.

Trait	LA	LL	LW	LB	LS	ILC	AP	IT	PA	FGSh	FIG	FGSt	FS	FSL	FR	FD	FSPS	FSBS	FSB	FTP	FNL	FC	FCF	FL	MAT
LA	1																								
LL	0.045	1																							
LW	0.041	0.678	1																						
LB	0.123	0.035	0.209	1																					
LS	0.026	0.662	0.823	0.114	1																				
ILC	0.041	0.099	0.190	0.347	-0.012	1																			
AP	0.130	0.142	-0.172	-0.004	-0.041	-0.090	1																		
IT	0.135	0.167	0.072	-0.273	0.261	-0.449	0.187	1																	
PA	-0.081	-0.051	0.134	0.200	0.095	-0.115	0.164	0.156	1																
FGSh	-0.162	-0.171	-0.047	-0.273	0.025	-0.151	-0.147	0.333	0.269	1															
FIG	0.037	-0.227	-0.253	-0.123	-0.066	0.115	-0.025	-0.080	-0.228	-0.067	1														
FGSt	0.304	-0.089	-0.064	-0.018	-0.012	0.050	0.280	-0.259	-0.049	-0.197	-0.007	1													
FS	-0.161	0.258	0.367	0.026	0.480	-0.261	-0.133	0.345	0.152	0.136	-0.253	-0.052	1												
FSL	0.115	0.005	0.009	0.147	-0.190	0.364	0.025	-0.287	-0.127	-0.242	0.057	-0.105	-0.420	1											
FR	-0.109	0.032	0.079	-0.282	0.295	-0.444	-0.118	0.488	-0.064	0.293	0.002	-0.058	0.629	-0.707	1										
FD	-0.166	-0.149	-0.170	-0.209	0.105	-0.450	-0.014	0.438	0.013	0.267	0.104	-0.026	0.476	-0.822	0.819	1									
FSPS	-0.196	0.283	0.089	-0.126	0.250	-0.235	0.138	0.242	-0.269	-0.292	-0.245	0.087	0.505	-0.288	0.425	0.398	1								
FSBS	-0.262	0.069	-0.019	-0.224	0.098	-0.345	0.006	0.175	-0.293	-0.209	0.078	0.106	0.407	-0.464	0.572	0.561	0.727	1							
FSB	0.237	-0.117	-0.026	0.058	-0.166	0.143	0.212	-0.374	0.077	-0.265	0.046	0.285	-0.308	0.726	-0.601	-0.686	-0.269	-0.367	1						
FTP	-0.021	-0.023	0.109	0.252	-0.113	0.427	0.056	-0.486	-0.076	-0.328	-0.138	0.150	-0.378	0.491	-0.649	-0.594	-0.227	-0.328	0.547	1					
FNL	-0.108	-0.068	-0.054	-0.051	0.219	-0.399	0.058	0.444	0.076	0.232	-0.022	0.070	0.649	-0.686	0.829	0.806	0.461	0.496	-0.529	-0.663	1				
FC	-0.109	-0.291	-0.300	-0.024	-0.385	0.006	-0.021	-0.309	-0.208	-0.005	-0.028	0.210	-0.174	-0.237	-0.016	0.137	0.003	0.106	-0.018	0.324	0.039	1			
FCF	-0.046	-0.108	-0.046	-0.120	-0.022	0.200	-0.049	-0.171	-0.225	-0.025	-0.006	0.326	-0.041	-0.157	0.091	0.065	0.085	-0.012	0.037	0.392	0.023	0.487	1		
FL	-0.472	0.025	-0.028	-0.291	-0.023	-0.097	-0.106	0.146	0.194	0.449	-0.208	-0.149	0.202	-0.005	0.177	0.093	0.198	0.119	-0.071	-0.118	0.115	0.000	0.093	1	
MAT	-0.127	-0.008	0.035	0.057	0.031	-0.156	-0.039	0.217	0.201	0.073	-0.356	-0.007	0.529	-0.379	0.436	0.372	0.314	0.339	-0.326	-0.160	0.485	0.092	0.080	0.273	1

*Values in bold are different from 0 with a significant level alpha = 0.01

Table S5. Correlation coefficients among 6 quantitative traits in the 43 tomato genotypes based on parametric Pearson correlations analysis.

Trait	DP	DE	FM	FW	DW	YD
DP	1					
DE	0.343	1				
FM	0.362	0.099	1			
FW	0.453	0.921	0.096	1		
DW	0.278	0.089	-0.078	0.135	1	
YD	0.253	0.678	0.130	0.604	0.040	1

*Values in bold are different from 0 with a significant level $\alpha = 0.01$

Table S6. First two components from the PCA analysis of the six qualitative traits, selected based on the criterion H' greater than 0.8, studied in the 43 tomato genotypes

Trait	F1	F2
LB	-0.2745	-0.7663
F	0.9312	0.0231
FD	0.9331	-0.1017
FSB	-0.7633	0.1979
FNL	0.8838	-0.1720
FL	0.2189	0.7586
Eigenvalue	3.225	1.242
Variability (%)	53.75	20.71
Cumulative %	53.75	74.46



Figure S1. Fruits of the 41 tomato landraces and modern varieties of the collection used in morphological and agronomic characterization.