

Table S1. Evaluated qualitative descriptors in F1 lines and progenitors of habanero pepper.

F1 LINES			FLOWER					PLANT			LEAF				FRUIT									
No.	CROSS	NFA	FP	CCO	CA	FC	STE	ACN	SS	IGC	LS	TL	LP	LBM	IFC	RFC	FS	FST	FSA	MC	FUS	DPF	NL	
H1	P31 × P30	3	5	2	3	2	7	3	1	7	5	3	2	3	3	5	4	1	5	1	3	5	4	
H2	P32 × P30	3	5	2	7	1	5	1	1	7	5	3	2	3	5	5	1	1	1	1	3	5	3	
H3	P33 × P30	3	5	4	7	1	5	3	1	7	5	3	1	3	5	5	1	2	1	1	7	5	3	
H4	P35 × P30	3	5	4	3	1	5	3	1	7	1	3	2	3	5	5	1	1	1	1	5	5	3	
H5	P36 × P30	4	5	4	3	1	5	3	2	7	1	3	2	3	5	5	1	1	1	1	5	5	3	
H6	P37 × P30	3	7	2	3	1	7	5	1	7	5	3	1	3	5	5	4	1	5	1	5	5	4	
H7	P38 × P30	3	5	4	3	1	7	5	1	7	5	3	1	3	5	5	2	2	5	1	5	5	3	
H8	P40 × P30	3	5	4	7	1	7	3	1	5	5	3	2	3	5	5	4	1	3	1	5	5	3	
H9	P30 × P34	3	5	4	3	1	5	7	2	5	5	3	1	3	5	5	1	2	3	1	5	5	3	
H10	P30 × P31	3	7	4	3	1	7	3	1	7	5	5	2	3	3	5	4	1	3	1	5	5	3	
H11	P30 × P32	4	5	4	7	2	7	3	1	7	1	3	2	3	5	5	1	1	1	1	3	5	3	
H12	P40 × P31	3	5	2	3	4	7	5	2	7	5	5	2	3	7	5	4	1	5	1	7	5	3	
H13	P40 × P32	3	7	4	3	1	7	5	2	3	5	5	2	3	7	5	1	1	3	1	5	5	3	
H14	P40 × P33	4	5	4	3	1	7	7	2	5	5	5	2	3	7	5	1	2	1	1	5	5	3	
H15	P40 × P34	3	5	4	3	1	7	7	2	5	5	5	1	3	7	5	4	3	5	1	5	5	3	
H16	P40 × P35	3	5	4	3	1	5	3	1	3	5	5	2	3	7	5	4	1	3	1	5	5	3	
H17	P40 × P36	3	7	4	3	1	7	5	1	5	5	3	2	3	7	5	4	1	3	1	3	5	3	
H18	P40 × P37	3	7	4	3	4	7	7	2	3	5	5	1	3	7	5	3	1	5	2	7	3	3	
H19	P40 × P38	3	7	4	3	1	7	5	1	5	5	5	1	3	7	5	3	2	5	1	5	5	3	
H20	P41 × P34	3	7	4	3	1	7	7	1	7	5	3	1	3	7	5	3	2	5	2	7	3	2	
H21	P32 × P31	3	7	4	3	1	7	3	1	7	5	5	2	3	7	5	1	1	1	1	5	3	3	
H22	P31 × P33	4	7	4	3	1	7	5	1	5	5	3	1	3	5	5	1	2	1	2	7	5	3	
H23	P31 × P32	3	7	4	3	1	7	3	1	7	1	3	2	3	5	5	3	1	3	1	5	5	3	
H24	P37 × P35	3	7	4	3	1	5	5	1	5	1	3	1	3	5	5	1	1	1	1	5	3	3	
H25	P38 × P35	3	7	4	3	1	7	5	1	5	5	3	1	3	5	5	2	1	1	1	3	5	3	
H26	P40 × P35	3	7	4	3	1	7	3	1	7	5	5	2	3	7	5	2	2	3	1	3	5	3	
H27	P36 × P35	3	5	2	3	1	7	3	1	7	5	5	1	3	7	4	1	1	1	1	5	5	3	
H28	P37 × P40	3	5	4	3	4	7	7	1	5	5	5	1	3	7	5	4	1	5	2	7	3	3	
H29	P37 × P36	3	7	4	5	1	7	5	1	5	5	3	2	3	5	5	3	1	5	1	7	5	4	
PROGENITORS																								
P30	RK-01	4	7	4	3	1	5	3	1	7	5	3	2	3	3	5	1	1	1	1	5	5	3	
P31	RC-02	4	7	2	3	2	5	3	1	5	5	5	2	3	3	5	4	1	5	1	5	5	4	
P32	RN-03	3	5	4	3	1	7	1	1	7	1	3	2	3	7	5	1	1	1	1	5	5	3	
P33	RJ-04	3	5	4	3	4	7	7	1	5	1	3	2	3	5	5	1	3	1	2	5	5	3	
P34	RS-05	3	5	4	7	1	7	7	2	5	5	5	1	3	5	5	3	3	1	2	5	3	4	
P35	NB-06	3	5	4	3	1	5	1	1	7	5	3	2	3	7	4	1	1	1	1	5	3	4	
P36	NK-07	3	5	4	3	1	7	3	1	7	1	3	2	3	7	4	1	1	1	1	3	5	3	
P37	AK-08	4	7	3	3	1	7	5	1	5	5	3	1	3	5	2	3	1	3	2	7	5	3	
P38	AS-09	3	5	4	3	2	7	5	1	5	5	5	1	3	5	2	1	2	5	1	3	5	3	
P40	MB-11	3	7	4	3	2	7	7	1	5	5	3	1	3	7	6	4	1	5	1	5	7	3	

P41	MS-12	3	5	4	3	1	7	5	1	7	5	3	1	3	7	6	2	2	5	2	5	5	3
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NFA: Number of flowers per axil, FP: Flower position, CC0: Corolla color, CA: Color of anthers, FC: Filament color, STE: Stigma exsertion, ACN: Anthocyanin coloration of nodes, SS: Stem shape, IGC: Intensity of Green color, LS: Leaf shape, TL: Texture of leaf blade, LP: Leaf position, LBM: Leaf blade margin. IFC: Immature fruit color, RFC: Ripe fruit color, FS: Fruit shape, FST: Fruit surface texture, FSA: Fruit shape of apex, MC: Margin of calyx, FUS: Fruit undulation in cross section, DPF: Density of placenta of fruit, NL: Number of loculi. Please consult the classification code in Table 2.

Table S2. Pearson correlation matrix for the 18 quantitative descriptors of 29 F1 lines and 11 progenitors of habanero pepper.

	G	PH	SL	SD	LLB	LWB	LLP	DFL	DFR	FL	FWI	FW	FWT	FPL	FTP	NSF	FYP	CC
G	1																	
PH	0.069	1																
SL	0.225	0.398*	1															
SD	-0.150	0.496**	-0.277	1														
LLB	0.051	0.200	-0.012	0.498**	1													
LWB	-0.110	0.176	0.067	0.253	0.783**	1												
LLP	0.123	0.412**	0.027	0.300	0.495**	0.426**	1											
DFL	0.084	0.316*	-0.117	0.523**	0.373*	0.169	0.124	1										
DFR	-0.110	-0.028	-0.236	-0.089	-0.024	0.057	0.188	0.023	1									
FL	-0.004	-0.206	0.087	-0.233	0.050	0.286	-0.116	-0.315*	-0.183	1								
FWI	-0.042	-0.097	-0.327*	0.196	0.020	-0.188	-0.133	0.387*	-0.042	-0.529**	1							
FW	-0.170	-0.287	-0.435**	0.134	0.024	0.038	-0.260	0.069	-0.110	-0.035	0.642**	1						
FWT	-0.254	-0.268	-0.219	0.003	-0.019	-0.067	-0.248	0.248	0.139	-0.390*	0.580**	0.490**	1					
FPL	0.049	0.224	0.024	0.231	0.146	0.114	0.145	0.102	-0.152	-0.003	0.026	-0.012	-0.210	1				
FTP	0.160	0.021	-0.315*	0.261	0.301	0.035	0.220	0.211	0.187	-0.508**	0.461**	0.325*	0.304	0.012	1			
NSF	0.074	-0.278	-0.084	-0.138	-0.124	-0.057	0.028	0.036	-0.072	-0.274	0.476**	0.482**	0.381*	-0.012	0.299	1		
FYP	-0.305	0.237	-0.180	0.722**	0.504**	0.445**	0.180	0.364*	-0.036	-0.036	0.130	0.197	0.281	-0.142	0.148	-0.116	1	
CC	0.236	0.557**	0.389*	0.156	0.179	0.090	0.333*	0.014	-0.079	0.084	-0.376*	-0.492**	-0.620**	0.102	0.013	-0.250	-0.066	1

* Correlation is significant at the 0.05 level (2-tailed), ** Correlation is significant at the 0.01 level (2-tailed). G: Germination, PH: Plant height, SL: Stem length, SD: Stem diameter, LLB: Leaf length of blade, LWB: Leaf width of blade, LLP: Leaf length of petiole, DFL: Days to flowering, DFR: Days to fruiting, FL: Fruit length, FWI: Fruit width, FW: Fruit weight, FWT: Fruit wall thickness, FPL: Fruit pedicel length, FTP: Thickness the pedicel of the fruit, NSF: Number of seeds per fruit, FYP: Fruit yield/plant, CC: Capsaicin content.