

Supplementary Materials

Supplementary Material S1. Mean, max and min monthly air temperature (°C), monthly total precipitation (mm) and average monthly wind speed (km h⁻¹) during cultivation (May-October 2017).

Month	Mean air temperature (°C)	Max air temperature (°C)	Min air temperature (°C)	Precipitation (mm)	Average wind speed (km h ⁻¹)
May	21.7	34.5	14	57.2	4.2
June	26.2	41.3	16.9	69.2	2.9
July	29.7	41.1	19.8	7.4	6.0
August	29.7	38.3	20.9	1.4	7.3
September	25.1	36.5	17.3	20	3.7
October	19.4	27.4	12.7	6.6	3.4

Supplementary Material S2. Time of flowers opening per accession for each observation date.

Accessions	13/7	19/7	20/7	27/7	31/7	3/8	5/8	9/8	18/8	29/8	5/9
IT97K-499-35				7:50	7:30	7:45	7:50	8:20	8:00	8:00	7:30
VG2	7:30	7:45	7:40	7:00	7:00		7:40	8:05	7:30	8:00	8:00
VG21		7:48	7:50	8:20	7:15		7:50	8:15	7:50	8:00	8:10
Vg60	8:00	7:45	8:15	8:15	7:15		7:50	8:10	7:50	8:00	8:15
BGE038478							8:25	8:15	7:30	8:00	7:30
BGE038479			7:15			7:40	10:45	8:15	7:45	8:00	7:30

Supplementary Material S3. Time of flowers closure per accession for each observation date.

Accessions	13/7	19/7	20/7	27/7	31/7	3/8	5/8	9/8	18/8	29/8	5/9
IT97K-499-35				10:20	10:20	10:15	10:30	11:00	10:00	10:00	10:20
VG2	13:30	13:30	10:20	10:20	10:00		10:40	11:30	9:50	10:00	10:00
VG21		13:30	10:30	10:30	10:20		11:45	11:00	10:20	10:30	10:20
Vg60	13:30	13:30	10:10	10:10	10:15		11:00	11:15	10:15	10:30	10:15
BGE038478							11:10	11:00	10:30	10:30	10:30
BGE038479			10:30			11:20	11:30	11:10	10:25	10:30	10:30

Supplementary Material S4. Mean number of open flowers per plant for each accession and observation date. Means \pm SE in columns with different letters are significantly different at the 0.05 level, by *Tukey's* HSD means comparison method.

Accessions	13/7	19/7	20/7	27/7	31/7	3/8	5/8	9/8	18/8	29/8	5/9
IT97K-499-35				2.17 \pm 0.54	1.75 \pm 0.25	2.00 \pm 0.01a	1.67 \pm 0.17b	2.67 \pm 0.67	1.67 \pm 0.33b	1.40 \pm 0.24	2.57 \pm 0.37
VG2	1.00 \pm 0.01	1.80 \pm 0.58	1.33 \pm 0.33	1.29 \pm 0.12	1.58 \pm 0.36		2.42 \pm 0.20ab	2.00 \pm 0.01	3.00 \pm 0.01a	2.00 \pm 0.01	2.00 \pm 0.01
VG21		2.14 \pm 0.63	1.93 \pm 0.25	2.00 \pm 0.31	1.94 \pm 0.31		2.91 \pm 0.21a	2.50 \pm 0.38	2.00 \pm 0.01ab	2.56 \pm 0.22	3.00 \pm 0.01
Vg60	2.00 \pm 0.40	1.86 \pm 0.34	1.44 \pm 0.24	1.50 \pm 0.29	2.08 \pm 0.42		2.81 \pm 0.19a	2.25 \pm 0.25	2.00 \pm 0.01ab	3.00 \pm 0.33	1.50 \pm 0.29
BGE038478							1.50 \pm 0.50b	2.00 \pm 0.01	2.00 \pm 0.01ab	2.59 \pm 0.20	2.50 \pm 0.50
BGE038479			1.00 \pm 0.01			1.00 \pm 0.01b	2.00 \pm 0.01ab	1.83 \pm 0.17	1.75 \pm 0.25b	2.42 \pm 0.17	2.00 \pm 0.15
Level of significance	ns	ns	ns	ns	ns	***	**	ns	*	ns	ns

ns non-significant difference

* Statistically significant difference at a level 0.05

** Statistically significant difference at a level 0.01

*** Statistically significant difference at a level 0.001

Supplementary Material S5. Design flower petal traits studied for each accession and coefficients of variation (CV%) for each accession and trait. Means \pm SE in columns with different letters are significantly different at the 0.05 level, by *Tukey's* HSD means comparison method.

Accessions	SPL (cm)	SPW (cm)	SPA (cm ²)	SPP (cm)	SPAN (°)	FTUBL (cm)	KL (cm)	KW (cm)	KP (cm)	KOP (cm)	KAN (°)	SPL/SPW	SPL/KL
IT97K-499-35	2.25 \pm 0.02bc	1.17 \pm 0.02a	557.34 \pm 10.49b	6.77 \pm 0.06ab	62.51 \pm 1.06ab	1.14 \pm 0.02cd	2.07 \pm 0.02ab	1.17 \pm 0.01ab	6.19 \pm 0.05ab	0.74 \pm 0.01	126.38 \pm 1.12	1.94 \pm 0.03d	1.10 \pm 0.02b
CV%	10.06	11.13	15.17	6.89	13.50	15.15	6.31	8.85	5.88	9.53	7.13	13.04	13.27
VG2	2.11 \pm 0.01d	1.04 \pm 0.01c	515.99 \pm 6.95c	6.79 \pm 0.05ab	60.77 \pm 0.57bc	1.10 \pm 0.01d	2.07 \pm 0.01ab	1.19 \pm 0.01ab	6.14 \pm 0.03bc	0.71 \pm 0.01	125.93 \pm 0.96	2.06 \pm 0.03bc	1.03 \pm 0.01c
CV%	6.14	11.39	11.89	6.53	8.35	9.83	5.21	7.69	4.54	12.15	6.70	11.10	9.11
VG21	2.21 \pm 0.02c	1.03 \pm 0.01c	568.43 \pm 7.65b	6.90 \pm 0.05a	61.72 \pm 0.54b	1.22 \pm 0.02ab	2.12 \pm 0.01a	1.21 \pm 0.01a	6.25 \pm 0.03a	0.72 \pm 0.01	127.22 \pm 0.92	2.18 \pm 0.03a	1.05 \pm 0.01c
CV%	6.22	12.34	12.04	6.44	7.77	16.53	4.57	6.89	3.85	9.34	6.36	13.37	8.96
Vg60	2.26 \pm 0.01bc	1.09 \pm 0.01b	603.31 \pm 8.04a	6.65 \pm 0.05bc	64.60 \pm 0.64a	1.19 \pm 0.02bc	2.07 \pm 0.02b	1.16 \pm 0.01b	5.97 \pm 0.04d	0.70 \pm 0.01	129.70 \pm 0.99	2.07 \pm 0.03b	1.10 \pm 0.01b
CV%	5.65	11.83	11.91	6.46	8.80	12.32	6.55	7.96	5.30	9.13	6.80	10.86	8.03
BGE038478	2.35 \pm 0.02a	1.22 \pm 0.01a	575.68 \pm 7.37ab	6.54 \pm 0.05c	58.99 \pm 70.58c	1.27 \pm 0.02a	2.04 \pm 0.01b	1.16 \pm 0.01b	6.02 \pm 0.03d	0.72 \pm 0.01	128.27 \pm 1.16	1.93 \pm 0.02d	1.16 \pm 0.01a
CV%	6.41	8.94	11.45	6.65	8.28	11.49	6.46	7.66	4.90	13.01	8.07	8.47	8.96
BGE038479	2.31 \pm 0.02ab	1.19 \pm 0.01a	549.35 \pm 8.19b	6.51 \pm 0.05c	60.73 \pm 0.58bc	1.24 \pm 0.02ab	2.06 \pm 0.01b	1.17 \pm 0.01b	6.05 \pm 0.02cd	0.71 \pm 0.01	126.62 \pm 1.08	1.96 \pm 0.02cd	1.12 \pm 0.01ab
CV%	6.54	8.58	12.82	6.18	8.01	12.81	5.64	6.41	4.94	10.76	7.26	10.08	7.95
Level of significance	***	***	***	***	***	***	**	**	***	ns	ns	***	***

ns non-significant difference; ** Statistically significant difference at a level 0.01; *** Statistically significant difference at a level 0.001

SPL. maximum standard petal length; SPW. standard petal width; SPA. standard petal area; SPP. standard petal perimeter; SPAN. standard petal angle; FTUBL. floral-tube length; KL. keel petal length; KW. keel petal width; KP. keel petal perimeter; KOP. keel opening; KAN. keel angle; SPL/SPW. maximum standard petal length/ standard petal width ratio; SPL/KL. maximum standard petal length/ keel petal perimeter ratio

Supplementary Material S6. Design flower's sexual dimension and male and vector matching traits studied for each accession and coefficients of variation (CV%) for each accession and trait. Means \pm SE in columns with different letters are significantly different at the 0.05 level, by *Tukey's* HSD means comparison method.

Accessions	STL (cm)	OL (cm)	SL (cm)	SOA (°)	ON
IT97K-499-35	0.767 \pm 0.012b	1.995 \pm 0.029ab	0.786 \pm 0.012a	104.59 \pm 1.68c	10.13 \pm 0.34bc
CV%	12.89	11.92	12.34	14.39	26.36
VG2	0.764 \pm 0.011b	1.986 \pm 0.026ab	0.765 \pm 0.009ab	105.21 \pm 1.25bc	10.63 \pm 0.33ab
CV%	12.28	11.33	10.75	12.19	26.03
VG21	0.819 \pm 0.011a	2.029 \pm 0.021a	0.790 \pm 0.011a	105.67 \pm 1.26bc	11.44 \pm 0.28a
CV%	12.14	9.44	13.00	11.47	20.55
Vg60	0.768 \pm 0.015b	1.931 \pm 0.028ab	0.739 \pm 0.012b	111.49 \pm 1.72ab	10.01 \pm 0.33bc
CV%	17.31	13.18	13.90	15.12	28.51
BGE038478	0.781 \pm 0.011ab	1.882 \pm 0.029b	0.737 \pm 0.011b	114.35 \pm 1.89a	9.26 \pm 0.32c
CV%	12.40	13.83	13.59	15.25	29.49
BGE038479	0.774 \pm 0.013ab	1.966 \pm 0.030ab	0.724 \pm 0.012b	110.44 \pm 1.81abc	9.41 \pm 0.30bc
CV%	14.02	12.83	13.48	17.11	25.91
Level of significance	**	**	***	***	***

** Statistically significant difference at a level 0.01, *** Statistically significant difference at a level 0.001
STL. stamen length; OL. ovary length; SL. style length; SOA. ovary-style angle; ON. number of ovules