

TABLE S3

Phenotypic variation of the two parents (Tapidor and Ningyou 7) and two populations (DH and RC-F2) for seed yield and eight yield-associated traits in ten microenvironments

Environment			Branch	Biomass	Flowering	Maturity	Plant	Pod	Seed	Seed	Seed	
Macro	Micro	Material	number	yield (kg/ha)	time (days)	time (days)	height (cm)	number	number	weight (g)	yield (kg/ha)	
Winter	N3	Tapidor	11.0	/	201.0	253.0	155.0	573.0	12.0	2.78	1938	
		Ningyou7	9.0	/	195.0	249.0	134.0	395.0	11.0	3.27	1416	
		$P_{t\ test}$	0.035	/	0.001	0.004	0.003	0.006	0.144	0.020	0.050	
		DH range	7.3-14.1	/	192-205	248-255	114-180	395-861	9.2-18.8	2.45-4.8	1470-4000	
	N4	Tapidor	8.0	/	198.0	252.0	156.0	545.0	17.1	2.14	2000	
		Ningyou7	7.0	/	190.0	239.0	133.0	416.0	15.0	2.41	1513	
		$P_{t\ test}$	0.144	/	0.001	0.000	0.002	0.017	0.019	0.039	0.059	
		DH range	5.1-10.9	/	187.3-202	236-250	103-155	272-823	9.1-22.6	1.81-4.24	520-3240	
	N6	Tapidor	9.4	4950	198.0	254.0	126.7	393.0	24.3	2.87	2613	
		Ningyou7	7.3	4101	192.0	246.0	106.1	272.0	21.2	3.59	2120	
		$P_{t\ test}$	0.031	0.053	0.000	0.000	0.004	0.021	0.010	0.006	0.057	
		DH range	4.8-11.4	2550-7300	190.3-203	246-255.3	96.2-137.4	268-655	12.1-29.3	2.69-4.36	1230-3540	
		RC-F ₂ range	5.2-12	3240-7720	189.3-200	245-253	109.5-155.6	223-610	15.4-31.3	2.58-4.52	1460-4390	
	N7	Tapidor	/	/	194.0	245.0	/	/	/	/	2200	
		Ningyou7	/	/	179.0	235.0	/	/	/	/	1809	
		$P_{t\ test}$	/	/	0.000	0.000	/	/	/	/	0.093	
		DH range	/	/	176.7-198	234.7-247.7	/	/	/	/	920-3350	
	Semi-winter	S3	Tapidor	3.00	/	173.00	222.00	97.00	200.00	7.10	2.57	563

	Ningyou7	8.00	/	165.00	213.00	120.00	360.00	10.00	3.43	1228
	$P_{t\ test}$	0.018	/	0.000	0.000	0.002	0.009	0.012	0.003	0.008
	DH range	3.2-11.2	/	157-174	211-222	90.7-149.7	145-596	4.6-22.7	2.18-4.92	370-3140
S4	Tapidor	5.0	/	173.0	224.0	124.0	243.0	10.6	2.60	1050
	Ningyou7	12.0	/	154.0	213.0	156.0	477.0	12.6	3.20	2233
	$P_{t\ test}$	0.005	/	0.000	0.000	0.001	0.002	0.035	0.011	0.001
	DH range	5-12.9	/	151.3-172.7	214-223	122.4-183.8	153-755	7.7-18	2.15-4.3	670-3650
S5	Tapidor	6.1	/	183.2	228.3	126.9	200.0	14.8	2.70	1039
	Ningyou7	8.0	/	177.8	224.3	144.3	334.0	16.9	3.75	1445
	$P_{t\ test}$	0.040	/	0.001	0.004	0.007	0.015	0.031	0.002	0.034
	DH range	4.7-8.9	/	175.1-183.9	223.4-231.8	116.4-165.3	171-466	10.5-21.6	2.18-4.85	910-1820
	RC-F ₂ range	4.8-11.1	/	173-184	223.3-231	113.8-176.3	133-510	12-24.7	2.36-4.21	680-2480
S6	Tapidor	4.9	2939	167.7	216.3	119.6	236.0	12.0	2.88	881
	Ningyou7	6.0	3617	158.0	212.3	141.8	404.0	13.7	3.94	1191
	$P_{t\ test}$	0.125	0.086	0.000	0.004	0.003	0.007	0.053	0.001	0.065
	DH range	3.1-9.3	1570-4980	155.7-169	210.7-217	107.1-159.7	104-441	5.8-21.4	2.46-4.71	370-1840
	RC-F ₂ range	3.4-7.9	2100-5790	156.7-167.3	210.5-216.3	118.6-164.8	160-658	9-21.6	2.82-4.41	720-2290
S7	Tapidor	/	/	170.3	220.7	/	/	/	2.65	1364
	Ningyou7	/	/	151.7	211.7	/	/	/	3.24	2292
	$P_{t\ test}$	/	/	0.000	0.000	/	/	/	0.011	0.021
	DH range	/	/	149.3-175	209.7-222	/	/	/	2.27-4.48	430-2180
E7	Tapidor	/	/	178.7	230.3	/	/	/	2.57	935
	Ningyou7	/	/	157.3	222.0	/	/	/	3.50	1894
	$P_{t\ test}$	/	/	0.000	0.000	/	/	/	0.002	0.005
	DH range	/	/	154-179	221-234	/	/	/	2.1-4.03	650-3520