

TABLE S5

ANOVA for seed yield and eight yield-associated traits in two (DH and RC-F<sub>2</sub>) populations

Population		DH					RC-F <sub>2</sub>				
Trait	Source	DF	SS	MS	F value	P value	DF	SS	MS	F value	P value
Branch number	Genotype	201	1169	5.8	9.7	<.0001	401	1613.0	4.0	2.0	<.0001
	Environment	6	7927	1321.2	1332.3	<.0001	2	8433.0	4216.5	3100.9	<.0001
	Genotype×Environment	1184	2326	2.0	2.0	<.0001	624	1047.7	1.7	1.2	0.0005
	Error	2508	2487	1.0			1826	2483.0	1.4		
Biomass yield	Genotype	199	388523054	1952377.2	17.4	<.0001	381	531151441.0	1394098.0	16.5	<.0001
	Environment	1	295539331	295539331.3	2636.4	<.0001	1	1163276003.0	1163276003.0	13792.7	<.0001
	Genotype×Environment	191	172296307	902074.9	8.1	<.0001	354	206541744.0	583451.0	6.9	<.0001
	Error	701	78580537	112097.8			1262	106436833.0	84340.0		
Flowering time	Genotype	201	35333	175.8	81.5	<.0001	401	6338.9	15.8	24.5	<.0001
	Environment	9	939572	104396.9	48413.0	<.0001	2	567938.0	283969.0	440436.0	<.0001
	Genotype×Environment	1768	22288	12.6	5.9	<.0001	624	1186.6	1.9	3.0	<.0001
	Error	3095	6674	2.2			1703	1098.0	0.6		
Maturing time	Genotype	201	7474	37.2	29.6	<.0001	401	5551.2	13.8	4.5	<.0001
	Environment	9	880368	97818.7	47461.0	<.0001	2	608538.7	304269.3	132345.0	<.0001
	Genotype×Environment	1766	9912	5.6	2.7	<.0001	624	2079.7	3.3	1.5	<.0001
	Error	3320	6843	2.1			1756	4037.2	2.3		
Plant height	Genotype	201	130804	650.8	6.5	<.0001	401	113259.4	282.4	3.4	<.0001
	Environment	6	632319	105386.5	1045.2	<.0001	2	89142.9	44571.4	629.1	<.0001
	Genotype×Environment	1186	186414	157.2	1.6	<.0001	624	53600.7	85.9	1.2	0.0014
	Error	2152	216992	100.8			1823	129166.5	70.9		
Pod number	Genotype	201	8270051	41144.5	4.3	<.0001	400	6303608.1	15759.0	2.9	<.0001
	Environment	6	57791435	9631905.8	1073.3	<.0001	2	5091228.7	2545614.4	678.6	<.0001
	Genotype×Environment	1173	20766750	17704.0	2.0	<.0001	613	4689018.5	7649.3	2.0	<.0001
	Error	2248	20174602	8974.5			1358	5094460.3	3751.4		

Seed number	Genotype	201	11066	55.1	9.6	<.0001	401	13595.8	33.9	3.4	<.0001
	Environment	6	38039	6339.8	1209.3	<.0001	2	38737.2	19368.6	3737.4	<.0001
	Genotype×Environment	1181	13462	11.4	2.2	<.0001	621	5581.1	9.0	1.7	<.0001
	Error	2369	12419	5.2			1578	8177.9	5.2		
Seed weight	Genotype	201	286	1.4	39.5	<.0001	401	166.5	0.4	11.4	<.0001
	Environment	8	268	33.6	612.2	<.0001	2	33.1	16.6	497.5	<.0001
	Genotype×Environment	1567	236	0.2	2.8	<.0001	624	52.2	0.1	2.5	<.0001
	Error	3218	176	0.1			1693	56.4	0.0		
Seed yield	Genotype	201	141383980	703402.9	9.4	<.0001	401	110176613.0	274754.6	12.0	<.0001
	Environment	9	1035168307	115018700.8	766.7	<.0001	2	1339025550.0	669512775.0	18526.8	<.0001
	Genotype×Environment	1764	661816230	375179.3	2.5	<.0001	620	127299722.0	205322.1	5.7	<.0001
	Error	3600	540043056	150012.0			1670	60349698.0	36137.5		