

**Table S8 Segregation patterns for QTLs identified from: (A) linkage analysis; (B) selected regions during twelve intercross rounds; (C) haploid heat selection and (D) diploid heat selection.** In the “Alleles” column a single allele indicate the allele with different fitness compared to the other three in the 1:3 segregation mode; a pair of alleles with symbol “&” in between, indicates alleles with equal fitness in the 2:2 segregation mode (also the other two have equal fitness); pair of alleles with symbol “-” indicates the alleles with distinct fitness effect in multi-allelic segregation mode (1:1:2 – 1:2:1 or 2:1:1).

**A. Linkage Analysis**

Phenotype	Chrom	Peak	Growth trait	AIC Weight														P-value	Alleles
				NA-vs-WA, WE, SA,	WA-vs-NA, WE, SA	WE-vs-NA, WA, SA	SA-vs-NA, WA, WE	NA, WA-vs-WE, SA	NA, WE-vs-WA, SA	NA,SA-vs-WA,WE	NA-vs-WE,WA,SA	NA-vs-WE,WA,SA	NA-vs-WE,WA,SA	NA-vs-WE,WA,SA	NA-vs-WE,WA,SA	NA-vs-WE,WA,SA	NA-vs-WE,WA,SA		
Arsenite	II	752324	rate	1.5	-9.3	1.1	0.4	-2	-0.1	-1.1	-8.4	0.9	-0.2	-8.3	-8.4	-1	-7.4	1.20E-05	WA
Arsenite	IV	1247236	lag	-2.7	-0.3	-6.2	1.5	-7.8	1.9	0.2	-6.8	-7.1	-1.9	-6.4	0.6	-9.9	-9	1.00E-05	WA-SA
Arsenite	IV	1516800	lag	1.9	-6.9	1.3	-1.1	-4	1.8	0	-7.3	2.3	-0.4	-5.9	-6.9	-3.1	-6.5	1.30E-04	NA-WA
Arsenite	V	102405	rate	-0.1	-7.2	2	1.9	2	-1.1	0.5	-7.2	-0.4	0.6	-6.3	-6.9	2.9	-6.3	1.00E-04	WA
Arsenite	VI	23330	rate	1.8	-0.1	-7.8	2	-0.6	0	1.6	-0.2	-6.8	2.6	-7.8	0.2	-7.1	-6.8	7.80E-05	WA-WE
Arsenite	VII	7936	rate	2	0.4	-8.6	1	0.5	-3.5	0.6	1.2	-7.8	1.6	-8	-2.7	-7.6	-7	1.60E-04	NA-WA
Arsenite	XI	68139	rate	0.9	-7.3	1.9	1	0.1	0.9	-0.4	-6.9	1.1	0.5	-7.5	-6.8	0.5	-6.5	1.10E-04	WA-WE
Arsenite	XII	981727	rate	1.5	-6.1	1.5	-6.7	-6	1.1	-6.8	-6.1	1.9	-6.7	-5.8	-6.6	-5.7	-5.8	1.30E-04	SA
Arsenite	XIII	346821	rate	0.9	-1.3	-7.2	1.9	-4.9	-1.4	0.6	-4.2	-6.3	1.5	-6.8	-0.9	-6.5	-5.9	9.70E-05	WE
Arsenite	XIII	861124	rate	-6.7	1.4	-0.2	1.4	-1.7	0.2	-2.1	-5.9	-6	-5.8	-1.4	1.2	-0.8	-5	1.60E-04	NA
Arsenite	XIV	560654	rate	0.8	1.8	-6.2	-0.6	0.4	-1.1	-3.1	1.1	-5.3	-2.1	-6.2	-0.8	-5.7	-5.2	3.30E-04	WE
Arsenite	XIV	644582	lag	1.6	2	-10.2	1.9	1.3	1.7	1.3	2.1	-9.4	2.3	-9.3	2.7	-9.2	-8.4	2.70E-04	WE
Arsenite	XV	173494	lag	1.4	1.7	-5.9	1.6	2	2	0.4	2.4	-5.2	1.4	-5.7	2.5	-5.1	-4.7	4.90E-06	WE
Arsenite	XV	944695	rate	-5.7	0.9	1.9	-0.5	-0.8	-3.4	0.8	-4.7	-5	-4.8	1.6	-2.4	-0.1	-4	4.60E-04	NA
Arsenite	XVI	342504	lag	-6.8	-1.7	0.5	1.8	1.5	0.6	-5.5	-7.4	-5.9	-8.2	-4.9	-0.8	1.5	-7.6	5.30E-05	NA-SA
Arsenite	XVI	72835	rate	0.4	1.2	-6.4	0.9	-1.3	-0.6	-1.8	-0.3	-5.4	-0.8	-5.4	0.4	-5.4	-4.4	2.30E-	WE

Heat	II	99632	rate	1.9	-0.2	-6.8	-0.1	-0.2	-4.3	-0.3	0.3	-6.4	0.3	-6	-3.3	-5.8	-5.4	04 6.00E-04	WE
Heat	IV	669598	rate	-7	1.2	1.6	-1.5	-3.4	-3.6	0.8	-6.1	-6.5	-6.2	1.6	-2.6	-2.7	-5.5	1.20E-04	NA
Heat	XI	66234	lag	-14.2	2	-2	2	-5.2	2	-2.3	-13.7	-	-	-1.8	3	-4.4	-13	9.00E-08	NA
Heat	XIII	895642	lag	-1.4	-9.4	0.6	2	1.3	-5.1	-0.7	-9	-4.2	-1	-8.6	-9.8	1.5	-8.8	3.60E-05	WA
Heat	XIII	895642	rate	1	-8.2	1.1	1.3	-0.4	-0.8	-1	-7.2	0.2	0	-7.3	-7.2	0.6	-6.3	1.10E-05	WA-SA
Heat	XIV	665508	rate	-6.6	-0.2	1.8	1.7	1.1	-1	-1.4	-6.1	-6	-5.6	-1	-0.2	2.1	-5.2	1.90E-04	NA
Paraquat	III	212260	lag	-0.7	-0.8	-9	1.7	-5.3	-0.9	-2.1	-4.7	-8	-1.3	-8.6	-0.6	-8.3	-7.7	1.70E-05	WA
Paraquat	XIV	356878	lag	1.5	-7.3	2	-2.2	-1.3	1.6	-4.6	-6.4	2.4	-4.1	-7.4	-7.7	-1.7	-6.9	9.10E-05	WA-SA
Paraquat	VI	45521	rate	1.7	-1.2	1.2	-9	-1.9	0.3	-3.7	-1.4	1.3	-8.2	-3.3	-8.9	-8.3	-7.9	1.60E-05	SA

**B. Intercross**

Chromosome	Peak	LOD	Alleles
IV	699005	12.9	NA-WA
V	172739	13.1	NA-WA
VI	70206	12.8	WE
VIII	112561	10.2	WE-SA
XI	85720	13.1	WE
XII	444427	14.4	NA&WA
XV	171462	12.3	WE-SA
XV	385888	13.1	WA&WE
XVI	205083	14.1	WA-SA

### C. Heat Haploids

Chromosome	Peak	LOD	Alleles
I	41803	13.1	WA
II	192041	14.1	SA
II	387448	12.1	WA
II	520956	14	NA-WE
III	103983	14.1	NA&WA
IV	88326	12.9	WE&SA
IV	167026	14.8	WA
IV	193568	15.9	WE
IV	341596	15.2	SA
IV	482650	13.7	NA-WA
IV	594972	15.7	NA
IV	1165241	14.6	WA&WE
IV	1299590	14.7	NA&WA
IV	1424223	13.8	WE&SA
V	210929	15.1	SA
V	551439	15.3	NA&WA
VII	548507	13.9	WE
VIII	293911	14.5	WA
VIII	424239	13.2	WA-WE
X	236389	14.7	WA&WE
X	412413	13.9	NA-WE
XI	40024	15.3	WE
XII	209043	14.2	WA&SA
XIII	721067	14.7	WA
XIII	877042	13.2	WA
XIV	115349	13.6	NA
XIV	173831	15.5	WE
XIV	273491	15.1	SA
XIV	481655	14.5	NA&WE
XV	174678	11.8	NA-SA
XV	345603	14.9	NA
XV	837629	13.6	WA
XV	954035	14.6	WE
XVI	264571	15.5	SA

#### D. Heat Diploids

Chromosome	Peak	LOD	Alleles
I	8001	15.4	WA
II	241424	14.5	WE&SA
II	287551	13.8	WE
II	384879	13.7	NA-WA
II	510231	14.1	NA-WE
IV	78729	15.1	WA
IV	161585	15.3	WE
IV	301375	15.2	WA
IV	595513	14.6	WA&WE
IV	1043658	15.1	SA
IV	1136886	15.9	WE
IV	1293360	15	WE
IV	1433562	14.6	NA&WA
V	75659	15.4	WE
V	216732	14.2	WE
V	540523	15.3	WA
VII	12505	13.7	NA
VII	138161	13.7	SA
VII	349168	15.8	WE
VII	487208	14.3	SA
IX	132145	14.5	WE
X	216505	15.5	NA&SA
X	409187	13.9	WE-SA
XI	72599	16	WE
XI	183853	14.2	NA&WA
XII	204576	15.6	WE
XII	810266	15.7	NA
XIII	548998	15.8	WA&SA
XIV	114314	15.8	WE
XIV	159231	15.6	WE
XIV	481662	13.6	WA-SA
XV	162197	13.6	NA&SA
XV	369650	16	WA
XV	739495	13.5	SA
XV	837629	13.9	WA-WE
XV	1032774	14.1	WE
XVI	41379	14.3	SA
XVI	272770	14.7	SA
XVI	747555	15.5	WE&SA