



Table S1. Summary of phenotyping experiments with the Otomemochi × Yumenohatamochi population (OY).

Experiment	Experiment 1 (2011)	Experiment 2 (2012)
Number of lines	97 recombinant inbred lines (RILs)	
Experimental design	11 × 11 Latin square	
Replications	3	
Dates of sowing / transplanting	28 April / 23 May	24 April / 25 May
Plant density	20 cm × 20 cm hill space (1 plant per hill)	
Fertilizer management	Basal (13 May): 6 g/m ² N, 8 g/m ² P ₂ O ₅ , 9 g/m ² K ₂ O, Ca ₂ O ₄ Si Supplementary*: 2 g/m ² N	
Drought period	5 July – 3 September 68–128 DAS** (60 days; very severe)	19 July – 2 September 79–124 DAS** (45 days; severe)
Flowering period (control)	31 July – 24 August	23 July – 20 August /
(drought)	1 August – 25 September	28 July – 23 August
Last harvest date (control)	27 September	4 October
(drought)	22 October	4 November

*3 July 2011 (Experiment 1) and 5 July 2012 (Experiment 2); ** days after sowing

Table S2. Putative QTLs for drought response index (DRI) and production traits for the Otomemochi × Yumenohatamochi (OY) population. Experiment 1: 22 main-effect QTLs (control, 6; drought, 16). Experiment 2: 16 QTLs (control, 4; drought 12). Combined analysis: 12 QTLs (control, 4; drought, 8).

Experiment	Chr no.	Trait	Marker interval ^a	Position ^b	LOD ^c	R ² ^d	A ^e
Experiment 1	1	Total dry weight D	RM8147–RM6039	50.8	2.6	10.4	2.14
	2	DRI	RM3703–RM6911	37.4	5.9	19.9	2.24
		Grain dry weight after rewatering D	RM3703–RM6911	37.4	5.7	19.2	0.47
		Grain dry weight D	RM3703–RM6911	37.4	5.8	19.3	0.39
		Harvest index D	RM3703–RM6379	37.4	2.8	8.5	0.01
		Leaf rolling D	RM6933–RM3857	120.7	3.6	14.6	−0.88
		Plant height C	RM6911–RM6933	97.8	2.6	24.1	−4.00
	3	50% flowering C	~RM4853	0.0	3.1	10.6	−2.14
		Grain dry weight before rewatering D	RM1332–RM3029	25.0	5.4	18.2	0.25
		Harvest index D	RM1332–RM3029	21.0	3.5	22.2	0.02
		Harvest index D	RM3029–RM3872	34.0	3.3	11.1	0.02
		Plant height reduction D	RM1332–RM3872	25.0	2.8	8.2	−2.37
Experiment 2	4	Flowering delay D	RM3288–RM5503	91.6	2.7	18.8	4.99
	5	Grain dry weight C	~RM2010–RM4501	8.5	3.0	35.5	−3.52
		Harvest index D	RM4501–RM3476	96.5	3.2	11.5	−0.02
		Plant height C	~RM2010	1.5	4.5	20.9	−3.77
		Plant height reduction D	~RM2010	1.5	8.6	35.9	−4.74
	6	Root dry weight C	RM2615–RM7023	46.0	2.5	11.8	−0.39
	7	Plant height D	~RM5711	10.5	3.3	14.0	2.32
		Total dry weight D	RM1353–RM6767	50.8	2.7	10.6	2.15
	11	50% flowering C	RM536–RM206	68.6	2.9	9.4	−1.98
	12	Leaf rolling D	~RM247	8.0	4.0	46.4	1.65

Experiment	Chr no.	Trait	Marker interval ^a	Position ^b	LOD ^c	R ² ^d	A ^e
Experiment 2	1	Harvest index D	RM5919–RM1297	111.6	2.8	9.2	−0.03
		Leaf rolling D	RM3475–RM6696	117.1	3.9	11.8	0.48
	2	Leaf rolling D	RM6379–RM3857	122.7	2.9	12.0	−0.48
	3	50% flowering C	~RM4853	1.5	3.4	14.5	−2.44
		Grain dry weight D	RM1332–RM3029	24.5	2.8	9.8	1.09
		Plant height C	RM6676–RM3525	97.1	2.5	12.7	3.41
	4	Leaf rolling D	RM1388–RM5503	91.1	3.7	18.7	−0.59
	5	50% flowering D	~RM2010–RM4501	10.0	3.4	36.1	−4.01
	6	DRI	RM8120–RM7023	31.0	3.6	12.4	−0.90
		Grain dry weight D	RM8120–RM7023	31.0	3.7	12.2	−1.16
		Grain dry weight D	RM6734–RM5509	105.8	2.5	8.3	0.96
		Harvest index D	RM6734–RM5814	105.8	2.5	8.3	0.03
	7	Plant height reduction D	RM5508–RM1362	104.8	2.6	9.9	4.24
	10	Grain dry weight C	RM216–RM467	34.3	3.7	16.7	2.42
		Total dry weight C	RM216–RM467	35.3	3.9	14.8	4.82
	11	Plant height D	RM287–RM209	68.6	4.5	16.3	−4.38
Experiments 1 and 2 (combined)	2	DRI	RM3703–RM6379	40.4	5.1	26.3	1.42
		DRI	RM6733–RM3850	151.5	3.3	10.3	−0.87
	3	Leaf rolling D	RM6379–RM6933	119.2	6.5	22.2	−0.67
		50% flowering C	~RM4853	1.0	3.3	12.8	−2.25
		50% flowering D	~RM4853	0.0	2.7	8.8	−2.53
		Grain dry weight D	RM1332–RM3029	24.5	3.8	13.3	0.67
		Harvest index D	RM1332–RM3029	25.0	4.1	13.0	0.02
	5	50% flowering C	~RM2010–RM4501	16.5	3.6	40.7	−3.89
		50% flowering D	~RM2010	1.0	2.5	9.6	−2.62
	6	Grain dry weight D	RM8120–RM7023	31.0	2.6	8.5	−0.52
	7	Grain dry weight C	RM5508–RM1362	103.8	2.5	10.4	1.62
	11	50% flowering C	RM536–RM206	68.6	3.2	10.3	−1.96

D: QTL found under drought. C: QTL found in the control. ~: chromosome short arm tip. ^a Markers flanking the region of 1-LOD confidence interval. ^b Position of LOD peak in centimorgans from the short arm of the chromosome. ^c Peak LOD score obtained from composite interval mapping. ^d Percentage of phenotypic variance explained by the given QTL. ^e Positive (negative) value indicates a positive (negative) effect of Yumenohatamochi (Otomemochi) allele on the trait.