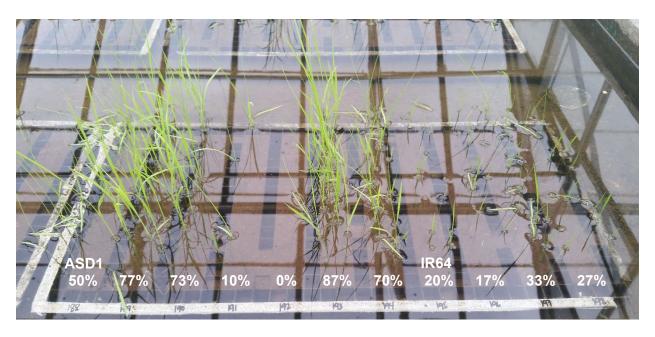
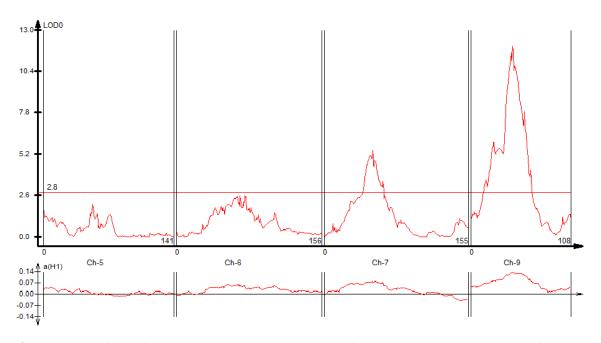
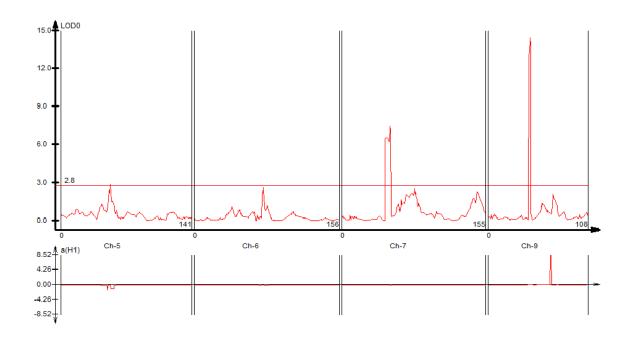
## **Supplementary Materials**



**Figure S1.** Representative tray showing different levels of survival rates of IR64 (20%), ASD1 (50%), and 9 of their  $F_{2:3}$  progenies (0% to 87%) under anaerobic germination stress at 14 days after seeding.



**Figure S2.** Plot of LOD from interval mapping QTL analysis of F<sub>2:3</sub> mapping population derived from IR64 and ASD1 on chromosomes 5, 6, 7 and 9 from WinQTL Cartographer



**Figure S3.** Plot of LOD from composite interval mapping QTL analysis of  $F_{2:3}$  mapping population derived from IR64 and ASD1 on chromosomes 5, 6, 7 and 9 from WinQTL Cartographer

Table S1. Distribution of genotypes at each data correction step

Step	Length corrected	% A	% B	% H	% N
Input	-	27.41	24.80	27.42	20.38
Imputation of missing data	Indefinite	32.46	29.40	32.02	6.12
Correct under-called heterozygous	≤ 10 bp	26.71	23.59	48.30	1.40
Correct homozygous stretches	≤7 bp	27.42	23.62	47.96	1.00
Mask double recombination	≤ 4 bp	27.35	23.51	47.96	1.19
Mask chromosome ends	≤ 4 bp	27.27	23.43	47.92	1.38