

(a)

```

AtWRI1 MKKRLTTSTCSSPSSVSSSTTTSSPIQSEAPRPKRAKRAKSSPS-GDKSHNPTSPAS 59
BrWRI1.1 MKRPLTTSPTSTSTSSSACILPTQETPRPKRAKRAKSSIPTDVKPQNPTSPAS 56
BrWRI1.2 MKRPLTTCSTSSST---SSSTSSCILRNQPETPRPKRAKRAKSSPPCDVKPQNPTSPAS 57
***:***.:* * :*: * *:***** . * :*****

AtWRI1 TRRSIIYRGVTRHRWTGRFEAHLWDKSSWNSIQNKKGKQVYLGAIDSEEEAAHTYDLAAL 119
BrWRI1.1 TRRSIIYRGVTRHRWTGRFEAHLWDKSSWNSIQNKKGKQVYLGAIDSEEEAAHTYDLAAL 116
BrWRI1.2 ARRSSIYRGVTRHRWTGRFEAHLWDKSSWNSIQNKKGKQVYLGAIDSEEEAAHTYDLAAL 117
:*****:*****

AtWRI1 KYWGPDTILNFPAAETYTKELEEMQRVTKEEYLASLRRQSSGFSRGVSKYRGVARHHHNGR 179
BrWRI1.1 KYWGPDTILNFPAAETYTKELEEMQRCTKEEYLASLRRQSSGFSRGVSKYRGVARHHHNGR 176
BrWRI1.2 KYWGPDTILNFPVETYTKELEEMQRGTKEEYLASLRRQSSGFSRGVSKYRGVARHHHNGR 177
*****.*****:**** *****

AtWRI1 WEARI GRVFGNKYLGLTYNTQEEAAAAIDMAAIEYRGANAVTNFDI SNYIDRLKKGKGVF 239
BrWRI1.1 WEARI GRVFGNKYLGLTYNTQEEAAAAIDMAAIEYRGANAVTNFDI SNYIDRLKKGKGVF 236
BrWRI1.2 WEARI GRVFGNKYLGLTYNTQEEAAEYDMAAIEYRGANAVTNFDI SNYIDRLKKGKGVF 237
*****:*****:***** *****

AtWRI1 PFPVNQANHQEGILLVEAKQEVETREAKEEPREEVKQYVEEPPQEEEEEKAEQQEAE 299
BrWRI1.1 PFPVQANHQEAFLAEAKQVEA---KEEPTVEVKQVEKEEPPQEAKEEKEK--- 287
BrWRI1.2 PFRVEQATHQEAFLAEAKQEAKE-----EVKEHVEE-EHQEAREETTEQK----- 281
** *.**.***.:*.***.: ***: : **.*: *

AtWRI1 IVGYSEEAAVNCCIDSSTIMEMDRCGDNNELAWNFCMMDTGFSPFLTDQNLANENPIEY 359
BrWRI1.1 -----QQQQEV-----EEAVVTCIDSESSENELAWDFCMMDSGFAPFLTDSNLSSENPIEY 338
BrWRI1.2 -----QEVAVTCGVDSAGIMEMERSSDSNELAWNFCMMDSGFAPFLTDQNLSENENPIEY 336
:: * : : : .:.***:***:***:***:***:***:***:***:***:***

AtWRI1 PELFNEL-AFED-NIDFMFDDGKHECLNLENLDCC---VVGRESPPS-SSSPLSCLSTD 412
BrWRI1.1 PELFNEM-GFED-NIDFMFEEGKQDCLSLNLDCCDGVVVGRESPTSLSSSPLSCLSTD 396
BrWRI1.2 PELFNEMMGFEDNDIDFMFEEAKNECLSLNLDCCDV-VVGRESPTSLSSSPLSCLSTD 395
*****.***:***:***:***:***:***:***:***:***

AtWRI1 SASSTT---TTTTSVSCNYLFQGLFVGSE 438
BrWRI1.1 SASSTT---TTTTSVSCNYSV----- 415
BrWRI1.2 SASSTTITTTTTSVSCNYSV----- 416
***** ** *****

```

(b)

1: AtWRI1	100.00	81.37	81.28
2: BrWRI1.1	81.37	100.00	86.49
3: BrWRI1.2	81.28	86.49	100.00

Figure S1: Arabidopsis and Brassica WRI1 alignment and identity scores. **(a)** Clustal Omega based multiple amino acid sequence alignment (<https://www.ebi.ac.uk/Tools/msa/clustalo/>) using standard settings. * (asterisk), indicates single, fully conserved residue; :(colon), indicates conservation between groups of strongly similar properties -scoring > 0.5 in the Gonnet PAM 250 matrix; . (period), indicates conservation between groups of weakly similar properties - scoring =< 0.5 in the Gonnet PAM 250 matrix. **(b)** Percent Identity Matrix - created by Clustal2.1

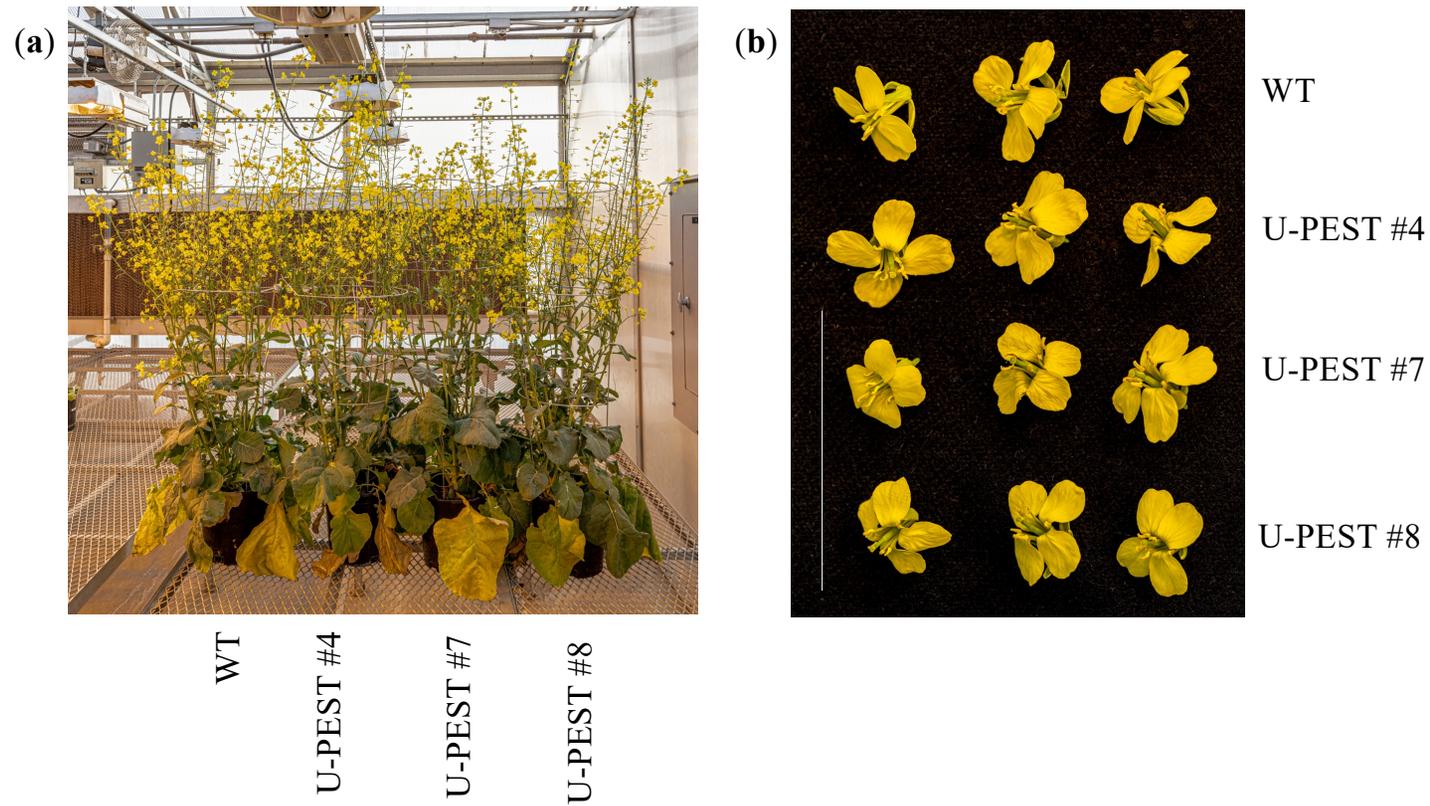


Figure S2. Phenotypes of WT and U-PEST lines. Adult, flowering WT and U-PEST plants do not show any obvious growth differences on either (a) the overall plant morphology or (b) specifically flower development. Bar = 5 cm.

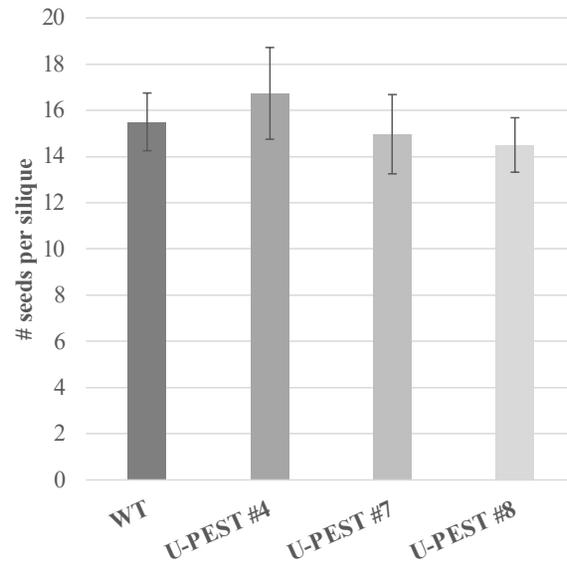


Figure S3. Seed number per silique in WT and the three U-PEST lines. No significance difference was found between the different genetic backgrounds. Data are based on three individual plants where n=10 siliques (in total 30 siliques/genetic background) were analyzed for their seed number.

Table S1: Germination data for WT and U:PEST lines under control and 150mM NaCl stress conditions. Given are the accumulated number of germinated seeds for each line on each day after plating. Final germination percentage gives the final percentage of seeds which germinated (out of 30 seeds plated). Time to 10%, 50%, and 90% Germination gives the number of days since plating for total germination to reach 10%, 50%, and 90%, respectively. Uniformity of germination gives the number of days elapsed between the first and last germination events. Mean germination time gives the mean day germination events took place. Variance of germination time gives the difference in days between the mean germination time and the last germination event. Coefficient of velocity of germination calculates how rapidly germination took place without accounting for final germination percentage. Germination rate index gives a summary value that incorporates the rate of germination and the final germination percentage. An asterisk next to the germination rate index value indicates a significant difference from WT under the same conditions (two-sample t-test, $\alpha=0.05$). n=3. Calculations were done in R using the “SeedCalc” package.

No Salt	Total # of Seeds Germinated			
Day	WT	U:PEST #4	U:PEST #7	U:PEST #8
1	2.4 ± 0.5	4.3 ± 2.1	5.7 ± 2.7	6.1 ± 4.5
2	15.2 ± 11.4	10.8 ± 3.8	12.5 ± 4.8	21.1 ± 4.9
3	19.8 ± 9.4	16.9 ± 3.8	18.5 ± 4.7	26.1 ± 2.9
4	26.8 ± 4.3	23.7 ± 4.8	24.5 ± 4.4	27.3 ± 1.6
5	27.8 ± 2.6	27.0 ± 2.9	26.2 ± 3.7	28.4 ± 1.6
6	29.0 ± 0.9	28.5 ± 1.6	27.6 ± 1.9	28.7 ± 1.2
7	29.0 ± 0.9	28.5 ± 1.6	27.6 ± 1.9	28.7 ± 1.2
Parameters				
Final Germination Percentage (%)	96.7 ± 2.9	95.0 ± 5.4	92.0 ± 6.2	95.7 ± 4.0
Time to 10% Germination (days)	1.4 ± 0.6	< 1	< 1	< 1
Time to 50% Germination (days)	2.2 ± 1.0	2.6 ± 0.6	2.2 ± 0.6	1.7 ± 0.2
Time to 90% Germination (days)	3.8 ± 1.4	4.4 ± 0.6	4.2 ± 0.9	3.0 ± 0.8
Uniformity of Germination (days)	3.0 ± 0.6	4.1 ± 0.4	3.7 ± 0.6	2.2 ± 1.2
Mean Germination Time (day)	2.8 ± 0.9	3.1 ± 0.4	2.8 ± 0.5	2.2 ± 0.4
Variance of Germination Time (days)	1.0 ± 0.6	1.9 ± 0.4	1.9 ± 1.1	1.0 ± 0.5
Coefficient of Velocity of Germination	37.4 ± 10.8	32.5 ± 4.0	36.2 ± 6.3	46.6 ± 8.5
Germination Rate Index	12.5 ± 3.3	12.2 ± 2.3	13.2 ± 2.2	15.8 ± 2.9
150mM NaCl				
150mM NaCl	Total # of Seeds Germinated			
Day	WT	U:PEST #4	U:PEST #7	U:PEST #8
1	0.0	0.5 ± 0.5	0.9 ± 0.9	0.9 ± 0.9
2	0.0	1.1 ± 0.6	4.1 ± 2.6	6.4 ± 2.8
3	0.0	1.6 ± 0.9	7.7 ± 1.7	10.8 ± 3.0
4	0.9	4.5 ± 1.5	20.4 ± 2.2	17.8 ± 3.3
5	0.9	6.1 ± 1.6	24.3 ± 2.1	22.5 ± 2.6
6	1.4 ± 1.0	6.6 ± 1.7	25.4 ± 1.7	23.6 ± 2.4
7	1.4 ± 1.0	6.6 ± 1.7	25.4 ± 1.7	23.6 ± 2.4
Parameters				
Final Germination Percentage (%)	5.0 ± 3.5	22.0 ± 5.6	84.8 ± 5.7	79.3 ± 8.3
Time to 10% Germination (days)	3.2 ± 0.1	1.9 ± 0.7	1.7 ± 0.4	1.4 ± 0.3
Time to 50% Germination (days)	4.1 ± 1.0	3.5 ± 0.3	3.4 ± 0.1	3.1 ± 0.3
Time to 90% Germination (days)	4.6 ± 1.2	4.9 ± 0.5	4.7 ± 0.3	4.7 ± 0.3
Uniformity of Germination (days)	1.4 ± 1.0	2.8 ± 0.6	3.0 ± 0.5	3.3 ± 0.3
Mean Germination Time (day)	4.5 ± 0.8	3.8 ± 0.4	3.8 ± 0.2	3.5 ± 0.3
Variance of Germination Time (days)	1.0 ± 0.9	2.0 ± 1.1	1.2 ± 0.4	1.6 ± 0.4
Coefficient of Velocity of Germination	22.5 ± 3.5	26.3 ± 2.6	26.7 ± 1.5	28.5 ± 2.7
Germination Rate Index	0.3 ± 0.2	2.1 ± 0.4*	7.8 ± 1.3*	8.0 ± 1.5*

Table S2: List of primers used in the study	
Cloning	
Name	sequence
UBQFWattb1	AAAAAGCAGGCTTAATGCAGATCTTCGTCAAG
BrRAP2.4-1attb2	AGAAAGCTGGGTCAAGGCAAAATCGAA
proBrWRI1.2 FW	CAGAAATATATATGCTGCCA
proBrWRI1.2HindIII^{FWL}	GGCAGGCTTTAAGAAGGAGATATACATATGAAGCTTCAGAAATATATATGCTGCCA
proBrWRI1.2KpnI^{RW}	ATGATATGTATATCTCCTTCTTAAGGTACCTAAATTCTGAGAAAAAGCT
proBrWRI1.2 RW	TAAATTCTGAGAAAAAGCT
proBraWRI1.2attb1	AAAAAGCAGGCTATAAGCTTACAGAAATATATATGCTGCCA
proBraWRI1.2attb2	AGAAAGCTGGGTAAATTCTGAG
RT-qPCR Analysis	
qRTWRI1.2FW	GGATAACGACATAGACTTCAT
qRTWRI1RW	ACAACGACATCACAAACA
GUbPESTqFWub	GTTGAGTCTTCAGACACCATCG
GUbPESTqRW205	ACAGCCAAGCTCCAGATCCG
ActinAF111812RTqPCR^{FW}	TGGGTTTGCTGGTGACGAT
ActinAF111812RTqPCR^{RW}	TGCCTAGGACGACCAACAATACT