

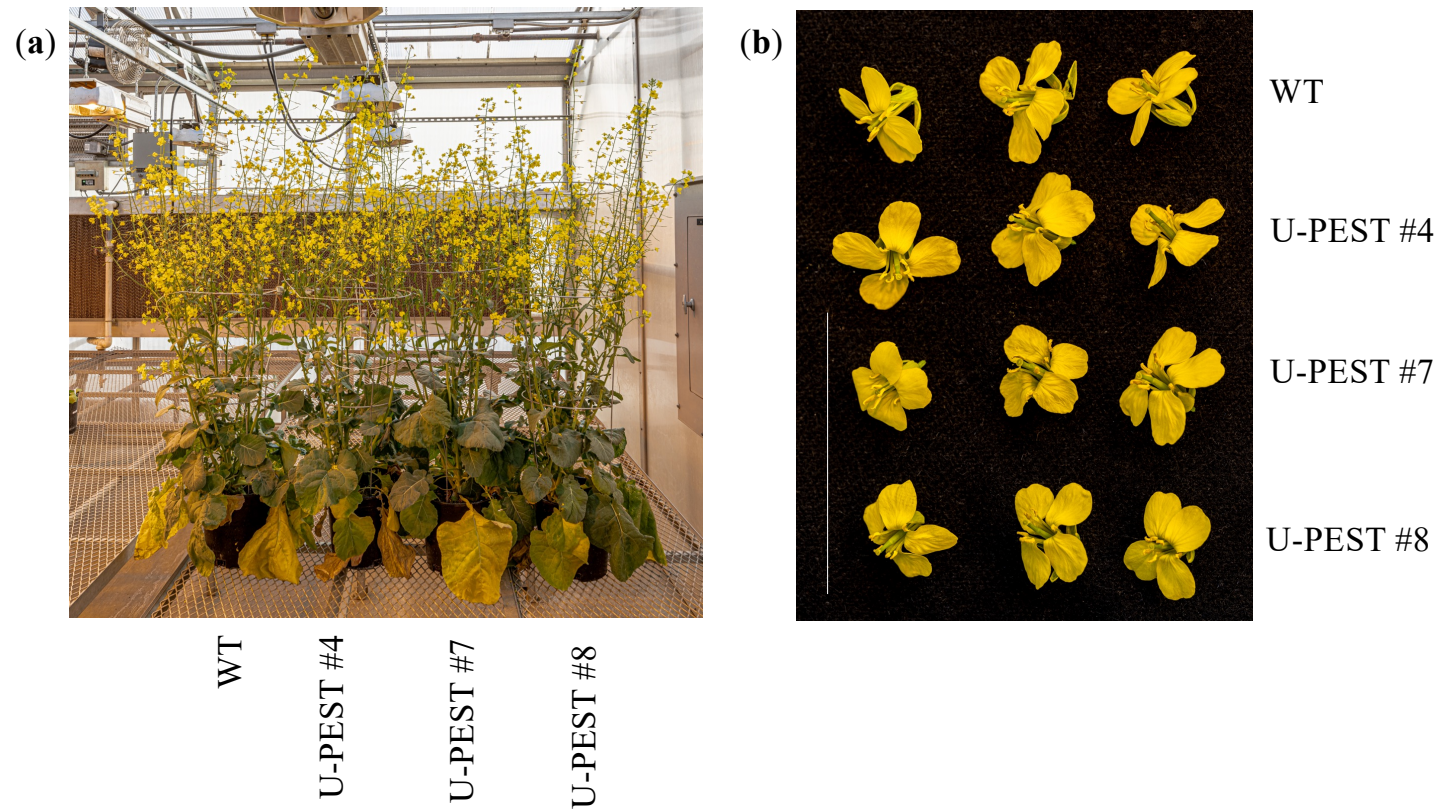
**(a)**

AtWRI1	MKRLTTSTCSSPSSSVSSSTTTSSPIQSEAPRPKRAKRAKKSSPS-GDKSHNPTSPAS	59
BrWRI1.1	MKRLTTSPSTS---SSTSSACILPTQETPRPKRAKRAKKSSIPTDVKPQNPTSPAS	56
BrWRI1.2	MKRLTTCTSSST---SSSTSSCILRNQETPRPKRAKRAKKSSPPCDVKPQNPTSPAS	57
	***: ***. .: * * : *: : * *:*****. * :*****	
AtWRI1	TRRSSIYRGVTRHRWTGRFEAHLWDKSSWNSIQNKKGKQVYLGAYDSEEAHAHTYDLAAL	119
BrWRI1.1	TRRSSIYRGVTRHRWTGRFEAHLWDKSSWNSIQNKKGKQVYLGAYDSEEAHAHTYDLAAL	116
BrWRI1.2	ARRSSIYRGVTRHRWTGRFEAHLWDKSSWNSIQNKKGKQVYLGAYDSEEAHAHTYDLAAL	117
	:*****:*****	
AtWRI1	KYWGPDITLNFPAETYTKELEEMQVRVTKEEYLASLRQSSGFSRGVSKYRGVARHHHNGR	179
BrWRI1.1	KYWGPDITLNFPAETYTKELEEMQVRVTKEEYLASLRQSSGFSRGVSKYRGVARHHHNGR	176
BrWRI1.2	KYWGPDITLNFVETYTKELEEMQVRVTKEEYLASLRQSSGFSRGVSKYRGVARHHHNGR	177
	*****.*****:*** *****	
AtWRI1	WEARI GRVFGNKYL YLGT YNTQEEAAAA YDMAAIE YRGANAVTNFDI SNYIDRLKKKGVF	239
BrWRI1.1	WEARI GRVFGNKYL YLGT YNTQEEAAAA YDMAAIE YRGANAVTNFDI SNYIDRLKKKGVF	236
BrWRI1.2	WEARI GRVFGNKYL YLGT YNTQEEAAEAYDMAAIE YRGANAVTNFDI SNYIDRLKKKGVF	237
	*****	
AtWRI1	PFPVNQANHQEGILVEAKQEVETREAKEEPREEVKQYVEEPPQEEEEKEEKAEEQQAEE	299
BrWRI1.1	PFPVSQANHQAELVAEAKQVEA---KEEPTVEVKQVEKEEPPQEAKEEKEKK-----	287
BrWRI1.2	PFRVEQATHQEAELVAEAKQEAKE-----EVKEHVEE-EHQEAAREETTEQK-----	281
	** *.**.***.:*.*****.: ****: : ** .*: *	
AtWRI1	IVGYSEEA AVNCCIDSSTIMEMDRCGDNNELAWNFCMMDTGFSPFLTDQNLANENPIEY	359
BrWRI1.1	-----QQQQEV---EEAVVTCIDSSSESNELAWDFCMMDSGFAPFLTDNLSSSENPIEY	338
BrWRI1.2	-----QEVAVTCGVDSGIMEMERSSDSNELAWNFCMMDSGFAPFLTDQNLSENENPIEY	336
	: : * : : : . : .*****:*****:***:*****.***:*****	
AtWRI1	PELFNEL-AFED-NIDFMFDDGKHECLNLENLDCC---VVGRESPPS-SSSPLSCLSTD	412
BrWRI1.1	PELFNEM-GFED-NIDFMFEEGKQDCLSLNLDCCDGVVVVGRESPTSLSSSPLSCLSTD	396
BrWRI1.2	PELFNEMMGFEDNIDFMFEEAKNECLSLNLDCCDV-VVGRESPTSLSSSPLSCFSTD	395
	*****: .*** :*****:..*:**.****** ***** *	
AtWRI1	SASSTT---TTTTSVSCNYLFQGLFVGSE	438
BrWRI1.1	SASSTT---TTTTSVSCNYSV-----	415
BrWRI1.2	SASSTTITTTTTTSVSCNYSV-----	416
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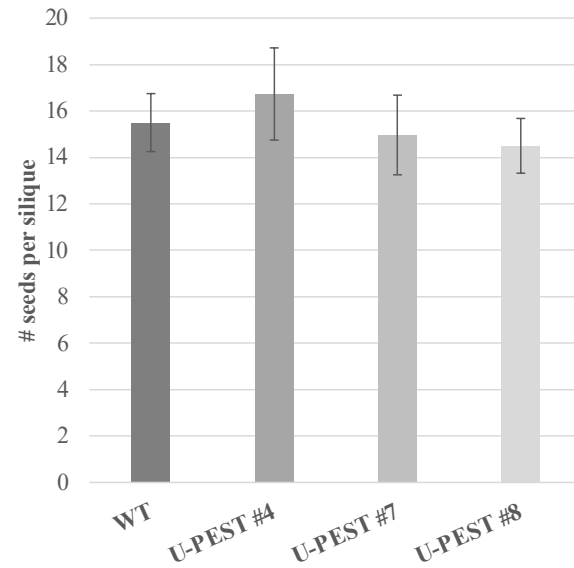
**(b)**

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					
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*

<b>Table S2: List of primers used in the study</b>	
Cloning	
Name	sequence
<b>UBQFWattb1</b>	AAAAAGCAGGCTTAATGCAGATCTTCGTCAAG
<b>BrRAP2.4-1attb2</b>	AGAAAGCTGGGTCAAGGCAAAATCGAA
<b>proBrWRI1.2 FW</b>	CAGAAATATATATGCTGCCA
<b>proBrWRI1.2<i>Hind</i>III FWL</b>	GGCAGGCTTTAAGAAGGAGATATACATATGAAGCTTCAGAAATATATATGCTGCCA
<b>proBrWRI1.2<i>Kpn</i>I RW</b>	ATGATATGTATATCTCCTTCTTAAGGTACCTAAATTCTGAGAAAAAGCT
<b>proBrWRI1.2 RW</b>	TAAATTCTGAGAAAAAGCT
<b>proBraWRI1.2attb1</b>	AAAAAGCAGGCTATAAGCTTACAGAAATATATATGCTGCCA
<b>proBraWRI1.2attb2</b>	AGAAAGCTGGGTAAATTCTGAG
RT-qPCR Analysis	
<b>qRTWRI1.2FW</b>	GGATAACGACATAGACTTCAT
<b>qRTWRI1RW</b>	ACAACGACATCACAACAA
<b>GUbPESTqFWUb</b>	GTTGAGTCTTCAGACACCATCG
<b>GUbPESTqRW205</b>	ACAGCCAAGCTCCAGATCCG
<b>ActinAF111812RTqPCRFW</b>	TGGGTTTGCTGGTGACGAT
<b>ActinAF111812RTqPCRRW</b>	TGCCTAGGACGACCAACAATACT