

Table S1. Primers used in foreground selection

Primer	Sequences
A08-300F	GTAGTGCGGGCCACAAAAT
A08-300R	CACAATGGAGTGTTGAAATTCCT
cnu_m090a F	GCAAAGATCGGCGAAGAAGA
cnu_m090a R	TGCAGACACATTCGAACAAACA
sau_um353a F	CCCACCTCCTGCTGATTGTA
sau_um353a R	GATTGATCTCCGGTGATTGG
BnRFO-AS2F	CATGCTTCGATCTCGTCCTTTA
BnRFO-AS2R	GGTAACAACATCAGGGTGGAGT

Table S2. Result statistics of prospect selection

Population	Total number of samples	Individual plant numbers with resistance and <i>Rfo</i> gene
BC ₁	12	2, 5, 7, 8, 11, 12
BC ₁	12	1~5, 7, 8, 10
BC ₁	12	2, 7~12
BC ₁	12	4, 5, 12
BC ₁	12	7, 9
BC ₁	12	3, 4, 6, 8, 11, 12
BC ₂	21 (6-30~6-50)	44~50
BC ₂	19 (6-51~6-69)	53~55, 56~60, 62~64, 65~66, 68
BC ₃	21 (6-30~6-50)	30~36, 39, 40, 48~50
BC ₃	19 (6-51~6-69)	52, 54, 59, 61, 62, 64, 67, 68
BC ₄	15 (1-63~1-77)	64, 65, 70, 73, 74, 77
BC ₄	16 (2-7~2-22)	11, 12, 17, 20, 22
BC ₄	11 (2-23~2-33)	24, 25, 26, 27, 32
BC ₄ F ₂	21 (4-51~4-71)	53, 56, 57, 60, 63~66, 69~71
BC ₄ F ₂	19 (4-72~4-90)	72, 73, 75, 76, 79, 82, 83, 87
BC ₄ F ₂	19 (4-91~5-15)	4-91, 4-92, 4-94, 5-1, 5-2, 5-5~5-15
BC ₄ F ₂	19 (5-16~5-34)	18~20, 23, 26, 27, 29, 33, 34
BC ₄ F ₂	14 (5-35~5-48)	35, 38, 40, 41, 46
BC ₄ F ₂	21 (5-49~5-69)	50, 52, 53, 57, 60, 62, 63, 66
BC ₄ F ₂	25 (5-70~5-94)	70~72, 77, 78, 83, 84, 85, 88, 93

Table S3. Result statistics of background selection

Population	Individual plants	L	X(g)	PRPG (PRPG= $[L+X(g)]/2L*100\%$)
BC ₂	153-1	86	34	69.77%
BC ₂	153-2	86	45	76.16%
BC ₂	153-3	86	52	80.23%
BC ₂	153-4	86	44	75.58%
BC ₂	153-5	86	57	83.14%
BC ₂	153-6	86	39	72.67%
BC ₂	154-1	86	52	80.23%
BC ₂	153-2	86	45	76.16%
BC ₃	CJ49-1	223	151	83.90%
BC ₃	CJ49-2	223	157	85.20%
BC ₃	CJ51-1	223	172	88.60%
BC ₄	1-64	60	59	99.17%
BC ₄	1-65	60	58	98.33%
BC ₄	1-70	60	56	96.67%
BC ₄	1-73	60	42	85.00%
BC ₄	1-74	60	56	96.67%
BC ₄	1-77	60	59	99.17%
BC ₄	2-11	60	59	99.17%
BC ₄	2-12	60	5	54.17%
BC ₄	2-20	60	59	99.17%
BC ₄	2-22	60	54	95.00%
BC ₄	2-24	60	59	99.17%
BC ₄	2-25	60	56	96.67%
BC ₄	2-26	60	59	99.17%
BC ₄	2-27	60	54	99.17%
BC ₄	2-32	60	59	99.17%

Table S4. Primers used in background selection

Primer	Sequences
EF	CTCGTAGACTGCGTACC
ER	CTGACGCATGGTTAA
MF	GACGATGAGTCCTGA
MR	TACTCAGGACTCAT
SAF	CTCGTAGACTGCGTACAAGCT
SAR	TGTACGCAGTCTAC
Taq I-F	GACGATGAGTCTGTCA
Taq I-R	CGTGACAGACTCAT
PF	CTCGTAGACTGCGTACATGCA
PR	TGTACGCAGTCTAC
EA	GACTGCGTACCAATTCA
EC	GACTGCGTACGAATT
MG	GATGAGTCCTGAGTAAG
MC	GATGAGTCCTGAGTAAC
SA	GACTGCGTACAAGCTCA
MC	GATGAGTCCTGAGTAAC
MG	GATGAGTCCTGAGTAAG
P0	GACTGCGTACATGCAG
TC	GATGAGTCTGTACACGAC
TG	GATGAGTCTGTACACGAG

Table S5. Reaction systems for PCR amplifications

Component	Volume (μL)
DNA	2.0
Primer-1	0.3
Primer-2	0.3
Buffer (10x)	1.5
Mg ²⁺ (25 mM)	1.2
dNTPs (10 mM)	0.2
Taq (5 U/μL)	0.15
ddH ₂ O	9.35
Total	15.0