

Table S1 Primer sequences used for cloning, qRT-PCR, and development of InDel and SNP marker

Primer name	Primer sequence (5'-3')	Purpose
P0-F	TCTTGTTCTTCGACCCACCTA	For SmAPRR2-like cloning
P0-R	TCCAACCAATAATTCATCCTCA	For SmAPRR2-like cloning
P1-F	GCATTGAGGATGAATTATTGGGT	For SmAPRR2-like cloning
P1-R	GCACTTTCAAGAAATCGGAGAAC	For SmAPRR2-like cloning
P2-F	TAAGTGAAGGCAATAGTGATGGG	For SmAPRR2-like cloning
P2-R	TCAGGGCAGTCATTACTTTGAGA	For SmAPRR2-like cloning
P3-F	TACTGTCCAAACAAGTCCTCCTG	For SmAPRR2-like cloning
P3-R	GTTAAGCCCTCTACTTTCATCAG	For SmAPRR2-like cloning
P3-1-F	ATAAATACCTGCTCCCTCAACC	For SmAPRR2-like cloning
P3-1-R	AGGCACCATTTCTTCCATCTTAC	For SmAPRR2-like cloning
P3-2-F	GATGGAAGAAATGGTGCCTGGTT	For SmAPRR2-like cloning
P3-2-R	AGTATTCGAGAAGGAATGGCTTG	For SmAPRR2-like cloning
P4-F	AGCAACTCGGTATAGATCAAGCC	For SmAPRR2-like cloning
P4-R	ATCCCAGATAGTATGGTGAACCC	For SmAPRR2-like cloning
P5-F	TACCACGACGAAGTTGTCCGAATG	For SmAPRR2-like cloning
P5-R	GGGACGGTTGAGATCCCTTGCTCT	For SmAPRR2-like cloning
P5-1-F	TCCGAATGTTTACAAGT	For SmAPRR2-like cloning
P5-1-R	GAGCAACATAGTCTCCTAGTAC	For SmAPRR2-like cloning
P5-2-F	TGGATTGTGAGAATGCTGAGT	For SmAPRR2-like cloning
P5-2-R	AGACAAATACTATGAAGGTGGG	For SmAPRR2-like cloning
P5-3-F	TTCTTCTTCACTGCATCCTCGTA	For SmAPRR2-like cloning
P5-3-R	The same as P6-R	For SmAPRR2-like cloning
P6-F	AGTAAAGGAGGCAATAACCAAC	For SmAPRR2-like cloning
P6-R	AGAACACTCATCAGCCAAACAT	For SmAPRR2-like cloning
1512F	CCCGACAGAGGAGGTGAT	qRT-PCR for SmAPRR2-like
1512R	TCCGTGGAAGGAGGTTTT	qRT-PCR for SmAPRR2-like
InDel79868743-F	ATAAGTATTACTCTCCCTCCCA	For InDel marker detection
InDel79868743-R	CACTCTTCATAAGGTATCCAACG	For InDel marker detection
InDel79966230-F	TTCTTAACACGAGGTGGATA	For InDel marker detection
InDel79966230-R	TTTGTCTTTCTTTTGGATG	For InDel marker detection
InDel80124212-F	GCAAAATGCTAAACGTATAAG	For InDel marker detection
InDel80124212-R	TGGACAAGTAATAACAAATG	For InDel marker detection
InDel80170780-F	TCAAACAAAGAAATACATCCC	For InDel marker detection
InDel80170780-R	TCTTGACGTAACACCTATTG	For InDel marker detection
InDel80249872-F	ACGTGGCACTCTTTGATTAG	For InDel marker detection
InDel80249872-R	TTTAATTCTAGCCACGGAGTC	For InDel marker detection
InDel80843038-F	TAACATTGATTAGTTCTCCGA	For InDel marker detection
InDel80843038-R	CTGTTTGAGGTGAGGTACTGC	For InDel marker detection
InDel80847983-F	CGAATAAGGCATAATTAGCAC	For InDel marker detection
InDel80847983-R	TGAAAGCAGAAATCACTATCG	For InDel marker detection
InDel80876526-F	AGCTAGTGCTTATTCTCTGAT	For InDel marker detection
InDel80876526-R	TGGACATCTCAAAATAGTACA	For InDel marker detection
SNP80264032-F	CTTAATATGTGTATATTACTTCATAAATTTAAT	For SNP detection
SNP80264032-Rt	GAAGGTGACCAAGTTCATGCTTAGTTTCTGGATTCACTCCTTCAT	For SNP "A" detection
SNP80264032-Rc	GAAGGTCGGAGTCAACGGATTAGTTTCTGGATTCACTCCTTCAC	For SNP "G" detection
SNP80550804-F	CAGAAACAACATAAGCTTTCAGGAA	For SNP detection
SNP80550804-Rg	GAAGGTGACCAAGTTCATGCTATTCAACTTTAGGAGTATTACTAAGGTG	For SNP "C" detection
SNP80550804-Rt	GAAGGTCGGAGTCAACGGATTAATCAACTTTAGGAGTATTACTAAGGTTT	For SNP "A" detection
SNP80595470-F	GATAAGGGTTCTTGATGGACTGAT	For SNP detection
SNP80595470-Rg	GAAGGTGACCAAGTTCATGCTGGTCTCATCTTACCATTTTCGG	For SNP "C" detection
SNP80595470-Ra	GAAGGTCGGAGTCAACGGATTATCAAGTAATTATAAATTGGAGCACAT	For SNP "T" detection
SNP80609293-Fc	GAAGGTGACCAAGTTCATGCTATCAAGTAATTATAAATTGGAGCACAC	For SNP "C" detection
SNP80609293-Ft	GAAGGTCGGAGTCAACGGATTATCAAGTAATTATAAATTGGAGCACAT	For SNP "T" detection
SNP80609293-R	ACACCTAATTTAGTGTTTACAACCTCAA	For SNP detection
SNP80724027-F	ACCAGACCTGATGATGGTGAGA	For SNP detection
SNP80724027-Rg	GAAGGTGACCAAGTTCATGCTCCAGTATGGGTCAGGCTTCG	For SNP "C" detection
SNP80724027-Ra	GAAGGTCGGAGTCAACGGATTCCAGTATGGGTCAGGCTTCA	For SNP "T" detection

Table S2 The results of re-sequencing for two parents and two bulks

Sample	G (19143)	W (19141)	20183G-bulk	20183W-bulk
Total_reads	191,010,178	78,028,336	195,643,032	254,650,172
Clean reads	95,505,089	39,014,168	97,821,516	127,325,086
Q30 (%)	92.46	94.44	92.85	93.22
Average depth	23	8	23	31
Coverage ratio-1 (%)	90.42	89.77	90.42	90.58
Mapped (%)	99.59	99.09	99.52	99.63
Properly mapped (%)	96.69	94.71	97.2	97.56

Table S3 The detection data of the InDel and SNP markers in F2 recombinant plants

Code	Pee Icolor	InDel79868743	"InDel79966230	InDel80124212	InDel80170780	InDel80249872	SNP8026403	SNP80550804	SNP80595470	SNP80609293	SNP80724027	InDel80843038	InDel80847983	InDel80876526
9	green	B	B	B	B	B	B	B	H	H	H	H	H	H
13	green	B	B	B	B	B	B	H	H	H	H	H	H	H
48	green	B	B	B	B	H	H	H	H	H	H	H	H	H
218	green	B	B	B	B	H	H	H	H	H	H	H	H	H
219	green	B	B	B	H	H	H	H	H	H	H	H	H	H
172	green	B	B	H	H	H	H	H	H	H	H	H	H	H
44	green	B	B	H	H	H	H	H	H	H	H	H	H	H
52	green	B	H	H	H	H	H	H	H	H	H	H	H	H
127	green	H	H	H	H	H	H	H	H	H	B	B	B	H
167	green	H	H	H	H	H	H	H	H	H	B	B	B	B
14	white	B	B	B	B	B	B	B	B	B	H	H	H	H
156	white	B	B	B	B	B	B	B	B	B	H	H	H	H
188	white	B	B	B	B	B	B	B	B	B	H	H	H	H
256	white	B	B	B	B	B	B	B	B	B	H	H	H	H
91	white	B	B	B	B	B	B	B	B	B	B	B	B	H
264	white	B	B	B	B	B	B	B	B	B	B	B	B	H
102	white	H	H	H	H	H	H	B	B	B	B	B	B	B
216	white	H	H	H	H	H	H	B	B	B	B	B	B	B
252	white	H	H	H	H	H	H	B	B	B	B	B	B	B

Note: A indicated the detection result is identical with white-peels parent 19141, B indicated the detection result is identical with green-peels parent 19143, H indicated the detection result identical with green peels hybrid F1, and yellow shading indicated that the individual plant was not a recombinant plant detected with corresponding marker.

Table S4 Amplification and sequencing results of SmAPRR2-Like gene

Template	19141 cDNA		19141 DNA		19143 cDNA		19143 DNA	
Primer	Product	Length (bp)	Product	Length (bp)	Product	Length (bp)	Product	Length (bp)
P0-F/P0-R	+	224	+	740	+	224	+	740
P1-F/P1-R	+	250	+	1254	+	250	+	1254
P2-F/P2-R	+	655	+	1056	+	655	+	1056
P3-F/P3-R	-	-	-	-	+	327	+	705
P4-F/P4-R	-	-	+	623	+	330	+	636
P5-F/P5-R	-	-	-	-	+	379	+	1303
P6-F/P6-R	-	-	-	-	+	393	+	393
P3-1-F/P3-1-R			+	403			+	403
P3-2-F/P3-2-R			-	-			+	461
P5-1-F/P5-1-R			-	-			+	600
P5-2-F/P5-2-R			-	-			+	542
P5-3-F/P5-3-R			-	-			+	678
P4-F/P5-1-R			-	-			+	1193
P-2-F/P4--R			-	-			+	2206

Note: "+" meant that PCR product was amplified, "-" meant no PCR product was amplified, and blank meant no PCR has been performed.

Table S5 Detection results of functional markers based on *SmAPRR2* Like in natural population

Code	Accession	Origin	Peel color	Result	Code	Accession	Origin	Peel color	Result
1	A03	China	white	-	41	CK3	China	green	+
2	B12	China	white	-	42	E4557	China	green	+
3	A06	China	white	-	43	CK4	China	green	+
4	A26	China	white	-	44	BIY2	China	green	+
5	21256	Thailand	white	-	45	21420	China	green	+
6	21260	Vietnam	white	+	46	21421	China	green	+
7	21393	China	white	+	47	21261	Vietnam	green	+
8	21359	China	white	-	48	21263	Vietnam	green	+
9	21345	China	white	-	49	21267	Thailand	green	+
10	21341	China	white	-	50	21268	Vietnam	green	+
11	21344	China	white	-	51	21284	China	green	+
12	20013	Thailand	white	-	52	21281	China	green	+
13	A20	China	white	-	53	21282	China	green	+
14	A22	China	white	-	54	21310	China	green	+
15	B24	China	white	-	55	21311	Indonesia	green	+
16	A08	China	white	-	56	21307	China	green	+
17	BAIY 2	China	white	-	57	21374	China	green	+
18	CK2	China	white	-	58	21358	China	green	+
19	B17	China	white	-	59	21340	China	green	+
20	E4403	China	white	-	60	21339	China	green	+
21	E4704	China	white	-	61	44581	China	green	+
22	E4705	China	white	-	62	44612	China	green	+
23	E4706	China	white	-	63	44640	China	green	+
24	E2823	China	white	-	64	44671	China	green	+
25	19142	China	white	+	65	44701	China	green	+
26	19141	China	white	-	66	44732	China	green	+
27	19143	China	green	+	67	44762	China	green	+
28	19144	China	green	+	68	44793	China	green	+
29	19145	China	green	+	69	44824	China	green	+
30	19146	China	green	+	70	20003	China	green	+
31	A04	China	green	+	71	20012	China	green	+
32	B14	China	green	+	72	CK7	China	green	+
33	B15	China	green	+	73	20100	China	green	+
34	A05	China	green	+	74	20101	China	green	+
35	A10	China	green	+	75	20102	China	green	+
36	A14	China	green	+	76	20099	China	green	+
37	A23	China	green	+	77	CK6	China	green	+
38	A15	China	green	+	78	A21	China	green	+
39	BY1	China	green	+	79	B21	China	green	+
40	B22	China	green	+	80	B25	China	green	+

Note: "+" meant 706bp and 1303bp target bands are amplified, and "-" meant no target bands are amplified.