

Figure- S1 - Density distribution map of markers in the genetic linkage map

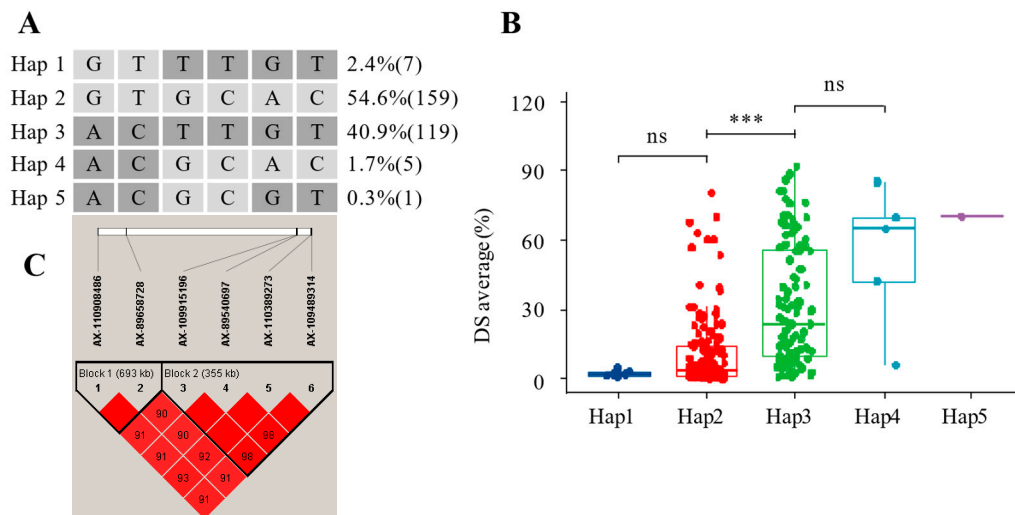


Figure- S2 – Haplotype analysis of *QYr.hau-7B* associated with stripe rust resistance in the RIL derived from YN1813 × CS. (A) Recombinants involving adjacent markers with number of lines in each group indicated in parenthesis. French grey and dark grey squares represent homozygous resistant sites and homozygous susceptible sites, respectively. **(B)** Boxplot displays the average disease severity (DS) of each recombinant group (haplotype) at the adult growth stage. The ns and ***, $P > 0.05$ and $P < 0.001$, respectively. **(C)** LD heatmap surrounding *QYr.hau-7B*. Physical positions of SNP markers (according to IWGSC RefSeq v1.0) used for fine-mapping of the *QYr.hau-7B* locus.

Table S1 – Allele-specific quantitative PCR-based genotyping assay (AQP) primers used to genotype accessions for QTL validation.

Marker ID	Physical position	Primer type	Primer sequence (5'-3')
<i>AQP_AX-110908486</i>	720524250	Forward A_FAM	GAAGGTGACCAAGTTCATGCTcggaatattttccaccatcttA
		Forward B_HEX	GAAGGTCTGGAGTCAACGGATTgcgaatattttccaccatcttG
		Common reverse	tccaatttacatgaaggtttgacg
<i>AQP_AX-89658728</i>	721217470	Forward A_FAM	GAAGGTGACCAAGTTCATGCTcctagtttggtgcaaagtacgC
		Forward B_HEX	GAAGGTCTGGAGTCAACGGATTcctagtttggtgcaaagtacgT
		Common reverse	gtgccaatccaaacagacca
<i>AQP_AX-109915196</i>	725369389	Forward A_FAM	GAAGGTGACCAAGTTCATGCTggttgatgaagagttctgcctaT
		Forward B_HEX	GAAGGTCTGGAGTCAACGGATTggttgatgaagagttctgcctaG
		Common reverse	gcagcgcatgagaacatacc
<i>AQP_AX-89540697</i>	725377238	Forward A_FAM	GAAGGTGACCAAGTTCATGCTatggaccatgctgatgcctA
		Forward B_HEX	GAAGGTCTGGAGTCAACGGATTatggaccatgctgatgcctG
		Common reverse	gctgtggagaaggttgagca
<i>AQP_AX-110389273</i>	725711247	Forward A_FAM	GAAGGTGACCAAGTTCATGCTccataaccgccaattagcttgatG
		Forward B_HEX	GAAGGTCTGGAGTCAACGGATTccataaccgccaattagcttgatA
		Common reverse	ctcggcagtcatagtaccca
<i>AQP_AX-109489314</i>	725724576	Forward A_FAM	GAAGGTGACCAAGTTCATGCTttggtacataaggtggtatcaagtA
		Forward B_HEX	GAAGGTCTGGAGTCAACGGATTttggtacataaggtggtatcaagtG
		Common reverse	tccgaaatgtgtatgctcct

Uppercase letters at the end of each primer sequence indicates the mutation site.

Table S2 – Basic information for individual chromosome maps based on the wheat 55K SNP array in the YN1813 × CS recombinant inbred line population.

Chr.	Bin marker number	Group length (cM)	cM per bin marker
1A	190	181.14	0.95
1B	128	113.95	0.89
1D	85	91.48	1.08
2A	140	196.80	1.41
2B	124	207.72	1.68
2D	170	257.48	1.51
3A	194	188.92	0.97
3B	139	182.53	1.31
3D	124	167.49	1.35
4A	143	201.74	1.41
4B	99	120.71	1.22
4D	111	163.33	1.47
5A	210	251.48	1.20
5B	196	200.23	1.02
5D	147	329.08	2.24
6A	102	105.48	1.03
6B	131	144.85	1.11
6D	77	133.68	1.74
7A	204	241.02	1.18
7B	149	166.29	1.12
7D	124	250.90	2.02
A genome	1183	1366.58	1.16
B genome	966	1136.28	1.18
D genome	838	1393.44	1.66
Total	2987	3896.30	1.30

Table S3 – Quantitative trait loci (QTL) for stripe rust resistance detected in the YN1813 × CS RIL population using disease severity (DS) data from all environments.

QTL, environment ^a	Genetic position ^b (cM)	Flanking marker	LOD	PVE (%)	Add	Genetic interval (cM)
<i>QYr.hau-1D.1</i>						
21GS-DS	285.6	<i>AX-110963089-AX-109345781</i>	3.3	0.3	-4.3	275.50-285.64
<i>QYr.hau-1D.2</i>						
21SC-DS	477.4	<i>AX-111633683-AX-109460108</i>	6.0	2.6	-6.1	452.44-477.50
<i>QYr.hau-1D.3</i>						
20GS-DS	886.0	<i>AX-109699288-AX-111573231</i>	20.4	1.7	-20.6	890.93-851.56
21GS-DS	884.8	<i>AX-109699288-AX-111573231</i>	6.8	2.9	-18.6	890.93-851.56
<i>QYr.hau-2A.1</i>						
20GS-DS	74.4	<i>AX-94428857-AX-111650354</i>	20.4	1.7	-20.4	11.22-79.95
20GS-DS	84.4	<i>AX-111650354-AX-109087558</i>	15.5	1.6	-20.6	79.95-99.63
21GS-DS	74.0	<i>AX-94428857-AX-111650354</i>	6.1	2.7	-18.4	11.22-79.95
21GS-DS	76.6	<i>AX-94428857-AX-111650354</i>	5.4	2.3	-19.9	11.22-79.95
<i>QYr.hau-2A.2</i>						
20GS-DS	346.2	<i>AX-111728239-AX-110157501</i>	17.8	1.7	20.8	314.42-350.92
21GS-DS	346.4	<i>AX-111728239-AX-110157501</i>	7.0	2.6	19.8	314.42-350.92
<i>QYr.hau-2D</i>						
20GS-DS	80.8	<i>AX-109382452-AX-111525230</i>	13.7	1.7	20.3	75.00-110.71
<i>QYr.hau-3A.1</i>						
20GS-DS	376.4	<i>AX-109384504-AX-111708993</i>	16.9	1.6	-21.0	380.00-346.79
20GS-DS	384.4	<i>AX-109384504-AX-111513789</i>	15.5	1.6	-20.7	380.00-399.39
21GS-DS	375.6	<i>AX-109384504-AX-111708993</i>	5.1	2.5	-19.1	380.00-346.79
<i>QYr.hau-3A.2</i>						
20GS-DS	772.2	<i>AX-109867787-AX-109556097</i>	20.4	1.7	20.2	765.92-805.82
21GS-DS	772.8	<i>AX-109867787-AX-109556097</i>	7.0	2.9	18.5	765.92-805.82
<i>QYr.hau-3B.1</i>						
21SC-DS	188.6	<i>AX-109488169-AX-111134888</i>	9.5	4.2	-7.7	188.64-188.31
<i>QYr.hau-3B.2</i>						

21GS-DS	195.0	<i>AX-111135059-AX-110942678</i>	10.4	1.1	-7.5	192.73-195.01
<i>QYr.hau-3D.1</i>						
20GS-DS	36.8	<i>AX-94580801-AX-110055011</i>	19.3	1.7	-20.5	0.00-42.16
20GS-DS	48.4	<i>AX-110055011-AX-109907879</i>	19.9	1.7	-20.4	42.16-92.00
21GS-DS	35.0	<i>AX-94580801-AX-110055011</i>	5.7	2.9	-17.6	0.00-42.16
21GS-DS	50.2	<i>AX-110055011-AX-109907879</i>	4.5	2.9	-17.4	42.16-92.00
<i>QYr.hau-3D.2</i>						
20SC-DS	473.4	<i>AX-108891293-AX-108923200</i>	5.3	5.0	-4.9	488.80-469.62
<i>QYr.hau-4A.1</i>						
21SC-DS	179.4	<i>AX-89606215-AX-111021866</i>	8.0	3.8	-7.2	175.12-180.70
<i>QYr.hau-4A.2</i>						
21SC-DS	216.6	<i>AX-108936363-AX-111011411</i>	3.8	1.6	4.8	216.63-213.22
<i>QYr.hau-4D.1</i>						
20SC-DS	371.4	<i>AX-94685783-AX-94540236</i>	9.4	9.8	-6.7	357.65-375.67
<i>QYr.hau-4D.2</i>						
20SC-DS	693.2	<i>AX-109535753-AX-110975379</i>	3.8	2.7	-3.7	693.75-693.08
<i>QYr.hau-5A.1</i>						
20SC-DS	179.0	<i>AX-109451992-AX-109854183</i>	6.1	4.2	-4.5	179.12-177.04
<i>QYr.hau-5A.2</i>						
21GS-DS	275.6	<i>AX-111508275-AX-110382989</i>	5.0	0.6	-5.4	278.80-274.86
<i>QYr.hau-5B.1</i>						
21GS-DS	214.8	<i>AX-109354615-AX-108936241</i>	3.5	0.5	-5.2	203.94-220.37
<i>QYr.hau-5B.2</i>						
20GS-DS	346.6	<i>AX-110480594-AX-108770081</i>	16.5	1.7	20.5	352.16-305.15
20GS-DS	358.4	<i>AX-109897850-AX-110480594</i>	18.4	1.7	20.3	394.32-352.16
21GS-DS	346.2	<i>AX-110480594-AX-108770081</i>	5.6	2.8	18.4	352.16-305.15
21GS-DS	358.4	<i>AX-109897850-AX-110480594</i>	5.8	2.7	18.5	394.32-352.16
<i>QYr.hau-5B.3</i>						
20GS-DS	554.8	<i>AX-109935948-AX-111692057</i>	20.3	1.7	-20.5	515.97-559.95
20GS-DS	565.6	<i>AX-111541781-AX-111692057</i>	20.4	1.7	-20.3	598.14-559.95

21GS-DS	555.6	<i>AX-109935948-AX-111692057</i>	6.1	2.4	-19.0	515.97-559.95
21GS-DS	567.8	<i>AX-111541781-AX-111692057</i>	8.6	3.1	-17.9	598.14-559.95
<i>QYr.hau-5D.1</i>						
21SC-DS	493.8	<i>AX-109279868-AX-86177373</i>	4.5	2.3	5.8	514.52-491.91
<i>QYr.hau-5D.2</i>						
21SC-DS	816.6	<i>AX-108974123-AX-108906106</i>	6.4	3.1	6.5	817.39-804.73
<i>QYr.hau-6A.1</i>						
20GS-DS	164.6	<i>AX-110498569-AX-110201073</i>	19.1	1.7	-20.5	169.71-118.06
21GS-DS	162.8	<i>AX-110498569-AX-110201073</i>	7.1	3.0	-18.3	169.71-118.06
<i>QYr.hau-6A.2</i>						
20GS-DS	175.6	<i>AX-108995329-AX-111361788</i>	17.8	1.7	-20.4	169.88-214.17
21GS-DS	176.8	<i>AX-108995329-AX-111361788</i>	6.8	2.9	-18.4	169.88-214.17
<i>QYr.hau-6A.3</i>						
20GS-DS	449.4	<i>AX-109346601-AX-111066905</i>	3.5	0.3	-5.0	489.36-443.11
<i>QYr.hau-6B.1</i>						
20GS-DS	176.8	<i>AX-111647591-AX-108856108</i>	15.1	1.6	20.7	181.11-149.08
20GS-DS	184.0	<i>AX-111647591-AX-108891480</i>	5.5	1.5	20.4	181.11-192.75
21GS-DS	177.4	<i>AX-111647591-AX-108856108</i>	3.4	2.2	18.5	181.11-149.08
<i>QYr.hau-6B.2</i>						
20GS-DS	283.0	<i>AX-110556002-AX-110404003</i>	3.9	0.2	-4.5	283.16-279.64
<i>QYr.hau-6B.3</i>						
21SC-DS	286.2	<i>AX-89550449-AX-109391750</i>	4.2	1.8	-5.4	286.31-285.81
<i>QYr.hau-6D.1</i>						
20GS-DS	806.2	<i>AX-95256822-AX-94834151</i>	16.5	1.7	-20.3	789.65-810.83
21GS-DS	806.6	<i>AX-95256822-AX-94834151</i>	5.7	2.4	-19.0	789.65-810.83
<i>QYr.hau-6D.2</i>						
20GS-DS	815.4	<i>AX-111613452-AX-109950405</i>	14.8	1.6	-20.6	829.09-811.34
<i>QYr.hau-7B</i>						
20GS-DS	444.2	<i>AX-110908486-AX-89658728</i>	18.9	0.9	-9.6	444.22-444.05
20SC-DS	444.0	<i>AX-89658728-AX-109489314</i>	3.2	2.2	-3.1	444.05-441.96

21GS-DS	444.0	<i>AX-89658728-AX-109489314</i>	29.8	3.7	-13.9	444.05-441.96
21SC-DS	444.2	<i>AX-110908486-AX-89658728</i>	31.8	16.9	-15.4	444.22-444.05
<i>QYr.hau-7B.1</i>						
21GS-DS	462.8	<i>AX-108869330-AX-110929633</i>	6.9	0.7	6.1	462.66-467.86
<i>QYr.hau-7D.1</i>						
21SC-DS	283.4	<i>AX-110981319-AX-108795512</i>	12.9	5.9	-9.1	282.74-283.58
<i>QYr.hau-7D</i>						
20GS-DS	294.6	<i>AX-89378255-AX-111654594</i>	8.4	0.4	6.3	294.65-293.97
20SC-DS	294.6	<i>AX-89378255-AX-111654594</i>	25.3	20.4	9.8	294.65-293.97
21GS-DS	294.6	<i>AX-89378255-AX-111654594</i>	16.9	1.9	10.1	294.65-293.97
21SC-DS	294.4	<i>AX-89378255-AX-111654594</i>	38.2	21.4	17.6	294.65-293.97
<i>QYr.hau-7D.2</i>						
20GS-DS	934.2	<i>AX-110538984-AX-109095425</i>	9.5	1.6	19.0	904.72-939.86
<i>QYr.hau-7D.3</i>						
20GS-DS	947.0	<i>AX-110072116-AX-109095425</i>	14.2	1.7	18.9	980.47-939.86

LOD, logarithm of odds score; PVE, percentage of phenotypic variation explained by the QTL; Add, additive effect of the resistance allele.

^a GS and SC, Gansu and Sichuan, respectively; 20 and 21, RIL population grown in the 2019-2020 and 2020-2021 cropping seasons, respectively.

^b Peak position in centiMorgans (cM) from the first linked marker of the relevant linkage group.

Table S4 – Molecular markers and primer sequences used to detect known genes.

Gene	Chromosome location	Molecular marker	Primer sequence(5'-3')	Fragment length (bp)
<i>YrZH84</i> 、 <i>Yr67</i> 、 <i>Yr59</i>	7B	<i>Xcfa2040F</i>	TCAAATGATTTTCAGGTAACCACTA	245
		<i>Xcfa2040R</i>	TTCCTGATCCCACCAAACAT	
<i>YrZH84</i> 、 <i>Yr59</i>	7B	<i>Xbarc32F</i>	GCGTGAATCCGGAACCCAATCTGTG	161
		<i>Xbarc32R</i>	TGGAGAACCTTCGCATTGTGTCATTA	
<i>Yr67</i>	7B	<i>Xbarc182F</i>	CCATGGCCAACAGCTCAAGGTCTC	102
		<i>Xbarc182R</i>	CGCAAAACCGCATCAGGGAAGCACCAAT	
<i>Yr59</i>	7B	<i>Xwmc557F</i>	GGTGCTTGTTTCATACGGGCT	298
		<i>Xwmc557R</i>	AGGTCCTCGATCCGCTCAT	
<i>Yr18</i>	7D	<i>csLV34F</i>	GTTGGTTAAGACTGGTGATGG	156
		<i>csLV34R</i>	TGCTTGCTATTGCTGAATAGT	

Table S5 – Marker detection in parents, some descendants, and Zhou 8425B.

Marker	Line type	<i>Xcfa2040</i>	<i>Xbarc32</i>	<i>Xwmc557</i>	<i>Xbarc182</i>	<i>Yr18</i>
Gene/QTL		<i>YrZH84</i> , <i>Yr67</i> , <i>Yr59</i>	<i>YrZH84</i> , <i>Yr59</i>	<i>Yr59</i>	<i>Yr67</i>	<i>csLV34</i>
Physical location (Mb)		718.4	729.6	728.1	732.4	47.4
YN1813	Resistant parent	+	+	+	+	-
Chinese Spring	Susceptible parent	-	+	+	+	+
21CB119	Susceptible descendant	-	+	+	+	-
21CB292	Susceptible descendant	-	+	+	+	-
21CB534	Resistant descendant	+	+	+	+	-
21CB721	Resistant descendant	+	+	+	+	-
Zhou 8425B	Contain the <i>YrZH84</i>	+	+	+	+	-

The + and - symbols indicated whether the marker detection contains the gene band, respectively.

Table S6 – Marker detection results of AQP markers flanking *QYr.hau-7B* in 712 wheat accessions.

Number	Accession name	IT mean	DS mean	<i>AQP_</i> <i>AX-1109</i> <i>08486</i>	<i>AQP_</i> <i>AX-896</i> <i>58728</i>	<i>AQP_</i> <i>AX-1099</i> <i>15196</i>	<i>AQP_</i> <i>AX-895</i> <i>40697</i>	<i>AQP_</i> <i>AX-1103</i> <i>89273</i>	<i>AQP_</i> <i>AX-1094</i> <i>89314</i>	Country	Origin
1	Chuanyu 29	4	6	AA	CC	GG	GG	AA	GG	China	Sichuan
2	Guohaomai 5	5	33	AA	CC	TT	AA	GG	AA	China	Sichuan
3	Zhongkema 13	0	0	-	CC	GG	GG	GG	AA	China	Sichuan
4	Yunong 911	5	41	-	TT	GG	GG	AA	GG	China	Henan
5	Jingzhouheimai	1	0	-	-	GG	-	-	-	China	Hubei
6	01-29-1-1-2C1	1	0	GG	TT	GG	GA	AA	GG	China	
7	Mianmai 909	1	0	AA	CC	GG	GG	GG	AA	China	Sichuan
8	EPC BW 198	2	1	AA	CC	GG	GG	AA	GG	CIMMYT	
9	6402	4	11	-	TT	-	AA	GG	AA	CIMMYT	
10	Xinong 239	5	23	-	CC	-	GG	GG	AA	China	Shanxi
11	Nanmai 941	5	31	-	-	-	-	-	-	China	Sichuan
12	LENNOX	2	1	GG	TT	GG	GG	GG	AA	Europe	
13	FR034	2	1	AA	TT	GG	AA	GG	AA	France	
14	Hangmai 99	2	1	GG	TT	GG	GG	AA	GG	China	Beijing
15	EPC BW 348	3	1	AA	TT	GG	AA	GG	AA	CIMMYT	
16	Guohaomai 3	3	10	GG	TT	GG	GG	AA	GG	China	Sichuan
17	Zhou 090243	3	10	AA	CC	GG	GG	GG	AA	China	Henan
18	Zhengmai 1867	3	5	GG	TT	GG	AA	AG	GG	China	Henan
19	Aifeng 369	5	41	AA	CC	GG	AA	AA	GG	China	Henan
20	A-117-39	0	0	GG	TT	GG	GG	AA	GG	China	Henan
21	Yingli 2	1	0	GG	TT	GG	AA	GG	AA	China	
22	Qian 0405	4	13	AA	CC	GG	AA	AA	GG	China	Guizhou
23	B130864-1-1	2	1	-	TT	GG	GG	AA	GG	China	Beijing
24	Zhou 91197	3	5	-	-	TT	GG	AA	GG	China	Henan
25	Mianmai 1302	2	1	GG	TT	GG	GG	AA	GG	China	Sichuan
26	Mianmai 1101	2	1	GG	TC	GG	GA	AA	GG	China	Sichuan

27	Yuancai -09	2	3	GG	TT	GG	GG	AA	GG	China	Henan
28	Zhou 8425B	3	5	GG	TT	GG	GG	AA	GG	China	Henan
29	Gaoyou 9415	4	30	GG	TT	GG	GG	AA	GG	China	Hebei
30	Zhoumai 32	5	23	GG	TT	GG	GG	AA	GG	China	Henan
31	Mianmai 5805	5	31	AA	CC	GG	GG	GG	AA	China	Sichuan
32	DEMOLOT-BW-25	5	21	AA	TT	GG	AA	GG	AA	CIMMYT	
33	Chuanmai 93	5	15	AA	CC	GG	GG	AA	GG	China	Sichuan
34	Zhou 8425B-4-2	3	30	GG	TT	GG	GG	AA	GG	China	Henan
35	A66	4	30	GG	TT	GG	GG	AA	GG	China	Henan
36	EPC BW 126	0	0	AA	TT	GG	AA	GG	-	CIMMYT	
37	Kelin 201	2	1	GG	-	GG	GG	AA	GG	China	Henan
38	Xiaoheimai	3	1	-	CC	TT	AA	GG	AA	Holland	
39	Chuanmai 84	4	8	-	CC	GG	AA	GG	AA	China	Sichuan
40	Chuanmai 907	6	30	AA	TC	GT	GA	AG	-	China	Sichuan
41	Fumai 709	2	1	GG	TT	GG	AA	-	-	China	Henan
42	Fenghuang 619	2	1	-	TT	-	GG	-	GG	China	Henan
43	Wanximai 0638	5	50	-	-	-	-	-	GG	China	Jiangsu
44	EPC BW 988	0	0	AA	TT	GG	AA	GG	AA	CIMMYT	
45	EPC BW 280	1	0	AA	CC	GG	GG	GG	AA	CIMMYT	
46	Shumai 1868	2	1	AA	CC	GG	GG	AA	GG	China	Sichuan
47	Zhou 06050-7-3ai	2	1	GG	TT	GT	GA	AA	GG	China	Henan
48	Zhou 06055	2	3	GG	TT	GG	GG	AA	GG	China	Henan
49	Zhoumai 26S	2	1	GG	TT	GG	GG	AA	GG	China	Henan
50	Zhoumai 13wan	3	5	GG	TT	GG	GG	AA	GG	China	Henan
51	Mianmai 906	3	5	AA	CC	GG	GG	GG	AA	China	Sichuan
52	Zhou 88114ai-4-1	4	40	GG	TT	GG	GA	AA	GG	China	Henan
53	Aozhouruojin 9	4	30	AA	TT	GG	AA	GG	AA	Australia	
54	Kemai 1609	4	6	GG	TT	GG	GG	AA	GG	China	Henan
55	Mianmai 905	4	8	AA	CC	GG	GG	GG	AA	China	Sichuan
56	Yunong 913	5	40	GG	TT	GG	GG	AA	GG	China	Henan

57	Songyang 28	2	1	GG	TT	GG	GG	AA	GG	China	Henan
58	Zhou 11712-2-1	2	6	GG	TT	GT	GA	AG	GA	China	Henan
59	A-153-50	0	0	-	TT	GG	GG	AA	GG	China	Henan
60	Nongmai 22	2	1	-	TT	GG	GG	AA	GG	China	Henan
61	Zhou 05410	3	5	GG	TT	GG	-	AA	GG	China	Henan
62	Mianmai 161	4	5	-	TT	GG	GG	GG	AA	China	Sichuan
63	Defeng 1390	6	53	-	TT	GG	AA	AA	GG	China	Henan
64	Pingan 0658	3	20	GG	CC	GG	AA	AA	GG	China	Henan
65	Shumai 830	0	0	-	CC	GG	GG	AA	GG	China	Sichuan
66	Taihe 896	3	3	-	TT	GG	GG	AA	GG	China	Henan
67	Zhoumai 46	5	21	-	TT	-	GG	AA	GG	China	Henan
68	Shumai 1613	3	1	-	-	-	GG	AA	GG	China	Sichuan
69	Xunmai 802	7	70	AA	CC	GG	AA	AA	GG	China	Henan
70	PPT BW 164	7	40	AA	TT	GG	AA	GG	AA	CIMMYT	
71	Yunong 903S	8	60	GG	TT	GG	GA	AA	GG	China	Henan
72	9175	8	70	GG	TT	GG	AA	GG	AA	China	Henan
73	Chuanmai 42	9	100	AA	CC	GG	GG	GG	AA	China	Sichuan
74	SN105678	9	60	AA	CC	GG	GG	GG	AA	China	Shandong
75	2014HebeiB25	9	100	AA	CC	GG	GG	GG	AA	China	Hebei
76	2014G107	9	85	AA	CC	GG	GG	GG	AA	China	Jiangsu
77	Bainongyunluo 33	9	90	AA	CC	GG	GG	GG	AA	China	Henan
78	Zhou 07304	0	0	GG	TT	GG	GG	AA	GG	China	Henan
79	JJZ18	0	0	GG	TT	GG	GG	AA	GG	China	Beijing
80	EPC BW 435	0	0	AA	CC	GG	GG	AA	GG	CIMMYT	
81	DEMOPL0T-BW-27	1	0	AA	TT	GG	AA	GG	AA	CIMMYT	
82	Zhou 06047	2	3	GG	TT	GG	GG	AA	GG	China	Henan
83	Quanmai 29	2	1	GG	TT	GG	GG	AA	GG	China	Henan
84	Xindifeng 058	2	1	GG	TT	GG	GG	AA	GG	China	Henan
85	Qiule 2132	3	5	GG	TT	GG	GG	AA	GG	China	Henan
86	TYBALT	3	5	AA	CC	GG	GG	GG	AA	Europe	

87	Kechengmai 6	3	3	AA	CC	GG	GG	AA	GG	China	Sichuan
88	Shumai 114	3	3	GG	TT	GG	AA	GG	AA	China	Sichuan
89	Mianmai 5658	4	1	AA	CC	TT	AA	GG	AA	China	Sichuan
90	Pingan 701	5	31	GG	CC	GG	AA	AA	GG	China	Henan
91	Chuanmai 1456	5	20	AA	CC	GT	GG	GG	AA	China	Sichuan
92	9006	6	43	AA	CC	TT	AA	GG	AA	China	Henan
93	Chuanmai 86	7	50	AA	CC	GG	GG	GG	AA	China	Sichuan
94	Qianyu 21	9	90	AA	CC	GG	GG	GG	AA	China	Guizhou
95	DEMOPLLOT-BW-37	1	0	AA	CC	GG	GG	AA	GG	CIMMYT	
96	Luomai 8129	2	1	GG	TT	GG	GG	AA	GG	China	Henan
97	DEMOPLLOT-BW-38	3	1	AA	CC	GG	GG	GG	GG	CIMMYT	
98	Qianmai 0507	6	30	AA	CC	GG	GG	GG	AA	China	Guizhou
99	EPC BW 706	6	35	AA	TT	GG	AA	GG	AA	CIMMYT	
100	Xikemai 12	4	23	AA	CC	-	GG	AA	GG	China	Sichuan
101	CP02-8-5-6-2-1	1	0	-	TT	GG	GG	AA	GG	China	Beijing
102	Zhou 05164S	1	0	-	TT	GG	GG	AA	GG	China	Henan
103	JULIUS	5	30	-	TT	GG	AA	AA	GG	Europe	
104	DEMOPLLOT-BW-39	5	30	AA	CC	GG	GG	AA	-	CIMMYT	
105	Demopht HP 12	5	40	-	-	GG	GG	GG	AA	CIMMYT	
106	DEMOPLLOT-BW-34	1	0	-	TT	GG	AA	GG	-	CIMMYT	
107	A-118-40	3	10	-	TT	GG	GG	AA	GG	China	Henan
108	DEMOPLLOT-BW-26	2	1	-	TT	-	AA	GG	-	CIMMYT	
109	Lvyuanmai 5	9	80	-	-	-	-	GG	-	China	Henan
110	Fumai 1369	6	20	-	-	-	-	-	AA	China	Henan
111	Jichuang 15	9	80	-	-	-	-	-	-	China	Henan
112	Mianmai 903	1	0	-	-	-	-	-	-	China	Sichuan
113	Jimai 499	8	85	GG	TT	GG	GG	AA	GG	China	Hebei
114	Yannong 679	8	80	AA	CC	GG	GG	GG	AA	China	Shandong
115	Baofeng 1707	8	80	AA	TT	GG	GG	GG	AA	China	Jiangsu
116	Huaimai 40	8	60	AA	CC	GG	GG	GG	AA	China	Jiangsu

117	Annong 8455	8	70	AA	CC	GG	AA	AA	GG	China	Anhui
118	EPC BW 795	8	70	AA	TT	GG	AA	GG	AA	CIMMYT	
119	Nanmai 660	8	75	AA	CC	TT	AA	AA	GG	China	Sichuan
120	Chuan 13071	9	100	AA	CC	GG	GG	GG	AA	China	Sichuan
121	Xiangmai 46	9	100	AA	CC	GG	GG	GG	AA	China	Anhui
122	W17	9	95	AA	CC	GG	GG	GG	AA	China	Jiangsu
123	Sumai 1	9	95	AA	CC	GG	GG	GG	AA	China	Henan
124	Jinmai 15	9	85	AA	CC	GG	GG	GG	AA	China	Henan
125	18LHF303	9	100	AA	CC	GG	AA	AA	GG	China	
126	Xinmai 45	9	90	AA	CC	GG	AA	AA	GG	China	Henan
127	Xunle 159	1	0	GG	TT	GG	GG	AA	GG	China	Henan
128	Yanhao 369	1	0	GG	TT	GG	GG	AA	GG	China	Henan
129	Zhengpinmai 26	1	0	GG	TT	GG	GG	AA	GG	China	Henan
130	Zhou 11085s-3-2	1	0	GG	TT	GG	AA	AA	GG	China	Henan
131	Yuancai -04	1	0	GG	TT	GG	GG	AA	GG	China	Henan
132	Yuancai -10	1	0	GG	TT	GG	GG	AA	GG	China	Henan
133	Yanfeng 168	2	1	GG	TT	GG	GG	AA	GG	China	Henan
134	Zhengmai 3518	2	3	GG	TT	GG	GG	AA	GG	China	Henan
135	EPC BW 24	2	1	AA	CC	GG	GG	AA	GG	CIMMYT	
136	Meng 1512	2	1	GG	TT	GG	GG	AA	GG	China	Henan
137	Zhou 11093s	2	1	GG	TT	GG	GG	GG	AA	China	Henan
138	EPC BW 89	2	1	AA	TT	GG	AA	GG	AA	CIMMYT	
139	Yuancai -12	2	1	GG	TT	GG	GG	AA	GG	China	Henan
140	Zhou 090798	2	3	GG	TT	GG	GG	AA	GG	China	Henan
141	Yuancai -11	2	1	GG	TT	GG	GA	AA	GG	China	Henan
142	Zhengmai 816	3	10	GG	TT	GG	GG	AA	GG	China	Henan
143	Zhongyu 1215	3	5	GG	TT	GG	GG	AA	GG	China	Henan
144	Zhoumai 38	3	5	GG	TT	GG	GG	AA	GG	China	Henan
145	EPC BW 351	3	3	AA	TT	GG	AA	GG	AA	CIMMYT	
146	Luomai 906	3	20	GG	TT	GG	GG	AA	GG	China	Henan

147	Zhoumai 42	3	3	GG	TT	GG	GG	AA	GG	China	Henan
148	Jimai 666A	3	20	AA	CC	GG	AA	AA	GG	China	Henan
149	PPT BW 129	3	20	AA	TT	GG	AA	GG	AA	CIMMYT	
150	Haibin 02	3	3	GG	TT	GG	GG	GG	AA	China	Henan
151	Juchengmai 6	4	30	GG	TT	GG	GG	AA	GG	China	Henan
152	Xunchengmai 6	4	30	GG	TT	GG	GG	AA	GG	China	Henan
153	Deyan 1658	4	40	GG	TT	GG	GG	AA	GG	China	Henan
154	Heimang	4	30	AA	TT	GG	AA	GG	AA	China	
155	Wheatear	4	40	AA	TT	GG	AA	GG	AA	America	
156	RL6077	4	40	AA	TT	GG	AA	GG	AA	Canada	
157	Dianmai 7	4	11	AA	CC	GG	GG	AA	GG	China	Yunnan
158	Zhoumai 40	5	40	GG	TT	GG	GG	AA	GG	China	Henan
159	Mian 15Z1	5	31	AA	CC	TT	AA	GG	AA	China	Sichuan
160	Chuanfu 20	5	15	AA	CC	GG	GG	GG	AA	China	Sichuan
161	Mianmai 1693	5	25	AA	CC	GG	GG	GG	AA	China	Sichuan
162	Mianmai 318	5	15	AA	CC	GG	GG	GG	AA	China	Sichuan
163	Aikang 58	6	43	GG	TT	GT	GG	AA	GG	China	Henan
164	Mianyang 302	6	35	AA	CC	GG	GG	GG	AA	China	Sichuan
165	Luohan 26	6	35	AA	CC	GG	GG	GG	AA	China	Henan
166	Shanmai 123-2	6	40	GG	CC	GG	AA	AA	GG	China	Shanxi
167	Yunong 912	7	60	GG	TT	GG	GG	AA	GG	China	Henan
168	Jinqiang 5	7	60	AA	CC	GG	GG	AA	GG	China	Tianjin
169	Jimai 2	7	70	AA	CC	GG	GG	GG	AA	China	Henan
170	BFB10	7	35	AA	CC	GG	GG	GG	AA	China	Beijing
171	EPC BW 958	7	20	AA	TT	GG	AA	GG	AA	CIMMYT	
172	2014HebeiB28	8	90	AA	CC	GG	GG	GG	AA	China	Hebei
173	Xindong 20	8	70	AA	CC	GG	GG	GG	AA	China	Xinjiang
174	Chuan 07005	8	70	AA	CC	GG	GG	GG	AA	China	Sichuan
175	Jinuomai 2	8	70	AA	CC	GG	GG	GG	AA	China	Shandong
176	Dengmai 298	8	40	AA	CC	GG	AA	AA	GG	China	Henan

177	CD010-Jian76	9	80	AA	CC	GG	GG	AA	GG	CIMMYT	
178	BL6213	0	0	GG	TT	GG	GG	AA	GG	China	Beijing
179	Zhongyu 1220	0	0	GG	TT	GG	GG	AA	GG	China	Henan
180	Zhoumianbaomai	1	0	GG	TC	GG	GG	AA	GG	China	Henan
181	Luo 07419	2	1	GA	TT	GT	GA	AA	GA	China	Henan
182	Puxing 10	2	3	GG	TT	GG	GG	AA	GG	China	Henan
183	Zhongyu 1686	2	1	GG	TT	GG	GG	AA	GG	China	Henan
184	Pingan 0518	2	3	GG	TT	GG	GG	AA	GG	China	Henan
185	Zhou 08751	2	3	GG	CC	GG	AA	AA	GG	China	Henan
186	Yun 152-484	2	1	AA	CC	GG	GG	AA	GG	China	Yunnan
187	Hemai 53	2	8	GA	TT	GG	GG	AA	GG	China	Henan
188	EPC BW 296	3	5	AA	TT	GG	AA	GG	AA	CIMMYT	
189	Xunong 9	4	30	AA	CC	TT	AA	GG	GA	China	Henan
190	A0904	4	11	AA	CC	GG	GG	GG	AA	China	Shanxi
191	Zhoumai 22	5	30	GG	TT	GG	AA	AA	GG	China	Henan
192	Luomai 38	5	41	GG	TT	GG	GG	AA	GA	China	Henan
193	Nongkeda 888	5	31	GG	TT	GG	GG	AA	GA	China	Henan
194	Chuanfeng 51	5	33	AA	CC	GG	GG	GG	AA	China	Henan
195	EPC BW 367	5	23	AA	TT	GG	AA	GG	AA	CIMMYT	
196	EPC BW 16	5	15	AA	TT	GG	AA	GG	AA	CIMMYT	
197	Caizhi 0173	6	30	AA	CC	GG	AA	GG	AA	China	Henan
198	Zhoumai 9	7	60	AA	CC	GT	GG	GG	AA	China	Henan
199	Jimai 31	8	80	AA	CC	GG	GG	-	AA	China	Shandong
200	Jimai U87	9	100	AA	CC	GG	AA	AA	-	China	Hebei
201	Zhou 12668	1	0	GG	-	GG	GG	AA	GG	China	Henan
202	Zhoumai 43	2	1	GG	TT	GG	-	AA	AA	China	Henan
203	EPC BW 836	3	10	AA	TT	GG	AA	GG	-	CIMMYT	
204	Chuannuomai 1314	3	3	AA	CC	GG	AA	GG	-	China	Sichuan
205	Aozhouruojin 5	6	55	AA	CC	GG	-	AA	GG	Australia	
206	Syn1	6	15	AA	TT	-	AA	GG	AA	China	Sichuan

207	18LHF301	6	35	AA	TC	-	AA	AG	AA	China	
208	Jimai 056852	9	100	AA	CC	GG	GG	GG	AA	China	Shandong
209	Qian 110209-4	6	35	AA	CC	GG	GG	GG	AA	China	Guizhou
210	DEMO PLOT-BW-36	2	1	AA	TT	GG	AA	GG	-	CIMMYT	
211	Saidemai 1	3	10	GA	TT	-	GA	GG	AA	China	Henan
212	Chuanmai 609	3	1	-	CC	TT	GG	GG	AA	China	Sichuan
213	Chuanyu 31	4	13	AA	CC	GG	-	AA	GG	China	Sichuan
214	Zhoumai 26	4	11	AA	CC	-	GG	GG	AA	China	Henan
215	Fuximai 1	4	11	AA	CC	GG	-	GG	AA	China	
216	Qian 0513	5	35	-	CC	GG	GG	GG	AA	China	Guizhou
217	Zhoumai 35	6	43	-	TT	GG	GG	AA	GG	China	Henan
218	Luo 6010	6	40	-	CC	-	AA	GG	AA	China	Henan
219	Ruiquanmai 32	9	100	-	CC	GG	GG	GG	AA	China	Jiangsu
220	B31972-1-1	5	8	-	CC	GG	GG	GG	AA	China	Beijing
221	Shumai 133	6	25	-	CC	TT	AA	AA	GG	China	Sichuan
222	CIMMYT6411-1	7	60	-	TT	GG	GG	AA	GG	CIMMYT	
223	Lan 30	9	85	-	CC	-	GG	GG	AA	China	Henan
224	EPC BW 595	5	50	-	TT	GG	AA	GG	-	CIMMYT	
225	Zhoumai 37	5	31	GG	TT	GT	GA	-	-	China	Henan
226	Chuanmai 1826	8	90	-	CC	GG	AA	AA	GA	China	Sichuan
227	Zhou 08174s	2	1	-	TT	GG	GG	AA	GG	China	Henan
228	DEMO PLOT-BW-31	4	11	-	TT	GG	AA	GG	-	CIMMYT	
229	DEMO PLOT-BW-29	5	31	-	TT	GG	AA	GG	-	CIMMYT	
230	Fumai 368	7	60	-	CC	GG	-	AA	GG	China	Henan
231	Wanfeng 269	8	70	-	-	GG	AA	AA	GG	China	Henan
232	Shumai 580	0	0	-	-	GG	GG	AA	GG	China	Yunnan
233	Fengdecunmai 13	2	1	-	TT	-	GG	AA	GG	China	Henan
234	Guangtai 266	4	21	-	TT	-	GG	AA	GG	China	Henan
235	Kenong 2009	7	70	-	CC	-	GG	GG	AA	China	Shandong
236	Yumai 13	4	40	-	-	-	AA	-	AA	China	Chongqing

237	Chuannong 32	3	10	-	-	GG	-	-	-	China	Sichuan
238	Xinmai (C5/3577)F3d1	8	70	-	-	-	-	GG	-	China	Henan
239	Fengshuo 301	5	31	-	-	-	GG	-	-	China	Henan
240	Fangmai 68	8	70	-	-	-	-	-	-	China	Henan
241	Syn-SA-u-16	1	0	GG	TT	GG	GA	AA	GA	China	Sichuan
242	Keda 668	2	1	GG	TT	GG	GG	AA	GG	China	Henan
243	Shengmai 108	2	3	GG	TT	GG	GG	AA	GG	China	Shandong
244	Xinxuan 20	2	1	GG	TT	GG	GG	AA	GG	China	Henan
245	Zhou 06049	3	10	GG	TT	GG	GG	AA	GG	China	Henan
246	Yunong 909	3	20	GG	TT	GG	AA	AA	GG	China	Henan
247	Zhou 11711	3	10	GG	TT	GG	GG	AA	GG	China	Henan
248	Changmai 2	8	80	GG	TT	GG	GG	AA	GG	China	
249	Annong 1581	9	95	AA	CC	GG	GG	GG	AA	China	Anhui
250	Zhoumai 20	5	41	GG	TT	-	GG	AA	GG	China	Henan
251	FT Wonder	9	90	-	-	GG	GG	GG	AA	France	
252	Chuangxing 39	5	43	AA	CC	GG	-	GG	AA	China	Henan
253	Gaoyou 5218	9	100	-	TT	-	GG	GG	AA	China	Hebei
254	Fengmai 16	2	1	-	TT	-	GG	AA	GG	China	Henan
255	DEMOPL0T-BW-32	1	0	AA	TT	GG	AA	GG	AA	CIMMYT	
256	Zhou 06048s	2	3	GG	TT	GG	GG	AA	GG	China	Henan
257	GY37	2	3	GG	TT	GG	GG	AA	GG	China	Hebei
258	05(197)-39-13	2	1	GG	TT	GG	GG	AA	GG	China	
259	Zhongmai 5215	2	3	GG	TT	GG	GG	AA	GG	China	Beijing
260	Syn-SA-u-26	3	10	AA	CC	TT	AA	GG	AA	China	Sichuan
261	Zhou 091161	3	20	GG	TT	GG	GG	AA	GG	China	Henan
262	Zhoumai 36	4	21	GG	TT	GG	GG	GG	AA	China	Henan
263	JJZ20	5	21	AA	CC	GG	GG	GG	AA	China	Beijing
264	Shangdumai 137	6	53	AA	CC	GT	GG	GG	AA	China	Henan
265	Shengmai 102	6	51	AA	CC	GG	GG	GG	AA	China	Shandong
266	Zhou 06265	6	30	GG	TT	GG	GG	AA	GG	China	Henan

267	CP-14-1-1F7	7	60	AA	TC	GT	GA	GG	GA	China	Beijing
268	Pingan 902	7	75	AA	CC	GG	GG	GG	AA	China	Henan
269	Kenong 199	7	70	GG	CC	GG	AA	AA	GG	China	Shandong
270	Lankaoaizao 8	7	70	AA	CC	GG	AA	AA	GG	China	Henan
271	Yunong 202	7	65	AA	CC	GG	AA	AA	GG	China	Henan
272	Anke 1602	7	50	AA	CC	GG	AA	GG	AA	China	Anhui
273	Lancai 016	7	50	AA	CC	GG	GG	GG	AA	China	Henan
274	NMAS22	8	80	AA	CC	TT	AA	AA	GG	China	Sichuan
275	Jiamai 8	8	70	AA	CC	TT	AA	AA	GG	China	Henan
276	03-3718	8	85	AA	CC	GG	GG	AA	GG	China	
277	Jinqiang 6	8	95	AA	CC	GG	GG	AA	GA	China	Tianjin
278	CA12107	8	70	AA	CC	GG	GG	GG	AA	China	Beijing
279	Jimai 27	8	80	AA	CC	GG	GG	GG	AA	China	Shandong
280	Luohan 28	8	80	AA	CC	GG	AA	AA	GG	China	Henan
281	Kenxing 5	8	80	AA	CC	GG	AA	AA	GG	China	Shan'xi
282	Aozhouruojin 6	8	80	AA	TT	GG	AA	GG	AA	Australia	
283	CA0998	9	95	AA	CC	TT	AA	AA	GG	China	Beijing
284	Lunxuan 149	9	90	AA	CC	TT	AA	AA	GA	China	Beijing
285	SdauA12-4-1	9	85	AA	CC	GG	GG	AA	GG	China	Shandong
286	Hemai 0666	9	100	AA	CC	GG	GG	GG	AA	China	Shandong
287	Hemai 0839	9	100	AA	CC	GG	GG	GG	AA	China	Shandong
288	Baofeng 14511	9	95	AA	CC	GG	GG	GG	AA	China	Jiangsu
289	NMAS07	9	95	AA	CC	GG	GG	GG	AA	China	Sichuan
290	GY12029	9	95	AA	CC	GG	GG	GG	AA	China	Hebei
291	ZRH26	9	90	AA	CC	GG	GG	GG	AA	China	Jiangsu
292	Lancai 011	9	95	AA	CC	GG	GG	GG	AA	China	Henan
293	Saidemai 5	9	100	AA	CC	GG	GG	GG	AA	China	Henan
294	Ji 1653	9	95	AA	CC	GG	AA	AA	GG	China	Henan
295	Annong 15210	9	100	AA	CC	GG	AA	AA	GG	China	Anhui
296	SdauA12-3-2	9	90	AA	CC	GG	AA	AA	GG	China	Shandong

297	CB BW 193	2	3	AA	TT	GG	AA	GG	AA	CIMMYT	
298	Zhumai 305	3	5	GG	CC	GG	AA	AA	GG	China	Henan
299	04Zhong77	3	1	GG	TT	GG	GG	AA	GG	China	Henan
300	Demopht BW 21	6	53	AA	TT	GG	AA	GG	AA	CIMMYT	
301	CP20-30	6	35	GG	TT	GG	GG	AA	GG	China	Beijing
302	05Guan33	7	33	GG	TT	GG	GG	AA	GG	China	Hebei
303	Caizhi 98	7	70	AA	CC	GG	AA	AA	GG	China	Henan
304	Zhou 141527	8	60	GG	TT	GG	GG	AA	GG	China	Henan
305	GY1039	8	90	AA	CC	GG	GG	GG	AA	China	Hebei
306	Anke 1604	8	90	AA	CC	GG	AA	GG	AA	China	Anhui
307	Anke 1401	9	100	AA	CC	GG	GG	GG	AA	China	Anhui
308	Tianbao 6yisi	9	100	AA	CC	GG	GG	GG	AA	China	Henan
309	Annong 1675	9	90	AA	CC	GG	AA	AA	GG	China	Anhui
310	Xunmai 8202	5	31	GG	-	GG	GG	AA	GG	China	Henan
311	2014HebeiA18	5	43	-	CC	GG	GG	GG	AA	China	Hebei
312	Aimengniu I	5	31	AA	CC	-	GG	GG	AA	China	Shandong
313	Bainong 8822	6	35	GG	TT	GG	-	AA	GG	China	Henan
314	Anke 1502	7	80	AA	-	GG	GG	GG	AA	China	Anhui
315	Anke 1405	8	90	AA	-	TT	AA	AA	GG	China	Anhui
316	XR3283	8	70	AA	CC	GG	-	GG	AA	China	Shandong
317	Lian 0809	9	90	-	CC	GG	GG	GG	AA	China	Jiangsu
318	ZRH19	9	95	AA	CC	GG	-	GG	AA	China	Jiangsu
319	Wansu 321	9	95	GA	TT	-	GA	AG	GA	China	Anhui
320	Zhou 141531	7	35	GG	TT	GG	GG	AA	GG	China	Henan
321	Qian 12AY6	8	70	AA	CC	GG	GG	GG	AA	China	Guizhou
322	Jimai 60	9	90	AA	CC	GG	GG	GG	AA	China	Shandong
323	CB BW 80	2	3	-	TT	GG	AA	GG	AA	CIMMYT	
324	02-204-1-4-4-1	3	1	-	TT	GG	GG	GG	AA	China	
325	Ji 1644	8	60	-	CC	TT	AA	GG	AA	China	Henan
326	Anke 1805	9	100	AA	CC	GG	-	GG	AA	China	Anhui

327	Anke 1403	9	95	-	CC	GG	GG	GG	AA	China	Anhui
328	Jiangmai 186	6	35	-	CC	GG	-	GG	AA	China	Henan
329	Anke 1503	9	100	-	-	GG	GG	GG	AA	China	Anhui
330	Chuanmai 88	5	15	-	CC	TT	AA	AA	GG	China	Sichuan
331	Fenggong 38	7	60	AA	CC	GG	GG	-	AA	China	Henan
332	Clasic	8	90	-	CC	GG	AA	AA	-	China	Shandong
333	CP02-9-3-1-1	8	60	-	CC	GG	GG	GG	AA	China	Beijing
334	Quanmai 31	9	100	-	CC	GG	GG	GG	AA	China	Henan
335	Wanyu 202	8	70	-	CC	-	GG	GG	AA	China	Henan
336	Xumai 021	9	90	-	CC	-	GG	GG	AA	China	Jiangsu
337	Jimai 23	9	90	-	CC	GG	GG	-	AA	China	Shandong
338	Taixue 278	0	0	-	TT	GG	-	AA	GG	China	Henan
339	Zhoumai 26-1	7	40	-	CC	TT	-	GG	AA	China	Henan
340	Guanmai 8	7	60	-	CC	-	GG	GG	AA	China	Henan
341	Xinmai 296	9	90	-	-	GG	AA	AA	GG	China	Shandong
342	Gaoyou 5386	9	80	-	CC	-	GG	GG	AA	China	Hebei
343	Anke 1706	9	90	-	CC	GG	-	GG	-	China	Anhui
344	Gaoyou 5766	9	95	-	-	-	GG	GG	AA	China	Hebei
345	Wanmai 988	5	43	-	-	-	-	GG	-	China	Henan
346	Wenmai 758	6	35	-	-	-	-	-	-	China	Henan
347	Wanmai 788	9	90	-	-	-	-	-	-	China	Henan
348	Yingmao 1	0	0	GG	TT	GG	GA	AA	GG	China	Henan
349	Yuancai -03	1	0	GG	TT	GG	GG	AA	GG	China	Henan
350	Hongxin 1	2	3	AA	TT	GG	GG	AA	GG	China	Henan
351	Lvyuanmai 11	2	1	GG	TT	GG	GG	AA	GG	China	Henan
352	Zhou 11550-2	2	1	GG	TT	GG	GG	GG	AA	China	Henan
353	Huaihe 13068	2	1	GG	CC	GG	AA	AA	GG	China	Jiangsu
354	Xinmai 32	3	0	GG	TT	GG	GG	AA	GG	China	Henan
355	Shanhe 1028	3	10	AA	CC	GG	AA	AA	GG	China	Shanxi
356	Zhou 06045-9	3	10	GG	TT	GG	GG	AA	GG	China	Henan

357	Yumai 668	3	5	AA	CC	GG	GG	GG	AA	China	Henan
358	Bainong 5819	3	10	GG	TT	GG	AA	AA	GG	China	Henan
359	Bainong 219	4	30	GG	TT	GG	GG	AA	GG	China	Henan
360	B120819-1-3-7	4	20	AA	CC	GG	GG	GG	AA	China	Beijing
361	Baimai 589	4	11	GG	TT	GG	GG	AA	GG	China	Henan
362	01-126-2-2-1-1	4	8	AA	CC	GG	GG	GG	AA	China	
363	Xinong 172	4	33	AA	CC	GG	GG	GG	AA	China	Shanxi
364	Yongfeng 103	5	43	AA	CC	GG	GG	GG	GG	China	Henan
365	Pumai 116	5	33	AA	CC	GG	GG	GG	AA	China	Henan
366	Xinmai 35	5	33	AA	CC	GG	GG	GG	AA	China	Henan
367	Zhoumai 36	5	21	AA	CC	GG	GG	GG	AA	China	Henan
368	Yan 16CA55	5	31	AA	CC	GG	GG	GG	AA	China	Henan
369	Shan 2820	5	33	AA	CC	GG	GG	GG	AA	China	Shanxi
370	Xinong 528	5	33	AA	CC	GG	AA	AA	GG	China	Shanxi
371	Xinmai 28	5	33	AA	CC	GG	AA	AA	GG	China	Henan
372	Yi 2011-1	5	23	AA	CC	GG	AA	GG	AA	China	Yunnan
373	Nongda 2011	5	33	AA	CC	GG	GG	GG	AA	China	Beijing
374	Yumai 49	6	53	AA	CC	GG	AA	AA	GG	China	Henan
375	1172	6	40	AA	CC	GG	GG	GG	AA	China	
376	Bainong 307	6	35	AA	CC	GG	GG	GG	AA	China	Henan
377	Yanfeng 172	6	50	AA	CC	GG	GG	GG	AA	China	Henan
378	Cunmai 1	6	35	AA	CC	GG	GG	GG	AA	China	Henan
379	Luokang 3	6	33	AA	CC	GG	GA	AG	GA	China	Henan
380	Liangang 5	6	35	AA	TC	GG	AA	AA	GG	China	
381	Luohan 3	6	60	AA	CC	GG	AA	AA	GG	China	Henan
382	Qiule 6	6	40	AA	CC	GG	AA	AA	GG	China	Henan
383	Shangmai 178	6	40	GG	TT	GG	GG	AA	GG	China	Henan
384	Kenong 5079	7	60	AA	CC	TT	AA	AA	GG	China	Shandong
385	Yunong 902	7	60	GG	TT	GG	GG	AA	GG	China	Henan
386	Yunong 915	7	70	GG	TT	GG	GG	AA	GG	China	Henan

387	Pingan 918	7	80	AA	CC	GG	GG	AA	GG	China	Henan
388	Bainong 5847	7	70	GG	CC	GG	GG	GG	AA	China	Henan
389	Jinli 9	7	60	AA	CC	GG	GG	GG	AA	China	Henan
390	Zhou 06265-2	7	55	AA	CC	GG	GG	GG	AA	China	Henan
391	Zhou 141533-1	7	40	AA	CC	GG	GG	GG	AA	China	Henan
392	Hang 0903	7	70	AA	CC	GG	GG	GG	AA	China	Beijing
393	Kaimai 18	7	70	AA	CC	GG	GG	GG	AA	China	Henan
394	Lunxuan 1568	7	55	AA	CC	GG	GG	GG	AA	China	Henan
395	Senke 09-3	7	60	AA	CC	GG	GG	GG	AA	China	Henan
396	Yunong 186	7	60	AA	CC	GG	GG	GG	AA	China	Henan
397	Lvyuanmai 31	7	60	AA	CC	GG	GG	GG	AA	China	Henan
398	Luomai 66	7	60	AA	CC	GG	GG	GG	AA	China	Henan
399	sdauA12-3-1	7	70	AA	CC	GG	GA	AA	GG	China	Shandong
400	Annong 1676	7	70	AA	CC	GG	GA	GG	AA	China	Anhui
401	Kexing 3302	7	50	AA	CC	GG	AA	AA	GG	China	Henan
402	Xinmai 19	7	40	AA	CC	GG	AA	AA	GG	China	Henan
403	Xinmai 38	7	70	AA	CC	GG	AA	AA	GG	China	Henan
404	Yongminmai 1	7	70	AA	CC	GG	GG	GG	AA	China	Anhui
405	Yanfeng 29	7	40	AA	CC	GG	GG	GG	AA	China	Henan
406	Huaichuan 709	7	50	AA	CC	GG	GG	GG	AA	China	Henan
407	Lunxuan 88	7	40	AA	CC	GG	GG	GG	AA	China	Henan
408	Yunong 923	7	50	AA	CC	GG	GG	GG	AA	China	Henan
409	Fumai 708	7	40	AA	CC	GG	GA	AA	GG	China	Henan
410	Luomai 23	7	60	AA	CC	GG	AA	AA	GG	China	Henan
411	Anke 1605	8	80	AA	CC	TT	AA	AA	GG	China	Anhui
412	Anke 1703	8	85	AA	CC	TT	AA	AA	GG	China	Anhui
413	Hengda 158	8	70	AA	CC	TT	AA	AA	GG	China	Hebei
414	sdauA79-9-2	8	60	GA	TC	GT	AA	AG	GA	China	Shandong
415	Yunong 919	8	80	GG	TT	GG	GG	AA	GG	China	Henan
416	Baofeng 1530	8	90	AA	CC	GG	GG	AG	GA	China	Jiangsu

417	556019	8	70	AA	CC	GG	GG	GG	AA	China	Shandong
418	Henong 904	8	70	AA	CC	GG	GG	GG	AA	China	Hebei
419	Lankao 908	8	80	GG	CC	GG	GG	GG	AA	China	Henan
420	Bainong 1781	8	65	AA	CC	GG	GG	GG	AA	China	Henan
421	A518	8	70	AA	CC	GG	GG	GG	AA	China	Henan
422	Huamai 15080	8	90	AA	CC	GG	GG	GG	AA	China	Henan
423	Luomai 4	8	80	AA	CC	GG	GG	GG	AA	China	Henan
424	Luomai 68	8	70	AA	CC	GG	GG	GG	AA	China	Henan
425	Yunong 910	8	60	AA	CC	GG	GG	GG	AA	China	Henan
426	Y168	8	80	AA	CC	GG	GG	GG	AA	China	
427	Huamai 0772	8	80	AA	CC	GG	GG	GG	AA	China	Henan
428	Lunxuan 204	8	70	AA	CC	GG	GG	GG	AA	China	Henan
429	Luo 10361-2-3	8	80	AA	CC	GG	GG	GG	AA	China	Henan
430	Yunong 914	8	80	AA	CC	GG	AA	AA	GG	China	Henan
431	Guoshengmai 1	8	70	AA	CC	GG	AA	AA	GG	China	Anhui
432	Hemai 0865	8	70	AA	CC	GG	AA	AA	GG	China	Shandong
433	1135	8	50	AA	CC	GG	AA	AA	GG	China	Shandong
434	04Zhong36	8	75	AA	CC	GG	AA	AA	GG	China	Henan
435	Anke 1702	8	65	AA	CC	GG	AA	AA	GG	China	Anhui
436	Guohemai 19	8	90	AA	CC	GG	AA	AA	GG	China	Anhui
437	Jinuo 58	8	70	AA	CC	GG	AA	AA	GG	China	Hebei
438	Pumai 9	8	85	AA	CC	GG	AA	AA	GG	China	Henan
439	Wan 1047	8	80	AA	CC	GG	AA	AA	GG	China	Henan
440	Yumai 18	8	80	AA	CC	GG	AA	AA	GG	China	Henan
441	Zhoumai 33-5	8	60	AA	CC	GG	AA	AA	GG	China	Henan
442	Fanyumai 20	8	60	AA	CC	GG	AA	AA	GA	China	Henan
443	EPC BW 57	8	60	AA	TT	GG	AA	GG	AA	CIMMYT	
444	Yude 1	8	80	AA	CC	GG	AA	GG	AA	China	Henan
445	Chinese Spring	8	50	AA	CC	TT	AA	GG	AA	China	Sichuan
446	Xinmai 807	9	90	GA	TT	TT	GA	AG	GA	China	Shandong

447	Lunxuan 1298ai	9	100	AA	CC	TT	AA	AA	GG	China	Hebei
448	Nongdaheimai	9	100	AA	CC	TT	AA	AA	GG	China	Shanxi
449	Taifenghei 8	9	100	AA	CC	TT	AA	AA	GG	China	Anhui
450	Xumai 029	9	100	GA	CC	GT	GG	GG	AA	China	Jiangsu
451	2014HebeiB29	9	90	GA	TC	GT	GA	AG	AA	China	Hebei
452	Lunxuan 1298	9	100	AA	CC	GT	AA	AA	GG	China	Hebei
453	Yangmai 19	9	90	AA	CC	GG	GG	GG	GG	China	Jiangsu
454	7095	9	95	AA	CC	GG	GG	AA	GG	China	
455	Hansheng 730	9	100	AA	CC	GG	GG	GG	AA	China	Hebei
456	Huaimai 701	9	95	AA	CC	GG	GG	GG	AA	China	Jiangsu
457	Houdemai 602	9	90	AA	CC	GG	GG	GG	AA	China	Henan
458	Luohan 19	9	90	AA	CC	GG	GG	GG	AA	China	Henan
459	Ruihua 556	9	100	AA	CC	GG	GG	GG	AA	China	Jiangsu
460	Keyuan 77	9	90	AA	CC	GG	GG	GG	AA	China	Shandong
461	Jimai 209	9	80	AA	TT	GG	GG	GG	AA	China	Henan
462	WH04-28	9	90	AA	CC	GG	GG	GG	AA	China	Shandong
463	Bainong-zhongda 01	9	90	AA	CC	GG	GG	GG	AA	China	Henan
464	Baomai 1633	9	90	AA	CC	GG	GG	GG	AA	China	Jiangsu
465	Cunmai 633	9	70	AA	CC	GG	GG	GG	AA	China	Henan
466	Fanmai 27	9	100	AA	CC	GG	GG	GG	AA	China	Henan
467	Hefeng 3	9	100	AA	CC	GG	GG	GG	AA	China	Henan
468	Huaimai 608	9	95	AA	CC	GG	GG	GG	AA	China	Jiangsu
469	Ji 1672	9	100	AA	CC	GG	GG	GG	AA	China	Henan
470	Jimai 25	9	65	AA	CC	GG	GG	GG	AA	China	Shandong
471	Jimai 28	9	90	AA	CC	GG	GG	GG	AA	China	Shandong
472	Kemai 2	9	100	AA	CC	GG	GG	GG	AA	China	Henan
473	Lemai 185	9	90	AA	CC	GG	GG	GG	AA	China	Anhui
474	Liangxing 619	9	90	AA	CC	GG	GG	GG	AA	China	Shandong
475	Liangxing 66	9	95	AA	CC	GG	GG	GG	AA	China	Henan
476	Lunxuan 187	9	90	AA	CC	GG	GG	GG	AA	China	Henan

477	Lunyuan 6133	9	80	AA	CC	GG	GG	GG	AA	China	Hebei
478	Luohan 2	9	75	AA	CC	GG	GG	GG	AA	China	Henan
479	Tianmin 168	9	95	AA	CC	GG	GG	GG	AA	China	Henan
480	Xumai 14017	9	100	AA	CC	GG	GG	GG	AA	China	Jiangsu
481	Yanzhan 4110	9	95	AA	CC	GG	GG	GG	AA	China	Henan
482	Yanli 135	9	80	AA	CC	GG	GG	GG	AA	China	Henan
483	Huaimai 4046	9	95	GG	CC	GG	GG	GG	AA	China	Jiangsu
484	Ji 154046	9	95	GG	CC	GG	GG	GG	AA	China	Shandong
485	Tianmin 184	9	100	AA	CC	GG	GG	GG	AA	China	Henan
486	ZRH41	9	100	AA	CC	GG	GG	GG	AA	China	Jiangsu
487	ZRH45	9	90	AA	CC	GG	GG	GG	AA	China	Jiangsu
488	ZRH54	9	95	AA	CC	GG	GG	GG	AA	China	Jiangsu
489	Anke 1302	9	90	AA	CC	GG	GG	GG	AA	China	Anhui
490	Jinuo 200	9	90	AA	CC	GG	GG	GG	AA	China	Hebei
491	Jinhe 16294	9	100	AA	CC	GG	GG	GG	AA	China	Henan
492	Nongmai 126	9	95	AA	CC	GG	GG	GG	AA	China	Jiangsu
493	Shengxuan 5	9	90	AA	CC	GG	GG	GG	AA	China	Jiangsu
494	Shengmai 105	9	100	AA	CC	GG	GG	GG	AA	China	Shandong
495	Yan 16CA138	9	80	AA	CC	GG	GG	GG	AA	China	Henan
496	Yangmai 13	9	85	AA	CC	GG	GG	GG	AA	China	Jiangsu
497	Yangmai 15	9	100	AA	CC	GG	GG	GG	AA	China	Jiangsu
498	Yumai 34	9	90	AA	CC	GG	GG	GG	AA	China	Henan
499	Shinuo 22	9	90	GG	TT	GG	GA	GG	AA	China	Hebei
500	Zhoumai 45	9	90	AA	CC	GG	AA	GG	GG	China	Henan
501	Houdemai 970	9	90	AA	CC	GG	AA	AA	GG	China	Henan
502	Jimai 659	9	90	AA	CC	GG	AA	AA	GG	China	Hebei
503	Shannong 24866	9	95	AA	CC	GG	AA	AA	GG	China	Shandong
504	Yunong 907	9	100	AA	CC	GG	AA	AA	GG	China	Henan
505	Zhoumai 39	9	95	AA	CC	GG	AA	AA	GG	China	Henan
506	JJZ21	9	90	AA	CC	GG	AA	AA	GG	China	Beijing

507	Ji 1638	9	90	AA	CC	GG	AA	AA	GG	China	Henan
508	Fanmai 8	9	80	AA	CC	GG	AA	AA	GG	China	Henan
509	Ji 1673	9	90	AA	CC	GG	AA	AA	GG	China	Henan
510	Jimai 520	9	90	AA	CC	GG	AA	AA	GG	China	Hebei
511	Jishi 1107	9	95	AA	CC	GG	AA	AA	GG	China	Hebei
512	Kenong 1006	9	95	AA	CC	GG	AA	AA	GG	China	Hebei
513	Keyi 10-6014	9	90	AA	CC	GG	AA	AA	GG	China	Beijing
514	Neile 288	9	95	AA	CC	GG	AA	AA	GG	China	Henan
515	Yanke 056	9	80	AA	CC	GG	AA	AA	GG	China	Henan
516	Zhou 08578-15	9	85	GG	CC	GG	AA	AA	GG	China	Henan
517	Henong 5290	9	90	GG	CC	GG	AA	AA	GG	China	Hebei
518	EPC BW 112	9	75	AA	TT	GG	AA	GG	GA	CIMMYT	
519	Ganxiu 1	9	100	GA	CC	GG	AA	AA	GA	China	Hebei
520	9166	9	100	GG	TT	GG	AA	GG	AA	China	Henan
521	Ningchun 47	9	95	AA	TT	GG	AA	GG	AA	China	Ningxia
522	Ningchun 52	9	95	AA	TT	GG	AA	GG	AA	China	Ningxia
523	Zhou 06050-7-1	2	3	GG	TT	GG	GG	AA	GG	China	Henan
524	CBHP 21	2	1	AA	CC	GG	GG	AA	GG	CIMMYT	
525	Jimai 211	4	30	GG	TT	GG	GG	GG	AA	China	Henan
526	Zhoumai 11	4	30	GG	TT	GG	GA	AA	GG	China	Henan
527	Fanmai 0821	4	21	AA	CC	GG	GG	GG	AA	China	Henan
528	Xinong 364	4	11	AA	CC	GG	GG	GG	AA	China	Shanxi
529	Annong 1589	5	31	AA	CC	GG	GG	GG	AA	China	Anhui
530	Fanmai 23	5	31	AA	CC	GG	GG	GG	AA	China	Henan
531	Zhoumai 18	5	31	AA	CC	GG	GG	GG	AA	China	Henan
532	Heiyou 1	5	31	AA	CC	GG	GG	GG	AA	China	Shanxi
533	Zhou 141530s-1	6	41	GG	TT	GG	GG	AA	GG	China	Henan
534	Chenbo 3518	6	25	AA	CC	GG	GG	GG	AA	China	Henan
535	Baomai 8	6	35	AA	CC	GG	AA	GG	AA	China	Hebei
536	Jimai 5172	6	25	AA	CC	GG	GG	GG	AA	China	Shandong

537	Zhou 10178-4	7	60	AA	CC	GG	GG	GG	AA	China	Henan
538	Guomai 169	7	60	AA	CC	GG	GG	GG	AA	China	Anhui
539	Yunong 908	7	55	AA	CC	GG	GG	GG	AA	China	Henan
540	Huake 016	7	60	AA	CC	GG	GA	GG	AA	China	Henan
541	13ZM503	7	55	AA	TT	GG	AA	GG	AA	China	
542	Xinong 162	7	60	AA	CC	GG	GG	GG	AA	China	Shanxi
543	Anke 1704	8	80	AA	TC	TT	AA	AA	GG	China	Anhui
544	Shengmai 118	8	80	GA	TT	GT	GA	AG	GA	China	Shandong
545	Huaihe 16132	8	80	GA	TC	GT	GA	AG	AA	China	Jiangsu
546	Jimai 516	8	85	AA	CC	GG	GG	AA	GG	China	Hebei
547	P6172Ai	8	70	AA	CC	GG	GG	GG	AA	China	Hebei
548	Fengyunmai 7	8	80	AA	CC	GG	GG	GG	AA	China	Henan
549	Shuomai 895	8	70	AA	CC	GG	GG	GG	AA	China	Henan
550	Zhoumai 16	8	50	AA	CC	GG	GG	GG	AA	China	Henan
551	Zhoumai 21	8	70	AA	CC	GG	GG	GG	AA	China	Henan
552	Yunong 901	8	50	AA	CC	GG	GA	GG	AA	China	Henan
553	Zhou 05030-5	8	60	AA	CC	GG	AA	AA	GG	China	Henan
554	Yunong 922	8	70	AA	CC	GG	AA	AA	GG	China	Henan
555	JJZ15	8	70	AA	TT	GG	AA	GG	AA	China	Beijing
556	Q210-3S	9	90	AA	CC	TT	AA	AA	GG	China	Beijing
557	CA13012	9	100	AA	CC	TT	AA	AA	GG	China	Beijing
558	2014HebeiB26	9	100	GA	TC	GT	GA	AG	AA	China	Hebei
559	Zhou 141529-4	9	85	AA	CC	GG	GG	GG	AA	China	Henan
560	Tianmin 198	9	95	AA	CC	GG	GG	GG	AA	China	Henan
561	Xunong 14017	9	100	AA	CC	GG	GG	GG	AA	China	Jiangsu
562	Zhoumai 12	9	90	AA	CC	GG	GG	GG	AA	China	Henan
563	Zhoumai 13	9	70	AA	CC	GG	GG	GG	AA	China	Henan
564	Ji 1603	9	95	AA	CC	GG	GG	GG	AA	China	Henan
565	Dunmai 257	9	95	AA	CC	GG	GG	GG	AA	China	Henan
566	Wangshuibai	9	100	AA	CC	GG	GG	GG	AA	China	Jiangsu

567	Huacheng 5157	9	90	AA	CC	GG	GG	GG	AA	China	Henan
568	Huake 018	9	95	AA	CC	GG	GG	GG	AA	China	Henan
569	Huiyan 1515	9	95	AA	CC	GG	GG	GG	AA	China	Anhui
570	Ji129404	9	100	AA	CC	GG	GG	GG	AA	China	Shandong
571	Yangmai 20	9	100	AA	CC	GG	GA	GG	AA	China	Jiangsu
572	Shengmai 127	9	80	AA	CC	GG	AA	AA	GG	China	Shandong
573	05(607)-28-5	9	80	AA	CC	GG	AA	AA	GG	China	
574	Cunmai 3	9	90	AA	CC	GG	AA	AA	GG	China	Henan
575	Fanyumai 23	9	90	AA	CC	GG	AA	AA	GG	China	Henan
576	Hanmai 14	9	80	AA	CC	GG	AA	AA	GG	China	Hebei
577	Jimai 1	9	100	AA	CC	GG	AA	AA	GG	China	Henan
578	5321	4	40	AA	CC	-	AA	AA	GG	China	Hebei
579	Yunong 905	5	31	AA	CC	GG	-	AA	GG	China	Henan
580	Yunong 906	5	31	AA	CC	GG	-	GG	AA	China	Henan
581	Xinong 1125	5	33	AA	CC	-	GG	AA	GG	China	Shanxi
582	Zhoumai 41	6	51	AA	CC	GG	-	GG	AA	China	Henan
583	Jinmai 44	7	55	AA	CC	GG	GG	GG	-	China	Henan
584	Yunong 918	7	70	GG	TT	GG	-	AA	GG	China	Henan
585	Nongmai 51	7	60	AA	TT	GG	AA	GG	-	China	Henan
586	DPWHY1009	7	65	-	CC	TT	GG	GG	AA	China	Jiangsu
587	GDR7(27-1-1)	8	60	AA	-	GG	GG	GG	AA	France	
588	Jimai 66	8	70	-	TT	GG	GG	GG	AA	China	Henan
589	Zhou 98100-3	8	85	AA	CC	GG	GG	-	AA	China	Henan
590	Anke 1804	8	80	AA	CC	GG	-	GG	AA	China	Anhui
591	Zhoumai 27dasui	8	80	AA	CC	GG	-	GG	AA	China	Henan
592	Bainong 898	8	50	AA	CC	GG	-	GG	AA	China	Henan
593	6420	8	85	AA	TC	-	GG	GG	AA	CIMMYT	
594	6401	8	80	AA	CC	-	GG	GG	AA	CIMMYT	
595	Han 7095	9	80	-	CC	GG	GG	GG	AA	China	Hebei
596	Heng H1217	9	95	-	CC	GG	GG	GG	AA	China	Hebei

597	Ke 0901	9	90	-	CC	GG	GG	GG	AA	China	Henan
598	Yumai 2	9	90	AA	CC	GG	-	AA	GG	China	Henan
599	Anke 157	9	100	AA	-	GG	AA	AA	GG	China	Anhui
600	Cunmai 2	9	90	AA	CC	GG	AA	AA	-	China	Henan
601	Quanmai 725	9	90	GG	TT	-	GG	AA	GG	China	Henan
602	Yu 1768	6	13	AA	CC	GG	GG	GG	AA	China	Chongqing
603	Dunmai 259	8	85	AA	CC	GG	GG	GG	GG	China	Henan
604	Huiyan 66	9	100	AA	CC	GG	AA	AA	GG	China	Anhui
605	Henong 633	9	100	AA	CC	GG	GA	AG	GA	China	Hebei
606	Xunong 7	9	80	AA	CC	TT	GG	GG	AA	China	Henan
607	Gaoyou 1718	9	80	AA	CC	GG	GG	GG	AA	China	Hebei
608	Tianmin E009	9	95	AA	CC	GG	GG	GG	AA	China	Henan
609	MY0037	2	1	GG	TT	GG	-	AA	GG	China	Sichuan
610	Xinong 38	5	23	-	CC	GG	GG	GG	AA	China	Shanxi
611	Aozhouruojin 4	7	80	-	CC	TT	AA	AA	GG	Australia	
612	Wanmai 19	7	60	-	CC	GG	AA	AA	GG	China	Anhui
613	Aozhouruojin 1	7	45	-	CC	GG	GA	GG	AA	Australia	
614	Zhoumai 24	8	60	AA	CC	-	GG	GG	AA	China	Henan
615	Yangmai 158	9	100	-	CC	TT	AA	AA	GG	China	Jiangsu
616	Xinongheidsui	9	100	-	TT	GG	AA	GG	AA	China	Shanxi
617	Hannong 1412	9	90	-	CC	GG	GG	GG	AA	China	Hebei
618	Shannong 15381	9	95	-	CC	GG	GG	GG	AA	China	Shandong
619	Shannong 29wumang	9	95	-	CC	GG	GG	GG	AA	China	Shandong
620	Shannong 981	9	100	-	CC	GG	GG	GG	AA	China	Henan
621	Anke 1701	9	90	AA	CC	GG	-	GG	AA	China	Anhui
622	Yunong 916	9	90	AA	CC	GG	-	GG	AA	China	Henan
623	Wanheimai 210	9	90	-	CC	GG	GG	GG	AA	China	Henan
624	Xinmai 79	9	90	-	CC	GG	GG	GG	AA	China	Henan
625	6424	8	80	AA	TT	-	AA	GG	-	CIMMYT	
626	6421	8	85	AA	-	-	GG	GG	AA	CIMMYT	

627	6419	8	75	-	TT	-	GA	GG	AA	CIMMYT	
628	Zhoumai 38	9	65	-	TT	-	AA	GG	AA	China	Henan
629	Anke 1506	9	90	-	-	GG	GG	GG	AA	China	Anhui
630	Baoqun 6	7	75	AA	CC	GG	GG	GG	AA	China	Jiangsu
631	Guomai 1212	3	5	-	TT	TT	GG	AA	GG	China	Anhui
632	Xinnong 9799	5	33	-	CC	TT	GG	GG	AA	China	Henan
633	Hangyu 33	7	55	-	TT	GG	GG	GG	AA	China	Henan
634	Xianmai 16	7	60	-	CC	TT	GG	GG	AA	China	Henan
635	JJZ16	7	55	-	CC	GG	GG	GG	AA	China	Beijing
636	Tianbao 6	8	70	-	TT	GG	AA	GG	AA	China	Henan
637	Ningchun 46	8	70	-	TT	GG	AA	GG	AA	China	Ningxia
638	Nongda 3753	9	100	-	CC	TT	AA	AG	GG	China	Beijing
639	Shangmai 168	9	90	-	TT	GG	GG	GG	AA	China	Henan
640	Zhoumai 25	7	60	AA	CC	-	-	GG	AA	China	Henan
641	Zhoumai 44	7	40	-	CC	GG	-	GG	AA	China	Henan
642	Fumai 701	9	80	-	CC	-	GG	AA	GG	China	Henan
643	Xiaoheimai/zhou13F2-1	9	100	GG	-	-	AA	GG	AA	China	Henan
644	Hemei 988	9	95	AA	CC	-	-	GG	AA	China	Henan
645	Taihemai 2	2	1	-	TT	GG	GG	AA	GG	China	Henan
646	Ruihua 055	6	40	-	CC	GG	GG	GG	AA	China	Jiangsu
647	Xinmai 616	6	33	-	CC	GG	GG	GG	AA	China	Shandong
648	Sumai 3	9	90	-	CC	TT	AA	AA	GG	China	Jiangsu
649	2014HebeiA20	9	95	-	CC	GG	GG	GG	AA	China	Hebei
650	Caizhi 16	9	100	-	CC	GG	GG	GG	AA	China	Henan
651	Ruihua 502	9	100	-	CC	GG	GG	GG	AA	China	Jiangsu
652	Taikemai 493	9	95	-	CC	GG	GG	GG	AA	China	Shandong
653	Taikemai 5003	9	90	-	CC	GG	GG	GG	AA	China	Shandong
654	Wan 1366	4	33	-	CC	-	GG	GG	AA	China	Henan
655	Xinmai 26R-1	7	60	-	CC	-	AA	AA	GG	China	Henan
656	Aozhouruojin 2	7	60	-	CC	GG	GG	GG	-	Australia	

657	Cunmai 5	7	50	AA	TC	GT	AA	-	-	China	Henan
658	Xinong 99	8	60	-	CC	-	GG	GG	AA	China	Shanxi
659	Fumai 13	9	90	-	CC	-	AA	AA	GG	China	Anhui
660	Xiangmai 182	9	90	-	CC	-	AA	AA	GG	China	Henan
661	Binmai 6	9	95	-	CC	GG	-	GG	AA	China	Shanxi
662	Fanmai 5	9	95	-	CC	GG	-	GG	AA	China	Henan
663	Dapingyuan 1	9	90	-	CC	GG	-	GG	AA	China	Henan
664	Jichuang 28	7	55	-	TT	GG	AA	-	-	China	Henan
665	Taihemai 6	4	30	-	TT	-	GG	AA	GG	China	Henan
666	Wan 1633	5	35	-	CC	-	GG	GG	AA	China	Henan
667	Xumai DH9	6	53	-	TT	-	GG	AA	GG	China	Jiangsu
668	Aozhouruojin 7	6	40	GG	-	GG	-	GG	AA	Australia	
669	Zhoumai 30	9	80	-	CC	-	GG	AA	GG	China	Henan
670	Anke 1802	9	95	-	CC	TT	-	GG	AA	China	Anhui
671	Chuan 12147	9	100	-	CC	GG	-	GG	AA	China	Sichuan
672	Daimai 4493	9	100	-	CC	-	GG	GG	AA	China	Shandong
673	Emai 580	9	100	-	CC	GG	AA	-	AA	China	Hubei
674	Xinong 388	5	31	-	CC	-	GG	AA	-	China	Shanxi
675	Fanyumai 17	5	33	-	CC	-	-	GG	AA	China	Henan
676	Luomai 163	7	60	AA	-	GT	GG	-	-	China	Henan
677	Shuomai 988	9	90	AA	-	GT	-	-	-	China	Henan
678	Xinong 285	6	53	-	-	-	AA	AA	GG	China	Shanxi
679	Xumai 15019	6	53	-	CC	-	GG	GG	-	China	Jiangsu
680	Xinmai 36	6	40	-	-	-	GG	GG	AA	China	Henan
681	Lunxuan 2000	7	70	AA	-	-	AA	GG	-	China	Henan
682	Xumai 15135	7	55	-	TT	TT	-	AA	-	China	Jiangsu
683	Lemai 558	7	70	-	-	-	GG	GG	AA	China	Anhui
684	Taixue 518	7	60	-	-	-	GG	GG	AA	China	Henan
685	Taikemai 35	9	100	-	-	-	AA	AA	GG	China	Shandong
686	Wanhongbian 759	9	70	-	CC	-	GG	GG	-	China	Anhui

687	Danmai 118	9	90	-	CC	-	-	GG	AA	China	Henan
688	Xuke 299	5	33	-	-	-	-	AA	GG	China	Henan
689	Xinong 625	5	31	-	-	-	GG	GG	-	China	Shanxi
690	Dasuidali	8	80	-	TC	-	AA	-	-	China	
691	Tianmin 13E009	9	90	-	-	-	GG	GG	-	China	Henan
692	AN01	9	90	AA	-	GG	-	-	-	China	
693	NMAS33	6	53	AA	-	-	-	-	-	China	Sichuan
694	Wenmai 968	6	45	-	-	-	-	GG	-	China	Henan
695	Shengke 188	7	55	-	-	-	-	GG	-	China	Henan
696	ZRH1	8	80	-	-	GT	-	-	-	China	Jiangsu
697	Lumai 21	9	90	AA	-	-	-	-	-	China	Shandong
698	2014HebeiB30	9	90	GG	-	-	-	-	-	China	Hebei
699	Huazhan 166	7	35	-	-	-	-	-	-	China	Henan
700	Weilong 169	5	31	-	-	-	-	-	-	China	Shanxi
701	Xiansheng 178	8	80	-	-	-	-	-	-	China	Henan
702	Anke 1801	9	95	-	-	-	-	-	-	China	Anhui
703	Taikemai 308	9	100	-	-	-	-	-	-	China	Shandong
704	Xinongheimai	9	100	-	-	-	-	-	-	China	Shanxi
705	Xinmai 46	9	90	-	-	-	-	-	-	China	Henan
706	Wanmai 50	3	20	AA	CC	GG	GG	GG	GA	China	Henan
707	2014HebeiB27	9	80	AA	CC	GG	GA	GG	AA	China	Hebei
708	6423	9	85	AA	CC	-	AA	AA	GG	CIMMYT	
709	Zhengmai 366	6	41	AA	CC	GG	AA	AA	GG	China	Henan
710	Zhoumai 13douDNA	7	45	AA	CC	GG	AA	GG	AA	China	Henan
711	Shiai 1	9	100	GG	CC	GG	GA	GG	AA	China	Hebei
712	Zhou 8425B-5-2	7	60	GG	TT	-	-	AA	GG	China	Henan

The ‘-’ symbols indicated accession not detected by the marker. ‘Aozhouruojin’ was an anonymous germplasm from Australia.

Table S7 – Haplotype analysis of *QYr.hau-7B* region in 712 wheat accessions.

Haplotype	N	Proportion (%)	IT		DS	
			Mean	Range	Mean	Range
Hap1	212	44.4	7.4ab±1.8	1~9	65.6ab±29.3	0~100
Hap2	106	22.2	7.2ab±2.2	0~9	65.7ab±30.6	0~100
Hap3	97	20.3	3.3de±2.2	0~9	18.1c±23.5	0~90
Hap4	11	2.3	4.3cde±3.0	1~9	29.1bc±38.8	0~100
Hap5	31	6.5	5.1bcd±2.7	0~9	34.9bc±31.0	0~95
Hap6	9	1.9	5.1bcd±2.8	2~9	38.3bc±35.3	1~90
Hap7	5	1	6.8abc±2.7	3~9	61.8ab±39.3	1~90
Hap8	5	1	8.4a±0.9	7~9	88.0a±12.5	70~100
Hap9	1	0.2	2.0e	2~2	1.0c	1~1

Table S8 – Haplotype data of SNP markers within the *QYr.hau-7B* regions in 291 RIL from the YN1813 × CS population.

Lines	DS average	<i>AX-110908486</i>	<i>AX-89658728</i>	<i>AX-109915196</i>	<i>AX-89540697</i>	<i>AX-110389273</i>	<i>AX-109489314</i>	Haplotype
B027	3	GG	TT	TT	TT	GG	TT	Hap1
B103	0.7	GG	TT	TT	TT	GG	TT	Hap1
B129	3.3	GG	TT	TT	TT	GG	TT	Hap1
B130	1.5	GG	TT	TT	TT	GG	TT	Hap1
B195	2.2	GG	TT	TT	TT	GG	TT	Hap1
B294	4.8	GG	TT	TT	TT	GG	TT	Hap1
B304	2.5	GG	TT	TT	TT	GG	TT	Hap1
B282	80.9	GG	TT	GG	CC	AA	CC	Hap2
B002	1	GG	TT	GG	CC	AA	CC	Hap2
B004	6.5	GG	TT	GG	CC	AA	CC	Hap2
B007	4	GG	TT	GG	CC	AA	CC	Hap2
B009	14.7	GG	TT	GG	CC	AA	CC	Hap2
B010	0.7	GG	TT	GG	CC	AA	CC	Hap2
B011	2.2	GG	TT	GG	CC	AA	CC	Hap2
B012	2	GG	TT	GG	CC	AA	CC	Hap2
B014	2.7	GG	TT	GG	CC	AA	CC	Hap2
B016	38.3	GG	TT	GG	CC	AA	CC	Hap2
B018	4.9	GG	TT	GG	CC	AA	CC	Hap2
B019	6.6	GG	TT	GG	CC	AA	CC	Hap2
B020	28.3	GG	TT	GG	CC	AA	CC	Hap2
B024	0.7	GG	TT	GG	CC	AA	CC	Hap2
B032	70	GG	TT	GG	CC	AA	CC	Hap2
B034	1	GG	TT	GG	CC	AA	CC	Hap2
B035	0.5	GG	TT	GG	CC	AA	CC	Hap2
B039	14.8	GG	TT	GG	CC	AA	CC	Hap2
B045	3.8	GG	TT	GG	CC	AA	CC	Hap2
B046	1.8	GG	TT	GG	CC	AA	CC	Hap2
B047	13.4	GG	TT	GG	CC	AA	CC	Hap2

B050	7.5	GG	TT	GG	CC	AA	CC	Hap2
B051	22.2	GG	TT	GG	CC	AA	CC	Hap2
B054	0.8	GG	TT	GG	CC	AA	CC	Hap2
B055	0.8	GG	TT	GG	CC	AA	CC	Hap2
B060	9.8	GG	TT	GG	CC	AA	CC	Hap2
B061	0.8	GG	TT	GG	CC	AA	CC	Hap2
B064	31.6	GG	TT	GG	CC	AA	CC	Hap2
B067	26.2	GG	TT	GG	CC	AA	CC	Hap2
B073	0.8	GG	TT	GG	CC	AA	CC	Hap2
B076	2.8	GG	TT	GG	CC	AA	CC	Hap2
B077	7.7	GG	TT	GG	CC	AA	CC	Hap2
B078	12.2	GG	TT	GG	CC	AA	CC	Hap2
B079	1.5	GG	TT	GG	CC	AA	CC	Hap2
B080	2.7	GG	TT	GG	CC	AA	CC	Hap2
B081	14.8	GG	TT	GG	CC	AA	CC	Hap2
B082	25.9	GG	TT	GG	CC	AA	CC	Hap2
B084	0.8	GG	TT	GG	CC	AA	CC	Hap2
B085	6.9	GG	TT	GG	CC	AA	CC	Hap2
B086	1.5	GG	TT	GG	CC	AA	CC	Hap2
B087	1.3	GG	TT	GG	CC	AA	CC	Hap2
B088	8	GG	TT	GG	CC	AA	CC	Hap2
B090	10.1	GG	TT	GG	CC	AA	CC	Hap2
B093	27.8	GG	TT	GG	CC	AA	CC	Hap2
B094	0.8	GG	TT	GG	CC	AA	CC	Hap2
B096	1.9	GG	TT	GG	CC	AA	CC	Hap2
B097	2.6	GG	TT	GG	CC	AA	CC	Hap2
B098	0.9	GG	TT	GG	CC	AA	CC	Hap2
B099	4.5	GG	TT	GG	CC	AA	CC	Hap2
B100	2.7	GG	TT	GG	CC	AA	CC	Hap2
B101	4.4	GG	TT	GG	CC	AA	CC	Hap2

B102	1.7	GG	TT	GG	CC	AA	CC	Hap2
B104	2.5	GG	TT	GG	CC	AA	CC	Hap2
B105	0.8	GG	TT	GG	CC	AA	CC	Hap2
B108	20.2	GG	TT	GG	CC	AA	CC	Hap2
B109	67.8	GG	TT	GG	CC	AA	CC	Hap2
B111	1	GG	TT	GG	CC	AA	CC	Hap2
B112	0.7	GG	TT	GG	CC	AA	CC	Hap2
B116	1.9	GG	TT	GG	CC	AA	CC	Hap2
B117	39.2	GG	TT	GG	CC	AA	CC	Hap2
B120	56.7	GG	TT	GG	CC	AA	CC	Hap2
B122	3	GG	TT	GG	CC	AA	CC	Hap2
B126	11.6	GG	TT	GG	CC	AA	CC	Hap2
B127	18	GG	TT	GG	CC	AA	CC	Hap2
B131	1.4	GG	TT	GG	CC	AA	CC	Hap2
B132	20.4	GG	TT	GG	CC	AA	CC	Hap2
B133	10.2	GG	TT	GG	CC	AA	CC	Hap2
B136	12.1	GG	TT	GG	CC	AA	CC	Hap2
B138	28.5	GG	TT	GG	CC	AA	CC	Hap2
B141	1.3	GG	TT	GG	CC	AA	CC	Hap2
B145	24.2	GG	TT	GG	CC	AA	CC	Hap2
B146	0.8	GG	TT	GG	CC	AA	CC	Hap2
B150	0.3	GG	TT	GG	CC	AA	CC	Hap2
B151	0.7	GG	TT	GG	CC	AA	CC	Hap2
B152	27.2	GG	TT	GG	CC	AA	CC	Hap2
B153	0.9	GG	TT	GG	CC	AA	CC	Hap2
B157	6.5	GG	TT	GG	CC	AA	CC	Hap2
B159	2.3	GG	TT	GG	CC	AA	CC	Hap2
B160	0.7	GG	TT	GG	CC	AA	CC	Hap2
B161	5.6	GG	TT	GG	CC	AA	CC	Hap2
B165	16.3	GG	TT	GG	CC	AA	CC	Hap2

B167	0.7	GG	TT	GG	CC	AA	CC	Hap2
B169	1.9	GG	TT	GG	CC	AA	CC	Hap2
B170	1.1	GG	TT	GG	CC	AA	CC	Hap2
B171	3.9	GG	TT	GG	CC	AA	CC	Hap2
B172	2.6	GG	TT	GG	CC	AA	CC	Hap2
B174	70.3	GG	TT	GG	CC	AA	CC	Hap2
B176	6.7	GG	TT	GG	CC	AA	CC	Hap2
B177	6	GG	TT	GG	CC	AA	CC	Hap2
B178	3	GG	TT	GG	CC	AA	CC	Hap2
B180	31.4	GG	TT	GG	CC	AA	CC	Hap2
B181	19.1	GG	TT	GG	CC	AA	CC	Hap2
B182	4.9	GG	TT	GG	CC	AA	CC	Hap2
B185	1.7	GG	TT	GG	CC	AA	CC	Hap2
B186	14.2	GG	TT	GG	CC	AA	CC	Hap2
B188	11.6	GG	TT	GG	CC	AA	CC	Hap2
B190	1.2	GG	TT	GG	CC	AA	CC	Hap2
B192	3.9	GG	TT	GG	CC	AA	CC	Hap2
B193	14.6	GG	TT	GG	CC	AA	CC	Hap2
B200	6.1	GG	TT	GG	CC	AA	CC	Hap2
B205	3.8	GG	TT	GG	CC	AA	CC	Hap2
B206	23.4	GG	TT	GG	CC	AA	CC	Hap2
B208	3.2	GG	TT	GG	CC	AA	CC	Hap2
B209	1.7	GG	TT	GG	CC	AA	CC	Hap2
B211	2.3	GG	TT	GG	CC	AA	CC	Hap2
B212	2.2	GG	TT	GG	CC	AA	CC	Hap2
B214	16.2	GG	TT	GG	CC	AA	CC	Hap2
B215	29.9	GG	TT	GG	CC	AA	CC	Hap2
B216	6.7	GG	TT	GG	CC	AA	CC	Hap2
B221	56.7	GG	TT	GG	CC	AA	CC	Hap2
B222	2.4	GG	TT	GG	CC	AA	CC	Hap2

B223	40.9	GG	TT	GG	CC	AA	CC	Hap2
B225	60.6	GG	TT	GG	CC	AA	CC	Hap2
B226	0.7	GG	TT	GG	CC	AA	CC	Hap2
B228	63.1	GG	TT	GG	CC	AA	CC	Hap2
B229	60.3	GG	TT	GG	CC	AA	CC	Hap2
B233	18.3	GG	TT	GG	CC	AA	CC	Hap2
B234	2.4	GG	TT	GG	CC	AA	CC	Hap2
B235	12.1	GG	TT	GG	CC	AA	CC	Hap2
B236	0.7	GG	TT	GG	CC	AA	CC	Hap2
B237	0.8	GG	TT	GG	CC	AA	CC	Hap2
B238	2.2	GG	TT	GG	CC	AA	CC	Hap2
B239	1.2	GG	TT	GG	CC	AA	CC	Hap2
B242	1	GG	TT	GG	CC	AA	CC	Hap2
B244	3.4	GG	TT	GG	CC	AA	CC	Hap2
B246	1.6	GG	TT	GG	CC	AA	CC	Hap2
B247	0.7	GG	TT	GG	CC	AA	CC	Hap2
B250	0.7	GG	TT	GG	CC	AA	CC	Hap2
B251	0.7	GG	TT	GG	CC	AA	CC	Hap2
B252	0.8	GG	TT	GG	CC	AA	CC	Hap2
B254	1	GG	TT	GG	CC	AA	CC	Hap2
B258	3.8	GG	TT	GG	CC	AA	CC	Hap2
B260	2.8	GG	TT	GG	CC	AA	CC	Hap2
B261	5.5	GG	TT	GG	CC	AA	CC	Hap2
B262	15.6	GG	TT	GG	CC	AA	CC	Hap2
B263	1.8	GG	TT	GG	CC	AA	CC	Hap2
B264	1.2	GG	TT	GG	CC	AA	CC	Hap2
B266	6.4	GG	TT	GG	CC	AA	CC	Hap2
B267	0.5	GG	TT	GG	CC	AA	CC	Hap2
B269	6.5	GG	TT	GG	CC	AA	CC	Hap2
B270	15.8	GG	TT	GG	CC	AA	CC	Hap2

B271	1.5	GG	TT	GG	CC	AA	CC	Hap2
B272	3.6	GG	TT	GG	CC	AA	CC	Hap2
B277	1.4	GG	TT	GG	CC	AA	CC	Hap2
B279	0.7	GG	TT	GG	CC	AA	CC	Hap2
B281	19.7	GG	TT	GG	CC	AA	CC	Hap2
B283	9.1	GG	TT	GG	CC	AA	CC	Hap2
B284	53.7	GG	TT	GG	CC	AA	CC	Hap2
B288	1.3	GG	TT	GG	CC	AA	CC	Hap2
B289	1	GG	TT	GG	CC	AA	CC	Hap2
B295	0.7	GG	TT	GG	CC	AA	CC	Hap2
B298	4.8	GG	TT	GG	CC	AA	CC	Hap2
B302	12.9	GG	TT	GG	CC	AA	CC	Hap2
B303	0.8	GG	TT	GG	CC	AA	CC	Hap2
B306	0.9	GG	TT	GG	CC	AA	CC	Hap2
B189	4.2	GG	TT	GG	CC	AA	CC	Hap2
B069	23.6	GG	TT	GG	CC	AA	CC	Hap2
B143	2.3	GG	TT	GG	CC	AA	CC	Hap2
B265	13.1	GG	TT	GG	CC	AA	CC	Hap2
B005	38.3	AA	CC	TT	TT	GG	TT	Hap3
B006	40.3	AA	CC	TT	TT	GG	TT	Hap3
B008	34.7	AA	CC	TT	TT	GG	TT	Hap3
B013	14.4	AA	CC	TT	TT	GG	TT	Hap3
B015	51.3	AA	CC	TT	TT	GG	TT	Hap3
B021	3.4	AA	CC	TT	TT	GG	TT	Hap3
B022	64.4	AA	CC	TT	TT	GG	TT	Hap3
B023	57.5	AA	CC	TT	TT	GG	TT	Hap3
B026	68.9	AA	CC	TT	TT	GG	TT	Hap3
B028	1.8	AA	CC	TT	TT	GG	TT	Hap3
B029	19.1	AA	CC	TT	TT	GG	TT	Hap3
B030	1.3	AA	CC	TT	TT	GG	TT	Hap3

B031	1.5	AA	CC	TT	TT	GG	TT	Hap3
B033	81.1	AA	CC	TT	TT	GG	TT	Hap3
B036	85.6	AA	CC	TT	TT	GG	TT	Hap3
B037	12.6	AA	CC	TT	TT	GG	TT	Hap3
B038	57.8	AA	CC	TT	TT	GG	TT	Hap3
B040	44.4	AA	CC	TT	TT	GG	TT	Hap3
B042	69.4	AA	CC	TT	TT	GG	TT	Hap3
B044	8.2	AA	CC	TT	TT	GG	TT	Hap3
B048	77.8	AA	CC	TT	TT	GG	TT	Hap3
B049	70	AA	CC	TT	TT	GG	TT	Hap3
B056	76.7	AA	CC	TT	TT	GG	TT	Hap3
B057	67	AA	CC	TT	TT	GG	TT	Hap3
B059	30.1	AA	CC	TT	TT	GG	TT	Hap3
B062	67.8	AA	CC	TT	TT	GG	TT	Hap3
B065	86.7	AA	CC	TT	TT	GG	TT	Hap3
B066	12.6	AA	CC	TT	TT	GG	TT	Hap3
B068	55.6	AA	CC	TT	TT	GG	TT	Hap3
B070	9.9	AA	CC	TT	TT	GG	TT	Hap3
B071	40	AA	CC	TT	TT	GG	TT	Hap3
B074	21.7	AA	CC	TT	TT	GG	TT	Hap3
B075	10.1	AA	CC	TT	TT	GG	TT	Hap3
B083	16.1	AA	CC	TT	TT	GG	TT	Hap3
B089	65.6	AA	CC	TT	TT	GG	TT	Hap3
B092	26.3	AA	CC	TT	TT	GG	TT	Hap3
B095	71.1	AA	CC	TT	TT	GG	TT	Hap3
B106	32.2	AA	CC	TT	TT	GG	TT	Hap3
B114	3.1	AA	CC	TT	TT	GG	TT	Hap3
B115	12.6	AA	CC	TT	TT	GG	TT	Hap3
B118	5.9	AA	CC	TT	TT	GG	TT	Hap3
B123	8.9	AA	CC	TT	TT	GG	TT	Hap3

B124	30.6	AA	CC	TT	TT	GG	TT	Hap3
B125	16	AA	CC	TT	TT	GG	TT	Hap3
B128	60.6	AA	CC	TT	TT	GG	TT	Hap3
B134	13.5	AA	CC	TT	TT	GG	TT	Hap3
B135	40.3	AA	CC	TT	TT	GG	TT	Hap3
B137	62.2	AA	CC	TT	TT	GG	TT	Hap3
B139	6.4	AA	CC	TT	TT	GG	TT	Hap3
B140	12	AA	CC	TT	TT	GG	TT	Hap3
B142	9.6	AA	CC	TT	TT	GG	TT	Hap3
B144	5.1	AA	CC	TT	TT	GG	TT	Hap3
B147	25	AA	CC	TT	TT	GG	TT	Hap3
B148	75.6	AA	CC	TT	TT	GG	TT	Hap3
B154	9	AA	CC	TT	TT	GG	TT	Hap3
B155	1	AA	CC	TT	TT	GG	TT	Hap3
B156	29	AA	CC	TT	TT	GG	TT	Hap3
B158	20.3	AA	CC	TT	TT	GG	TT	Hap3
B163	43.9	AA	CC	TT	TT	GG	TT	Hap3
B164	70.8	AA	CC	TT	TT	GG	TT	Hap3
B166	57.2	AA	CC	TT	TT	GG	TT	Hap3
B168	7.2	AA	CC	TT	TT	GG	TT	Hap3
B175	10	AA	CC	TT	TT	GG	TT	Hap3
B179	6.1	AA	CC	TT	TT	GG	TT	Hap3
B184	5.8	AA	CC	TT	TT	GG	TT	Hap3
B187	19.3	AA	CC	TT	TT	GG	TT	Hap3
B191	9.3	AA	CC	TT	TT	GG	TT	Hap3
B194	18.7	AA	CC	TT	TT	GG	TT	Hap3
B197	63.3	AA	CC	TT	TT	GG	TT	Hap3
B198	66.4	AA	CC	TT	TT	GG	TT	Hap3
B199	13.4	AA	CC	TT	TT	GG	TT	Hap3
B201	8	AA	CC	TT	TT	GG	TT	Hap3

B202	5.9	AA	CC	TT	TT	GG	TT	Hap3
B203	26.1	AA	CC	TT	TT	GG	TT	Hap3
B210	23.7	AA	CC	TT	TT	GG	TT	Hap3
B213	4	AA	CC	TT	TT	GG	TT	Hap3
B217	58.3	AA	CC	TT	TT	GG	TT	Hap3
B218	31	AA	CC	TT	TT	GG	TT	Hap3
B219	14.1	AA	CC	TT	TT	GG	TT	Hap3
B220	12.8	AA	CC	TT	TT	GG	TT	Hap3
B224	1.1	AA	CC	TT	TT	GG	TT	Hap3
B227	47.5	AA	CC	TT	TT	GG	TT	Hap3
B230	33.1	AA	CC	TT	TT	GG	TT	Hap3
B231	13.3	AA	CC	TT	TT	GG	TT	Hap3
B232	34.7	AA	CC	TT	TT	GG	TT	Hap3
B240	3.1	AA	CC	TT	TT	GG	TT	Hap3
B241	17.2	AA	CC	TT	TT	GG	TT	Hap3
B243	88.9	AA	CC	TT	TT	GG	TT	Hap3
B245	11.5	AA	CC	TT	TT	GG	TT	Hap3
B253	37.5	AA	CC	TT	TT	GG	TT	Hap3
B255	8.4	AA	CC	TT	TT	GG	TT	Hap3
B256	9.6	AA	CC	TT	TT	GG	TT	Hap3
B257	40.6	AA	CC	TT	TT	GG	TT	Hap3
B259	4.9	AA	CC	TT	TT	GG	TT	Hap3
B268	4.6	AA	CC	TT	TT	GG	TT	Hap3
B273	11.4	AA	CC	TT	TT	GG	TT	Hap3
B274	67.5	AA	CC	TT	TT	GG	TT	Hap3
B275	31.8	AA	CC	TT	TT	GG	TT	Hap3
B276	5.1	AA	CC	TT	TT	GG	TT	Hap3
B278	91.7	AA	CC	TT	TT	GG	TT	Hap3
B280	7.9	AA	CC	TT	TT	GG	TT	Hap3
B285	10.7	AA	CC	TT	TT	GG	TT	Hap3

B286	8.2	AA	CC	TT	TT	GG	TT	Hap3
B287	65.6	AA	CC	TT	TT	GG	TT	Hap3
B290	55.6	AA	CC	TT	TT	GG	TT	Hap3
B291	24.1	AA	CC	TT	TT	GG	TT	Hap3
B293	17.8	AA	CC	TT	TT	GG	TT	Hap3
B296	47.5	AA	CC	TT	TT	GG	TT	Hap3
B297	8.3	AA	CC	TT	TT	GG	TT	Hap3
B299	28.7	AA	CC	TT	TT	GG	TT	Hap3
B300	1.3	AA	CC	TT	TT	GG	TT	Hap3
B308	17.6	AA	CC	TT	TT	GG	TT	Hap3
B091	31.1	AA	CC	TT	TT	GG	TT	Hap3
B183	0.7	AA	CC	TT	TT	GG	TT	Hap3
B001	21.2	AA	CC	TT	TT	GG	TT	Hap3
B063	33.4	AA	CC	TT	TT	GG	TT	Hap3
B072	43.1	AA	CC	TT	TT	GG	TT	Hap3
B249	80.9	AA	CC	TT	TT	GG	TT	Hap3
B110	55.8	GG	CC	TT	TT	GG	TT	Hap3
B003	6.1	AA	CC	GG	CC	AA	CC	Hap4
B162	85	AA	CC	GG	CC	AA	CC	Hap4
B248	70	AA	CC	GG	CC	AA	CC	Hap4
B292	65	AA	CC	GG	CC	AA	CC	Hap4
B305	42.2	AA	CC	GG	CC	AA	CC	Hap4
B149	70.6	AA	CC	GG	CC	GG	TT	Hap5

Table S9 – All SNP markers in the *QYr.hau-7B* target interval detected in the 55K SNP array.

SNP marker	Physical position (Mb)	YN1813	Chinese Spring
AX-110908486	720524250	AA	GG
AX-109923143	720554784	CC	NA
AX-109905890	720815401	GG	CC
AX-110976823	721086658	AA	GG
AX-89658728	721217470	CC	TT
AX-111168714	721413907	TT	TT
AX-110432774	721691405	GG	GG
AX-108871397	721818700	TT	TT
AX-111758108	722089981	CC	CC
AX-111521867	722311810	GG	GG
AX-110958947	722316927	TT	TT
AX-109861863	722675213	CC	CC
AX-111801031	723081226	CC	CC
AX-108733479	723131487	AA	AA
AX-110595065	723154865	GG	GG
AX-110442356	723329282	AA	AA
AX-111559741	723395642	AA	AA
AX-109583510	723465795	TT	TT
AX-111042826	723551550	CC	CC
AX-110675387	723719673	AA	AA
AX-110027999	723732430	GG	GG
AX-111596124	723743228	GG	GG
AX-108957944	723902640	TT	TT
AX-109887886	723909545	GG	GG
AX-111206404	723933996	TT	TT
AX-109965615	723936247	GG	GG
AX-111649828	723971340	AA	AA

AX-111648743	724152840	AA	AA
AX-110534826	724171305	CC	CC
AX-110506527	724173491	GG	GG
AX-109926256	724178431	TT	TT
AX-110432281	724286513	AA	AA
AX-111459110	724792076	GG	GG
AX-110994137	725096363	AA	AA
AX-109352027	725196368	CC	CC
AX-109915196	725369389	TT	GG
AX-89540697	725377238	TT	CC
AX-109823501	725441472	GG	GG
AX-110959335	725660768	CC	CC
AX-110389273	725711247	GG	AA
AX-109489314	725724576	TT	CC

The markers of the orange background were QTL flanking markers; the genotype of the orange background showed no polymorphism among the parents.