

Identification of seedling and slow rusting resistance genes to leaf rust in wheat cultivars from Yellow-Huai Basin in China

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Electronic Supplementary Material (ESM)

The authors are fully responsible for both the content and the formal aspects of the electronic supplementary material. No editorial adjustments were made.

2 Table S1. The pedigree and origin of 108 wheat cultivars tested for leaf rust response from two regions in China

Code	Cultivar/genotype	Pedigree	Origin	Code	Cultivar/genotype	Pedigree	Origin
1	Lumai 20	704-92-1	Shandong	55	Jinan 13	Baiourou//Huixianhong/A'bo	Shandong
2	Zhongmai 875	Zhoumai 16/Likeng 4	Beijing	56	Lumai 3	Lovrin 10/Ai'feng 3	Shandong
3	Jingshuang 2	Beijing 14	Beijing	57	Changnong 339	NA	Shandong
4	Beinongda 92	NA	Beijing	58	Shannongfu 63	Youbao/Ourou	Shandong
5	Lumai 7	Lovrin 10/3/Weier/Ruluo//Youxuan 26	Shandong	59	Lumai 21	Lumai 17/Yumai 54	Shandong
6	Luyuan 502	9940168	Shandong	60	Jimai 20	Lumai 14/Lumai 884187	Shandong
7	Hesheng 2	Yuanfeng 6	Shandong	61	Beijing 0045	Jing 411/Zhongmai 9	Beijing
8	Heima 2	Bingzhou 9001/H 4589	Shandong	62	Taishan 4	Huixianhong/A'bo	Shandong
9	Shannong M17	L156/Laihzou 137	Shandong	63	Jimai 19	Lumai 13/Linfen 5064	Shandong
10	Shanrong 3	Jinan 17	Shandong	64	Shannong 587	Fengchan 3/Xiangyang 4	Shandong
11	Jingdong 22	NA	Beijing	65	Taishan 23	876161/88111414	Shandong
12	Weimai 20	NA	Shandong	66	Yannong 23	Yan 1061/Lumai 14	Shandong
13	Jimai 21	Lu8865168/Chuannongda84-1109// Ji 84-5418	Shandong	67	Yanyou 361	Yan 1933/Shan 82-29	Shandong
14	Lumai 11	Ai'mengniuIV/Shannongfu 66	Shandong	68	Lumai 12	Lovrin10/Youbao//Ourou527/ Ai'feng 3/Yexuan 1	Shandong
15	Jinan 16	Talshannongfu 63/Ai'mengniuV	Shandong	69	Zixuan 2	A'bo/Huixianhong	Shandong
16	Lumai 14	C149/F4-530	Shandong	70	Laiyang 4671	Youbao/Ou'rou//Baiyoubao/3/L277/4	Shandong
17	Lumai 8	Ai'mengniuIV/Shannongfu 66	Shandong	71	Lumai 13	74(11)1-1-3/Laiyang 584	Shandong
18	Beijing 841	Beijing 18/Fengkang 4//Nongda 139	Beijing	72	Zimai 7	856043/865017	Shandong
19	Linkang 12	NA	Shandong	73	Zhouyuan 9369	PH82-2-2/866-34	Shandong
20	Jingdong 17	Jingnong 8/RHT 3//931	Beijing	74	Baigao 38	G38(st2422/464/Fengchan 3)	Shandong
21	Weimai 8	88-3149/Aus 621108	Shandong	75	Youmai 2	PH85-115-2//79401/Lumai 11	Shandong
22	Zhongyu 5	Ji 5418/Yuxi 832	Beijing	76	Zhongyou 335	Zhongyou 9701/CA9553	Beijing
23	Jining 13	(Yan 1934/82<4)t6)F//Liao 83-I/Zll4)	Shandong	77	Jimai 22	935024/935106	Shandong
24	Yannong 18	Zhong 144/Zhai 5241//Xiaoheimaiyi 8	Shandong	78	Liangxing 66	Ji 91102/Ji 935031	Shandong
25	Fengkang 2	Youmangbai 4/Lovrin 10	Beijing	79	Lumai 23	Lumai 8/Dalimai	Shandong
26	Lumai 15	Talyangmai1B1/Ai'mengniuII//104-14	Shandong	80	Zaoyangmai	NA	Beijing
27	Zhongyou 9	Yumai 21/92R139	Beijing	81	Jinan 17	Linfen 5064/Lumai 13	Shandong
28	Jingdong 8	A'fule'er/5238-0116//Hongliang4/3/ Lovrin 10	Beijing	82	Linmai 2	Lumai 23/Lin 90-15	Shandong

Table S1 to bee continued

Code	Cultivar/genotype	Pedigree	Origin	Code	Cultivar/genotype	Pedigree	Origin
29	Lumai 5	Ai'mengniu/Shannongfu 66	Shandong	83	Yan 2415	849/Lumai 21	Shandong
30	Shannong 11	93-95-3	Shandong	84	Weimai 6	Lumai 14	Shandong
31	Jingshuang 16	Lovrin 10/Youmanghong 7	Beijing	85	Liaomai 18	89B08-3-10-1-8/Lumai 23	Shandong
32	Lunxuan 987	Aibai	Beijing	86	Lumai 16	Gaoba/Yanda 72-629	Shandong
33	Nongda 212	Nongda 3338/S 180	Beijing	87	Linmai 4	Lumai 23/Lin 9015	Shandong
34	Yannong 24	Shan 229/An'mai 1	Shandong	88	Taishan 9818(small)	21-11/935021	Shandong
35	Nongda 211	Nongda 3291	Shandong	89	Tainong 142	Zhengzhou 8329/Zhi 8 7135-2-1-2-9	Shandong
36	Shannong 413863	NA	Shandong	90	Jinan 2	Bima 4/Zaoyangmai	Shandong
37	Jimai 2	Zhoumai 9/Luoyang 7602	Shandong	91	Yannong 78	Guandongai/Dongfaxiaomai	Shandong
38	Laizhou 953	Han 5/Yexuan 1/7832110-2	Shandong	92	Zhongnong 28	NA	Beijing
39	Jimai 1	731429A/7025//Zhengzhou 821//Yumai 21	Shandong	93	Taishan 21	Taishan 241	Shandong
40	Laizhou 137	Lovrin 10/Lumai 14	Shandong	94	Zimai 12	73-1104/Yexuan1//03201/3/73-1104/ Yexuan 1/4/Guinong 35-2	Shandong
41	Fengyou 6	9106-1-8/9303-9-6	Beijing	95	Linkang 5027	NA	Shandong
42	Taishan9818 (big)	21-11/935021	Shandong	96	Lumai 19	7014/Zhongsu 68//F16-31	Shandong
43	Jinan 2	Bima 4/Zaoyangmai	Shandong	97	Lumai 1	NA	Shandong
44	Changwei 18	Guandongai/Ai'rou//54405	Shandong	98	Changle 5	Jinan 4	Shandong
45	Sishuisanbamai	NA	Shandong	99	Zhongyou 9507	Zhongzuo 8131	Beijing
46	Jinan 8	Bima 4/Sulianzaoshu 1	Shandong	100	Jining 16	NA	Shandong
47	Nongda 139	Nongda 183/Weier//30983/Yanda 1817	Beijing	101	Zhongmai 175	BPM27/Jing 411	Beijing
48	Fengkang 8	Youmanghong 7/Lovrin 10	Beijing	102	Jing 411	Fengkang 2/Changfeng 1	Beijing
49	Huangxiandali banmang	NA	Shandong	103	Zhongyou 206	CA9614/Zhongyou 9507	Beijing
50	Yannong 19	Yan 1933/Shan 229	Shandong	104	Fengchang 3	S69/31003///8131-1//BF4-8/A'bo	Beijing
51	Taishan 1(high)	54405/Ou'rou	Shandong	105	Liangxing 99	Ji 91102/Lumai 14//PH85-16	Shandong
52	Taishan 5	Huixianhong/A'bo//Ou'roubai	Shandong	106	Zhongmai 415	Guinong 11/Jing 411//Jing 411	Beijing
53	Taishan 1	(Bima 4×Zaoshu 1)/Ou'rou	Shandong	107	Changle 5(high)	Bima 4/Zaoyangmai	Shandong
54	Jining 3	Jinan 2/A'bo	Shandong	108	Lumai 18	(86026×8-038)×Peixian 304-1	Shandong

NA – not available

Table S2. PCR primers and their conditions for detecting *Lr* genes as well as specific fragment sizes

<i>Lr</i> gene	Marker type	Primer	Forward primer (5'-3')	Reverse primer (5'-3')	Annealing temp. (°C)	Size (bp)	Reference
<i>Lr1</i>	STS	WR003	GGGACAGAGACCTTGGTGGA	GAC GATGATGATTGCTGCTGG	65	760	Cloutier et al. (2007)
<i>Lr9</i>	STS	J13	TCCTTTTATTCCGCACGCCGG	CCACACTACCCCAAGAGAG	66	1 100	Chermayr et al. (1994)
<i>Lr10</i>	STS	Lrk10D	GAAGCCCTTCGTCTCATCTG	TTGATTCATTGCAGATGAGATCAG	58	282	Schachermayr et al. (1997)
<i>Lr19</i>	SCAR	SCS265	GGGGATAAGCAGAGCAGAG	GGCGGATAAGTGGGTTATGG	65	512	Gupta et al. (2005)
<i>Lr19</i>	SCAR	SCS253	GCTGGTTCCACAAAGCAAA	GGCTGGTTCCCTTAGATAGGTG	60	736	Gupta et al. (2005)
<i>Lr20</i>	STS	STS638	ACAGCGATGAAGCAATGAAA	GTCCAGTTGGTTGATGGAAT	60	542	Neu et al. (2002)
<i>Lr24</i>	STS	<i>Lr24</i> J9 1/2	TCTAGTCTGTACATGGGGGC	TGGCACATGAACCTCCATACG	57	310	Schachermayr et al. (1995)
<i>Lr26</i>	STS	Glu-B3	GGTACCAACAACAACACCC	GTTGCTGCTGAGGTTGGTTC	65	210	Froidmont (1998)
<i>Lr26</i>	STS	ω-secalin	ACCTTCCTCATCTTTGTCTT	CCGATGCCCTATACCACTACT	65	1 076	Chai et al. (2006)
<i>Lr34</i>	STS	csLV34	GTTGGTTAAGACTGGTGATGG	TGCTTGCTATTGCTGAATAGT	58	150	Dyck (1987)
<i>Lr37</i>	STS	VENTRIUP/LN2	AGGGGCTACTGACCAAGGCT	TGCAGCTACAGCAGTATGTACACAAA	65	259	Bariana and McIntosh (1993)
<i>Lr46</i>	STS	csLV46G22	AGGGAAAGACATCTTTTITTC	CGACCGACTTCGGGTTTC	58	335	Singh et al. (1998)

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