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Table A1. The HMW-GS and LMW-GS alleles in Chinese winter wheat cultivars and advanced lines identified by allele specific markers and SDS-PAGE

Code	Cultivar/Line	Origin	Zone	Alleles detected by molecular markers					Subunits detected by SDS-PAGE				
				<i>P1+P2</i>	<i>ZSBy8F5/R5</i>	<i>Bx</i>	<i>Mar</i>	<i>ZSBy9aF1/R3</i>	<i>Glu-B3</i>	<i>Glu-A1</i>	<i>Glu-B1</i>	<i>Glu-D1</i>	<i>Glu-B3</i>
1	Beijing 837	Beijing	I			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>		N	7+9	2+12	j
2	CA8686	Beijing	I			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>		N	7+9	2+12	j
3	CA9532	Beijing	I			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>		N	7+9	2+12	j
4	CA9550	Beijing	I		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		<i>Glu-B3h</i>	2*	7+8	2+12	h
5	CA9553	Beijing	I			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>		2*	7+9	2+12	f
6	CA9632	Beijing	I			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>		1	7+9	2+12	j
7	CA9641	Beijing	I		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		<i>Glu-B3h</i>	N	7+8	2+12	h
8	CA9648	Beijing	I		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>			2*	7+8	2+12	j
9	CA9719	Beijing	I		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		<i>Glu-B3h</i>	2*	7+8	2+12	h
10	CA9722	Beijing	I		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		<i>Glu-B3b</i>	N	7+8	2+12	a
11	Dongfeng 611	Beijing	I			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>		1	7+9	2+12	j
12	Dongfeng9 801	Beijing	I			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>		N	7+9	2+12	j
13	Zhongmai 9	Beijing	I			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>		1	7+9	2+12	j
14	Zhongmai 16	Beijing	I			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>		N	7+9	4+12	j
15	Zhongyou 9507	Beijing	I	<i>Glu-D1-1d</i>		<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>		1	7+9	5+10	b
16	Zhongyou 9701	Beijing	I	<i>Glu-D1-1d</i>	<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		<i>Glu-B3d</i>	N	7+8	5+10	d
17	Xiaoyan 54	Beijing	I				<i>Glu-B1e</i>	<i>Glu-B1e</i>	<i>Glu-B3d</i>	1	20	2+12	d
18	Yuandong 6	Beijing	I			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>		N	7+9	2+12	j
19	Yuandong 107	Beijing	I	<i>Glu-D1-1d</i>		<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>		1	7+9	5+10	j

20	Yuandong 971	Beijing	I	<i>Glu-D1-1d</i>		<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	N	7+9	5+10	j
21	Yuandong 8585	Beijing	I	<i>Glu-D1-1d</i>		<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	N	7+9	5+10	j
22	Yuandong 9428	Beijing	I	<i>Glu-D1-1d</i>		<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	2*	7+9	5+10	j
23	Nongda 116	Beijing	I			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B3d</i>	1	20	2+12	d
24	Nongda 152	Beijing	I	<i>Glu-D1-1d</i>	<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B3d</i>	1	7+8	5+10	d
25	Nongda 3197	Beijing	I		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		N	7+8	3+12	f
26	Nongda 3213	Beijing	I			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	N	7+9	2+12	j
27	Nongda 3214	Beijing	I			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	N	7+9	2+12	j
28	Nongda 3291	Beijing	I			<i>Glu-B1-1d</i>	<i>Glu-B1-1a</i>		N	6+8	3+12	j
29	Nongda 3395	Beijing	I			<i>Glu-B1-1d</i>	<i>Glu-B1-1a</i>		N	6+8	3+12	j
30	Nongda 99-5009	Beijing	I		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B3d</i>	N	7*+8	2+12	d
31	Jingnong 8318	Beijing	I			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	N	7+9	2+12	j
32	Jingnong 97-86	Beijing	I		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B3h</i>	N	7+8	2+12	h
33	Jingnong 98-100	Beijing	I			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		N	7+8	2+12	j
34	Jingnong 8	Beijing	I			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	N	7+9	2+12	j
35	Jingdong 10	Beijing	I			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	1	7+9	2+12	j
36	Jing4 11	Beijing	I			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B3h</i>	2*	7+8	2+12	h
37	Jing 9428	Beijing	I			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B3b</i>	2*	7+8	2+12	b
38	Zhongyou 14	Beijing	I	<i>Glu-D1-1d</i>	<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		1	7+8	5+10	
39	Zhongyou 16	Beijing	I	<i>Glu-D1-1d</i>	<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		1	7+8	5+10	
40	Youxuan 9	Beijing	I	<i>Glu-D1-1d</i>		<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	1	7+9	5+10	
41	Youxuan 14	Beijing	I	<i>Glu-D1-1d</i>	<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		1	7+8	5+10	
42	Zhongyou 9844	Beijing	I	<i>Glu-D1-1d</i>	<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		1	7+8	5+10	
43	Zhongzuo 8131-1	Beijing	I	<i>Glu-D1-1d</i>		<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	1	7+9	5+10	
44	Zhongyou 8	Beijing	I		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		1	7+8	2+12	
45	Henong 2552	Hebei	I			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	N	7+9	2+12	j
46	Henong 341	Hebei	I			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	N	7+9	2+12	b

47	Ji 3475	Hebei	I		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		N	7+8	2+12	j	
48	Ji 5066	Hebei	I			<i>Glu-B1i</i>	<i>Glu-B1-1a</i>		1	17+18	2+12	f	
49	Ji Z76	Hebei	I				<i>Glu-B1e</i>	<i>Glu-B1e</i>	N	20	4+12	f	
50	Jimai 38	Hebei	I			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	N	7+9	2+12	j	
51	Gaocheng 890	Hebei	I	<i>Glu-D1-1d</i>	<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		1	7+8	5+10	d	
52	Gaoyou 503	Hebei	I			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B3d</i>	1	7+8	2+12	d	
53	Canghe 030	Hebei	I	<i>Glu-D1-1d</i>			<i>Glu-B1e</i>	<i>Glu-B1e</i>	N	20	5+10	j	
54	96C1	Hebei	I	<i>Glu-D1-1d</i>		<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	1	7+9	2+12	j	
55	HS97-10	Hebei	I			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	2*	7+9	2+12	j	
56	Jimai 24	Hebei	I		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		1	7+8	2+12		
57	Wanmai 19	Anhui	II	<i>Glu-D1-1d</i>		<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	<i>Glu-B3d</i>	1	7+9	4+12	d
58	Wanmai 38	Anhui	II		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		1	7+8	4+12	b	
59	Zhongliang 88303	Gansu	II			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	1	7+9	2+12	j	
60	Zhongliang 88375	Gansu	II			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	1	7+9	2+12	j	
61	Zhongyu 5	Henan	II			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	N	7+9	2+12	j	
62	Zhongyu 6	Henan	II		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		1	7+8	4+12	j	
63	85 zhong 33	Henan	II			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	N	7+9	2+12	j	
64	93 zhong 6(37)	Henan	II			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	N	7+9	2+12	j	
65	98 zhong 18	Henan	II		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		1	7+8	4+12	j	
66	Fengyou 6	Henan	II			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	1	7+9	4+12	j	
67	Guanfeng 2	Henan	II	<i>Glu-D1-1d</i>	<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B3b</i>	N	7*+8	5+10	b	
68	Zhengzhou 9023	Henan	II		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B3d</i>	N	7+8	2+12	d	
69	Zhengzhou 974	Henan	II			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	1	7+9	2+12	j	
70	Zhengzhou 992	Henan	II			<i>Glu-B1i</i>	<i>Glu-B1-1a</i>		N	17+18	2+12	j	
71	Yunong 94268	Henan	II	<i>Glu-D1-1d</i>		<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	2*	7+9	5+10	j	
72	Yunong 95339	Henan	II			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	<i>Glu-B3d</i>	N	7+9	2+12	d
73	Yumai 21	Henan	II			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	N	7+9	2+12	j	

74	Yumai 25	Henan	II			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>		1	7+9	4+12	f
75	Yumai 28	Henan	II			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>		N	7+9	4+12	j
76	Yumai 34	Henan	II	<i>Glu-D1-1d</i>	<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		<i>Glu-B3d</i>	1	7+8	5+10	h
77	Yumai 35	Henan	II	<i>Glu-D1-1d</i>		<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>		1	7+9	5+10	j
78	Yumai 47	Henan	II		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		<i>Glu-B3d</i>	1	7+8	2+12	d
79	Yumai 49	Henan	II			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>		1	7+9	4+12	f
80	Yumai 50	Henan	II			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>		2*	7+9	2+12	j
81	Yumai 51	Henan	II			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>		1	7+9	2+12	j
82	Yumai 54	Henan	II			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	<i>Glu-B3d</i>	1	7+9	4+12	d
83	Yumai 57	Henan	II	<i>Glu-D1-1d</i>		<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	<i>Glu-B3d</i>	1	7+9	5+10	d
84	Yumai 62	Henan	II			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>		1	7+9	2+12	j
85	Yumai 63	Henan	II				<i>Glu-B1e</i>	<i>Glu-B1e</i>	<i>Glu-B3d</i>	N	20	3+12	d
86	Yumai 69	Henan	II		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		<i>Glu-B3d</i>	1	7+8	2+12	d
87	Yumai 70	Henan	II	<i>Glu-D1-1d</i>		<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>		1	7+9	5+10	j
88	Zhou 91177	Henan	II			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>		N	7+9	2+12	j
89	Zhoumai 13	Henan	II			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>		1	7+9	2+12	j
90	Lankao 24	Henan	II	<i>Glu-D1-1d</i>		<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>		1	7+9	5+10	j
91	Puyou 9175	Henan	II	<i>Glu-D1-1d</i>		<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>		1	7+9	5+10	j
92	Fengyou 7	Hennan	II		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		<i>Glu-B3d</i>	N	7+8	2+12	d
93	Zhengzhou 81-1	Hennan	II	<i>Glu-D1-1d</i>	<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		<i>Glu-B3d</i>	N	7+8	5+10	a
94	Huaimai 17	Jiangsu	II			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>		1	7+9	2+12	j
95	Huaimai 18	Jiangsu	II	<i>Glu-D1-1d</i>	<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>			1	7+8	5+10	j
96	Shaan 150	Shaanxi	II		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		<i>Glu-B3b</i>	1	7+8	2+12	b
97	Shaan 160	Shaanxi	II		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		<i>Glu-B3d</i>	1	7+8	2+12	d
98	Shaan 229	Shaanxi	II	<i>Glu-D1-1d</i>			<i>Glu-B1e</i>	<i>Glu-B1e</i>		1	20	5+10	j
99	Shaan 253	Shaanxi	II	<i>Glu-D1-1d</i>		<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	<i>Glu-B3d</i>	1	20	5+10	d
100	Shaan 302518	Shaanxi	II			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>		1	7+9	4+12	j

101	Shaan 354	Shaanxi	II		<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>		1	7+9	4+12	j	
102	Shaan 623	Shaanxi	II		<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>		1	7+9	3+12	j	
103	Shaan 898-33	Shaanxi	II			<i>Glu-B1e</i>	<i>Glu-B1e</i>	<i>Glu-B3b</i>	1	14+15	2+12	b	
104	Shaan 9314	Shaanxi	II		<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>		1	7+9	2+12	j	
105	Shaan 93302	Shaanxi	II			<i>Glu-B1e</i>	<i>Glu-B1e</i>	<i>Glu-B3b</i>	1	20	2+12	b	
106	Shaanyou 225	Shaanxi	II			<i>Glu-B1e</i>	<i>Glu-B1e</i>	<i>Glu-B3d</i>	1	14+15	2+12	d	
107	Xinong 1163-20	Shaanxi	II		<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>		N	7+9	2+12	f	
108	Xinong 12208019	Shaanxi	II		<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>		1	7+9	2+12	j	
109	Xinong 336	Shaanxi	II		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B3d</i>	N	7+8	2+12	d	
110	Xinong 6426	Shaanxi	II		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B3d</i>	1	7+8	2+12	d	
111	Xinong 8925-13	Shaanxi	II			<i>Glu-B1e</i>	<i>Glu-B1e</i>	<i>Glu-B3d</i>	2*	20	2+12	d	
112	N9209-3	Shaanxi	II			<i>Glu-B1e</i>	<i>Glu-B1e</i>		1	7	2+12	f	
113	Liken 2	Shaanxi	II	<i>Glu-D1-1d</i>	<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		1	7+8	5+10		
114	Shandong 924402-6	Shandong	II		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		1	7+8	2+12	j	
115	Shandong 928802	Shandong	II			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		N	20	2+12	j	
116	Shandong 94(6)006	Shandong	II			<i>Glu-B1-1d</i>	<i>Glu-B1-1a</i>	<i>Glu-B3d</i>	1	6+8	2+12	d	
117	Shandong 955159	Shandong	II			<i>Glu-B1-1a</i>			1	13+16	4+12	b	
118	Lu 95(6)161	Shandong	II		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		1	7+8	2+12	j	
119	Lumai 22	Shandong	II			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	N	7+9	2+12	f	
120	Lumai 23	Shandong	II			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	1	20	2+12	a	
121	Baiyu 149	Shandong	II			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B3b</i>	1	7+8	2+12	b	
122	PH1521	Shandong	II	<i>Glu-D1-1d</i>		<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	1	20	5+10	d	
123	PH82-2	Shandong	II			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B3d</i>	1	14+15	2+12	d	
124	PH85-1-1	Shandong	II			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	<i>Glu-B3d</i>	N	7+9	2+12	j
125	PH85-16	Shandong	II			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		1	20	2+12	d	
126	Shannong 1355	Shandong	II			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	1	7+9	2+12	j	
127	Shannong 2013	Shandong	II		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		1	7+8	2+12	j	

128	Shannong 413863	Shandong	II		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		N	7+8	2+12	j	
129	Shannong 60182	Shandong	II				<i>Glu-B1e</i>	<i>Glu-B1e</i>	N	20	2+12	d	
130	Shannong 617	Shandong	II			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	N	7+9	2+12	j	
131	Shannong 664	Shandong	II		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		1	7+8	4+12	j	
132	Shannong 990525	Shandong	II				<i>Glu-B1e</i>	<i>Glu-B1e</i>	<i>Glu-B3d</i>	1	20	2+12	d
133	Yan 239	Shandong	II		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		1	7+8	2+12	j	
134	Yan 2801	Shandong	II			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	1	7+9	4+12	j	
135	Yan 475	Shandong	II		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		1	7+8	2+12	f	
136	Yan 99-5	Shandong	II			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	1	7+9	4+12	j	
137	Yanfu 188	Shandong	II			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	<i>Glu-B3d</i>	N	7+9	4+12	d
138	Yannong 15	Shandong	II			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	1	7+9	4+12	f	
139	Yannong 18	Shandong	II	<i>Glu-D1-1d</i>		<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	1	7+9	5+10	j	
140	Yanyou 361	Shandong	II	<i>Glu-D1-1d</i>		<i>Glu-B1i</i>	<i>Glu-B1-1a</i>		<i>Glu-B3h</i>	1	17+18	5+10	h
141	Ji-ning 936098	Shandong	II		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		1	7+8	2+12	j	
142	Jimai 1	Shandong	II			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	N	7+9	2+12	j	
143	Jinmai 45	Shanxi	II			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	N	7+9	3+12	j	
144	Jinmai 50	Shanxi	II		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		N	7+8	3+12	f	
145	Jinmai 60	Shanxi	II			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	N	7+9	2+12	j	
146	Jinmai 61	Shanxi	II		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		1	7+8	4+12	j	
147	Jinmai 67	Shanxi	II	<i>Glu-D1-1d</i>		<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	2*	7+9	5+10	b	
148	99G46	Shanxi	II		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		1	7+8	4+12	j	
149	99G66	Shanxi	II		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		1	7+8	4+12	d	
150	99G80	Shanxi	II		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		2*	7+8	4+12	j	
151	Jinnong 207	Shanxi	II	<i>Glu-D1-1d</i>		<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	N	7+9	5+10	j	
152	Jinnong 215	Shanxi	II		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		N	7+8	2+12	j	
153	Jinnong 216	Shanxi	II	<i>Glu-D1-1d</i>		<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	N	7+9	2+12	j	
154	Jinnong 218	Shanxi	II			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	N	7+9	2+12	j	

155	Yun 97169	Shanxi	II		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		2*	7+8	2+12	j	
156	Yunfengzao 101	Shanxi	II	<i>Glu-D1-1d</i>	<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		1	20	2+12	b	
157	Yunfengzao 898	Shanxi	II	<i>Glu-D1-1d</i>			<i>Glu-B1e</i>	<i>Glu-B1e</i>	<i>Glu-B3b</i>	1	7+8	5+10	j
158	Linfen 125	Shanxi	II		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		1	7+8	4+12	j	
159	Linfen 127	Shanxi	II				<i>Glu-B1e</i>	<i>Glu-B1e</i>		1	20	2+12	j
160	Linfen 133	Shanxi	II	<i>Glu-D1-1d</i>	<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		1	7+8	5+10	j	
161	Linfen 137	Shanxi	II				<i>Glu-B1e</i>	<i>Glu-B1e</i>		1	20	2+12	g
162	Linfen 5232	Shanxi	II			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	2*	7+9	2+12	j	
163	Linfen 98-6269	Shanxi	II		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		2*	7+8	2+12	f	
164	Linha 6114	Shanxi	II			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	2*	7+9	2+12	j	
165	Linha 619	Shanxi	II			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	2*	7+9	2+12	j	
166	Linha 917	Shanxi	II			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	<i>Glu-B3h</i>	2*	7+9	2+12	h
167	Linfeng 615	Shanxi	II			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	N	7+9	2+12	j	
168	Linyou 1583	Shanxi	II			<i>Glu-B1-1d</i>	<i>Glu-B1-1a</i>		1	6+8	4+12	f	
169	Annong 91168	Anhui	III	<i>Glu-D1-1d</i>	<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		1	7+8	5+10	d	
170	Annong 94022	Anhui	III		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		<i>Glu-B3d</i>	N	7+8	2+12	b
171	Wanmai 48	Anhui	III			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		<i>Glu-B3d</i>	N	7+9	4+12	d
172	Wanmai 18	Anhui	III		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		1	7+8	4+12	f	
173	Wanmai 33	Anhui	III	<i>Glu-D1-1d</i>		<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		1	20	5+10	g	
174	E66378	Hubei	III			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		1	20	2+12	b	
175	E81027	Hubei	III		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		N	7+8	2+12	j	
176	E86642	Hubei	III	<i>Glu-D1-1d</i>	<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		<i>Glu-B3d</i>	1	7+8	5+10	d
177	E91727	Hubei	III			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>		1	20	2+12	f
178	883	Jiangsu	III		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		1	7+8	4+12	j	
179	9 (54)	Jiangsu	III	<i>Glu-D1-1d</i>	<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		<i>Glu-B3d</i>	N	7+8	2+12	d
180	Xu 858	Jiangsu	III		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		<i>Glu-B3d</i>	1	7+8	2+12	d

181	Xuzhou 25	Jiangsu	III			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	N	7+9	2+12	f	
182	Xuzhou 826	Jiangsu	III		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		N	7+8	2+12	j	
183	Ning 9-159	Jiangsu	III		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		1	7+8	2+12	f	
184	Ning 9247	Jiangsu	III	<i>Glu-D1-1d</i>		<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	N	7+9	5+10	f	
185	Ning 9548	Jiangsu	III	<i>Glu-D1-1d</i>		<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	1	7+9	5+10	f	
186	Ning 97-18	Jiangsu	III		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		N	7+8	2+12	f	
187	Ning 97-41	Jiangsu	III		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		N	7+8	2+12	f	
188	Ning 9766	Jiangsu	III		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		N	7+8	2+12	b	
189	Ning 98084	Jiangsu	III			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	N	7+9	2+12	b	
190	Ning 9940	Jiangsu	III			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	N	7+9	2+12	b	
191	Ning 99415-8	Jiangsu	III			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	N	7+9	2+12	b	
192	Ning 9952	Jiangsu	III		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		N	7+8	2+12	b	
193	99P102	Jiangsu	III		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		1	7+8	2+12	j	
194	Yang 96-152	Jiangsu	III		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		1	7+8	2+12	f	
195	Yang 96G25	Jiangsu	III		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		1	7+8	2+12	f	
196	Yang 97-65	Jiangsu	III		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		N	7+8	2+12	f	
197	Yangmai 158	Jiangsu	III		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		N	7+8	2+12	f	
198	Yangmai 5	Jiangsu	III			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	N	7+9	2+12	f	
199	Yangmai 9	Jiangsu	III			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	N	7+9	2+12	f	
200	RF-1	Jiangsu	III			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	N	7+9	2+12	f	
201	Chuan 89-107	Sichuan	IV			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	<i>Glu-B3b</i>	N	7+9	2+12	b
202	Chuan 89-114	Sichuan	IV	<i>Glu-D1-1d</i>		<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	<i>Glu-B3b</i>	N	7+9	5+10	b
203	Chuan 96003	Sichuan	IV			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	<i>Glu-B3b</i>	N	7+9	3+12	f
204	Chuanyu 12	Sichuan	IV	<i>Glu-D1-1d</i>	<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		<i>Glu-B3d</i>	1	7+8	5+10	d
205	R25	Sichuan	IV			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	1	7+9	2+12	j	
206	R57	Sichuan	IV	<i>Glu-D1-1d</i>		<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	1	7+9	5+10	j	
207	R59	Sichuan	IV	<i>Glu-D1-1d</i>		<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	1	7+9	5+10	j	

208	Mianyang 26	Sichuan	IV			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>	<i>Glu-B3b</i>	N	7+9	2+12	b
209	Mianyang 940112	Sichuan	IV	<i>Glu-D1-1d</i>	<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		<i>Glu-B3b</i>	N	7+8	5+10	b
210	Mianyang 960107	Sichuan	IV	<i>Glu-D1-1d</i>	<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		<i>Glu-B3b</i>	N	7+8	5+10	b
211	Mianyang 980127	Sichuan	IV		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>			1	7+8	4+12	f
212	Mianyang 98-17	Sichuan	IV	<i>Glu-D1-1d</i>		<i>Glu-B1i</i>	<i>Glu-B1-1a</i>			N	17+18	5+10	j
213	Mianyang 98-20	Sichuan	IV	<i>Glu-D1-1d</i>	<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>		<i>Glu-B3b</i>	N	7+8	5+10	b
214	Mianyang 99-17	Sichuan	IV			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>		1	7+9	2+12	f
215	Fengmai 24	Yunnan	IV		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>			1	7+8	2+12	b'
216	Fengmai 27	Yunnan	IV		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>			1	7+8	2+12	b'
217	Yunmai 39	Yunnan	IV			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>		N	7+9	2+12	j
218	Yunmai 42	Yunnan	IV	<i>Glu-D1-1d</i>						2*	7	5+10	f
219	Yunmai 44	Yunnan	IV	<i>Glu-D1-1d</i>		<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>		N	7+9	5+10	j
220	Yunmai 46	Yunnan	IV			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>		1	7+9	2+12	j
221	Demai 4	Yunnan	IV		<i>Glu-B1-2a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>			1	7+8	2+12	j
222	Yin 11-12	Yunnan	IV	<i>Glu-D1-1d</i>		<i>Glu-B1i</i>	<i>Glu-B1-1a</i>			2*	17+18	5+10	j
223	992-17	Yunnan	IV			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>		1	7+9	2+12	b
224	Y10-8	Yunnan	IV			<i>Glu-B1-1a</i>	<i>Glu-B1-1a</i>	<i>Glu-B1-2b</i>		N	7+9	2+12	f

The results for HMW-GS and LMW-GS detected by SDS-PAGE were from Liu et al. (2005); Zone I: North Plain Winter Wheat Region, Zone II: Yellow and Huai Facultative Winter Wheat Region, Zone III: Middle and Lower Yangtze Valley's Autumn-sown Spring Wheat Region, Zone IV: Southwestern Autumn-sown Spring Wheat Region.