

Table S2. Phenotyping and genotyping by markers to B1/b1 alleles of winter wheat accessions of Russian wheat germplasm collection of VIR

n/n	VIR catalog number	Sample name	*Subspecies	Origin	PCR test dominant allele (B1for/Znfrev) - recessive allele (b1for/Znfrev)	phenotype, Orel region
1	4784	Banatka	**erythrospermum	Russia, Stavropol region	b1	awned
2	4832	-	erythrospermum	Russia, Kalmykia	b1mite	awned
3	9723	Beloturka bezostaya	albidum	Russia, Yaroslavl' region	<i>B1</i>	awnless
4	9765	Local	milturum	Russia, Pskov region	<i>B1</i>	awnless
5	9789	Batishchevskaya	lutescens	Russia, Smolensk region	<i>B1</i>	awnless
6	10213	Gorkonkur	ferrugineum	Russia, Kursk region	b1mite	awned
7	10376	Kosobryukhovka	-	Russia, Krasnodar region	b1mite	awned
8	10890	Donka	ferrugineum	Russia, Rostov region	b1mite	awned
9	10896	Veshkinskaya	ferrugineum	Russia, Moscow region	b1mite	awned
10	13092	-	milturum	Russia, Primorsky krai	<i>B1</i>	awnless
11	22418	Sandomirka	albidum	Russia, Orel region	<i>B1</i>	awnless
12	24500	Mikhaylovka	erythrospermum	Russia, Leningrad region	b1	awned
13	33053	-	erythrospermum	Russia, Khabarovsk krai	b1mite	awned
14	34886	Staritsinskaya	erythrospermum	Russia, Tomsk region	b1	awned
15	35698	Batetskaya belokoloska	albidum	Russia, Novgorod region	<i>B1</i>	awnless
16	35757	Pashinskaya	milturum	Russia, Kirov region	<i>B1</i>	awnless
17	35766	Bogorodskaya	ferrugineum	Russia, Nizhniy Novgorod region	b1mite	awned
18	36454	Plyusskaya	albidum, lutescens, milturum	Russia, Pskov region	<i>B1</i>	awnless
19	36507	Mestnaya	lutescens	Russia, Chuvashia	<i>B1</i>	awnless
20	36526	Eritrospermum 59	erythrospermum	Russia, Kursk region	b1mite	awned
21	36590	Skala	lutescens	Russia, Irkutsk region	<i>B1</i>	awnless
22	36612	Velizhanskaya	milturum	Russia, Tyumen' region	<i>B1</i>	awnless
23	37478	Shatilovskaya	erythrospermum	Russia, Altai region	b1mite	awned
24	38248	Ust'-Ishimka	lutescens	Russia, Omsk region	<i>B1</i>	awnless
25	38321	Ustyuzhenskaya	albidum	Russia, Vologda region	<i>B1</i>	awnless
26	38342	Mestnaya maslyaninskaya	erythrospermum	Russia, Novosibirsk region	b1mite	awned
27	38435	Sumarokovskaya mestnaya	milturum	Russia, Kostroma region	<i>B1</i>	awnless
28	38438	Oyashinskaya	ferrugineum	Russia, Novosibirsk region	b1mite	awned
29	40579	Karel'skaya bezostaya	velutinum	Russia, Karelia	<i>B1</i>	awnless
30	42790	Bezostaya 1	lutescens	Russia, Krasnodar region	<i>B1</i>	awnless
31	43920	Mironovskaya 808	lutescens	USSR, Ukrainian SSR	<i>B1</i>	awnless
32	62733	Inna	lutescens	Russia, Moscow region	<i>B1</i>	awnless
33	45654	Kavkaz	lutescens	Russia, Krasnodar region	<i>B1</i>	awnless
34	49271	Arthur 71	lutescens	USA	<i>B1</i>	awnless
35	62735	Don 93	lutescens	Russia, Rostov region	<i>B1</i>	awnless
36	51829	Oasis	lutescens	USA	<i>B1</i>	awnless
37	54646	Donskaya bezostaya	lutescens	Russia, Rostov region	<i>B1</i>	awnless
38	55798	Ul'yanovka 9	lutescens	Russia, Kursk region	<i>B1</i>	awnless
39	55801	Lyutestsens 12	lutescens	Russia, Kursk region	<i>B1</i>	awnless
40	56058	Sibiryachka	lutescens	Russia, Novosibirsk region	<i>B1</i>	awnless
41	57687	Voronezhskaya 174	lutescens	Russia, Voronezh region	<i>B1</i>	awnless

42	58137	Kosack	lutescens	Sweden	<i>B1</i>	awnless
43	58676	Stavropol'skaya kormovaya	lutescens	Russia, Stavropol region	<i>B1</i>	awnless
44	58802	Labinka	erythrospermum	Russia, Krasnodar region	<i>b1</i>	awned
45	60705	Prikumskaya 986	lutescens	Russia, Stavropol region	<i>B1</i>	awnless
46	61531	Omskaya ozimaya	lutescens	Russia, Omsk region	<i>B1</i>	awnless
47	61548	Sibirskaya Niva	lutescens	Russia, Omsk region	<i>B1</i>	awnless
48	61610	TAM 200	erythrospermum	USA	<i>b1</i>	awned
49	61966	Bezenchukskaya 380	lutescens	Russia, Samara region	<i>B1</i>	awnless
50	61992	Eritrospermum 31	erythrospermum	Russia, Orenburg region	<i>b1</i>	awned
51	62019	Fundulea 4	erythrospermum	Romania	<i>b1</i>	awned
52	62372	Karl	erythrospermum	USA	<i>b1</i>	awned
53	62399	Century	erythrospermum	USA	<i>b1</i>	awned
54	62432	Kazanskaya 285	erythrospermum	Russia, Tatarstan	<i>b1</i>	awned
55	62452	Thunderbird	erythrospermum	USA	<i>b1</i>	awned
56	62509	Tundza	lutescens	Bulgaria	<i>B1</i>	awnless
57	62703	Norkan	erythrospermum	USA	<i>b1</i>	awned
58	62707	Abilene	erythrospermum	USA	<i>b1</i>	awned
59	62711	Victory	erythrospermum	USA	<i>b1</i>	awned
60	44132	Ramonskaya 42	ferrugineum	Russia, Voronezh region	<i>b1</i>	awned
61	49880	Voronezhskaya 34	hostianum	Russia, Voronezh region	<i>b1</i>	awned
62	62738	Zernogradka 9	lutescens	Russia, Rostov region	<i>B1</i>	awnless
63	62744	Peacock	lutescens	Great Britain	<i>B1</i>	awnless
64	63001	Suzdal'skaya 2	lutescens	Russia, Vladimir region	<i>B1</i>	awnless
65	63002	Tau	lutescens	Russia, Vladimir region	<i>B1</i>	awnless
66	63006	Tjelvar	lutescens	Sweden	<i>B1</i>	awnless
67	63037	Tarasovskaya ostistaya	erythrospermum	Russia, Rostov region	<i>b1</i>	awned
68	63040	Zimorodok	lutescens	Russia, Krasnodar region	<i>B1</i>	awnless
69	63104	Orenburgskaya 12	velutinum	Russia, Orenburg region	<i>B1</i>	awnless
70	63106	Guberniya	lutescens	Russia, Saratov region	<i>B1</i>	awnless
71	63117	Splav	lutescens	Russia, Vladimir region	<i>B1</i>	awnless
72	63119	Zalarinka	lutescens	Russia, Irkutsk region	<i>B1</i>	awnless
73	63368	Yasen	erythrospermum	Bulgaria	<i>b1</i>	awned
74	63523	Vista	erythrospermum	USA	<i>b1</i>	awned
75	63565	Kazanskaya 560	erythrospermum	Russia, Tatarstan	<i>b1</i>	awned
76	63894	Mona	lutescens	Czech Republic	<i>B1</i>	awnless
77	63897	Encore	lutescens	Great Britain	<i>B1</i>	awnless
78	63905	Bruden=Bryden	lutescens	Great Britain	<i>B1</i>	awnless
79	63922	Zodiac	lutescens	Great Britain	<i>B1</i>	awnless
80	63981	Turda 81-77	lutescens	Romania	<i>B1</i>	awnless
81	64008	Gorbi	lutescens	Germany	<i>B1</i>	awnless
82	64024	Carolus	lutescens	Germany	<i>B1</i>	awnless
83	64033	Arber	lutescens	Germany	<i>B1</i>	awnless
84	64049	Rawhide	erythrospermum	USA	<i>b1</i>	awned
85	64058	Zlatostrui	graecum	Bulgaria	<i>b1</i>	awned
86	64066	Vida	lutescens	Bulgaria	<i>B1</i>	awnless
87	64160	Moskovskaya 39	erythrospermum	Russia, Moscow region	<i>b1</i>	awned
88	64161	Galina	erythrospermum	Russia, Moscow region	<i>b1</i>	awned
89	64182	Mv.Madrigal	lutescens	Hungary	<i>B1</i>	awnless

90	64183	Mv.Magdalena	erythrospermum	Hungary	<i>bl</i>	awned
91	64184	Mv.Sigma	lutescens	Hungary	<i>Bl</i>	awnless
92	64186	Rapid	erythrospermum	Romania	<i>bl</i>	awned
93	64187	Dropia	erythrospermum	Romania	<i>bl</i>	awned
94	64188	Ariesan	ferrugineum	Romania	<i>bl</i>	awned
95	64192	Alex	erythrospermum	Romania	<i>bl</i>	awned
96	64198	Mera	lutescens	Russia, Vladimir region	<i>Bl</i>	awnless
97	64280	Biryuza	lutescens	Russia, Samara region	<i>Bl</i>	awnless
98	64350	Bat'ko	lutescens	Russia, Krasnodar region	<i>Bl</i>	awnless
99	64521	Autan	erythrospermum	France	<i>bl</i>	awned
100	64522	Brando	lutescens	France	<i>Bl</i>	awnless
101	64523	Caphorn	lutescens	France	<i>Bl</i>	awnless
102	64525	Forban	lutescence	France	<i>Bl</i>	awnless
103	64526	Hamac	lutescens	France	<i>Bl</i>	awnless
104	64527	Isengrain	erythrospermum	France	<i>bl</i>	awned
105	64535	Vulcain	lutescens	France	<i>Bl</i>	awnless
106	64620	Dominanta	erythrospermum	Russia, Rostov region	<i>bl</i>	awned
107	64632	Volzhskaya S3	erythrospermum	Russia, Ul'yanovsk region	<i>bl</i>	awned
108	64747	Novosibirskaya 51	lutescens	Russia, Novosibirsk region	<i>Bl</i>	awnless
109	64749	Novosibirskaya 9	lutescens	Russia, Novosibirsk region	<i>Bl</i>	awnless
110	64909	Zhemchuzhina Povolzh'ya	lutescens	Russia, Saratov region	<i>Bl</i>	awnless
111	64934	Superior	albidum	Canada	<i>Bl</i>	awnless
112	64936	AC Tempest	ferrugineum	Canada	<i>bl</i>	awned
113	65027	Karat	lutescens	Bulgaria	<i>Bl</i>	awnless
114	65035	Mv.Koma	graecum	Hungary	<i>NA</i>	awned
115	65068	Siluet	compositumferrugineum	Russia, Volgograd region	<i>NA</i>	awned
116	65069	Status	compositummltutum	Russia, Volgograd region	<i>Bl</i>	awnless
117	65174	Webster	lutescens	Canada	<i>Bl</i>	awnless
118	65175	Wisdom	lutescens	Canada	<i>Bl</i>	awnless
119	65192	L'govskaya 4	lutescens	Russia, Kursk region	<i>Bl</i>	awnless
120	65207	Ermak	erythrospermum	Russia, Rostov region	<i>bl</i>	awned
121	65216	Berezit	lutescens	Russia, Stavropol region	<i>Bl</i>	awnless
122	65217	Kseniay	erythrospermum	Russia, Stavropol region	<i>bl</i>	awned
123	65233	Donstar	lutescens	Russia, Rostov region	<i>Bl</i>	awnless
124	65292	GK Margit	lutescens	Hungary	<i>Bl</i>	awnless
125	65331	FT Wonder	erythrospermum	Canada	<i>bl</i>	awned
126	65375	Don 105	lutescens	Russia, Rostov region	<i>Bl</i>	awnless
127	65397	Intrada	graecum	USA	<i>bl</i>	awned
128	65405	Amigo	erythrospermum	USA	<i>bl</i>	awned
129	65406	Regina	lutescens	Czech Republic	<i>Bl</i>	awnless
130	65407	Senta	lutescens	Czech Republic	<i>Bl</i>	awnless
131	65408	Zdar	lutescens	Czech Republic	<i>Bl</i>	awnless
132	65409	Boka	lutescens	Czech Republic	<i>Bl</i>	awnless
133	65610	Dzhangal	albidum	Russia, Saratov region	<i>Bl</i>	awnless
134	65613	Kalach 60	lutescens	Russia, Saratov region	<i>Bl</i>	awnless
135	65619	Sakwa	lutescens	Poland	<i>Bl</i>	awnless
136	65632	Nutka	lutescens	Poland	<i>Bl</i>	awnless
137	65635	Turnia	lutescens	Poland	<i>Bl</i>	awnless

138	65638	Certo	lutescens	Germany	<i>B1</i>	awnless
139	65672	Firuza 40	erythrospermum	Russia, Stavropol region	<i>b1</i>	awned
140	65756	Nemchinovskaya 17	erythrospermum	Russia, Moscow region	<i>b1</i>	awned
141	65923	Bona Dea	lutescens	Slovakia	<i>B1</i>	awnless
142	65927	Malvina	lutescens	Slovakia	<i>B1</i>	awnless
143	65928	Malyska	lutescens	Slovakia	<i>B1</i>	awnless
144	65929	Markola	lutescens	Slovakia	<i>B1</i>	awnless
145	65935	Verita	lutescens	Slovakia	<i>B1</i>	awnless
146	66053	Kristy	lutescens	Canada	<i>B1</i>	awnless
147	66054	AC Buteo	erythrospermum	Canada	<i>b1</i>	awned
148	66306	Kamyshanka 4	lutescens	Russia, Volgograd region	<i>B1</i>	awnless
149	66308	Torrild	lutescens	Germany	<i>B1</i>	awnless
150	66309	Omskaya 5	lutescens	Russia, Omsk region	<i>B1</i>	awnless
151	66321	Kobra	lutescens	Poland	<i>B1</i>	awnless
152	66322	Soraja	lutescens	Poland	<i>B1</i>	awnless
153	66323	Bogatka	lutescens	Poland	<i>B1</i>	awnless
154	66325	Muza	lutescens	Poland	<i>B1</i>	awnless
155	66332	Lidiya	erythrospermum	Russia, Rostov region	<i>b1</i>	awned
156	66336	Kolos Orenbuzhiya	lutescens	Russia, Orenburg region	<i>B1</i>	awnless
157	66337	Pionerskaya 32	erythrospermum	Russia, Orenburg region	<i>b1</i>	awned
158	66341	Bazalt 2	lutescens	Russia, Voronezh region	<i>B1</i>	awnless
159	66504	Bazis	erythrospermum	Russia, Samara region	<i>b1</i>	awned
160	66626	Priirtyshskaya	lutescens	Russia, Omsk region	<i>B1</i>	awnless
161	66628	Elanskaya	erythrospermum	Russia, Volgograd region	<i>b1</i>	awned
162	66805	Bezostaya 100	lutescens	Russia, Krasnodar region	<i>B1</i>	awnless
163	66816	Caravan	lutescens	Russia, Krasnodar region	<i>B1</i>	awnless
164	66827	Hamlet	lutescens	Germany	<i>B1</i>	awnless
165	66842	Hamdan	lutescens	Russia, Kalmykia	<i>B1</i>	awnless
166	66843	Sarul	lutescens	Russia, Kalmykia	<i>B1</i>	awnless
167	66883	Riphey	erythrospermum	Russia, Orenburg region	<i>b1</i>	awned
168	67211	Darina	erythrospermum	Russia, Tatarstan	<i>b1</i>	awned
169	67213	Nadezhda	lutescens	Russia, Tatarstan	<i>B1</i>	awnless

* Zuev E.V., Amri A., Brykova A.N., Pyukkenen V.P., Mitrofanova O.P. Atlas of bread wheat (*Triticum aestivum* L.) genetic diversity based on spike and kernel characters. Supervising editor N.P. Goncharov. VIR, ICARDA. – 2nd edition. St. Petersburg, 2019. 132 p.

** awned varieties are highlighted in bold