

## SUPPLEMENTARY MATERIAL

to the article by I.D. Busov, M.A. Genayev, E.G. Komyshev,  
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“A pipeline for processing hyperspectral images,  
with a case of melanin-containing barley grains as an example”

### Characteristics of barley samples used in the melanin analysis

Sample	Sample name	Melanin	Anthocyanins	Sample	Sample name	Melanin	Anthocyanins
1	10A-2-11	no	yes	46	10A-1-4	no	yes
2	10A-2-11	no	yes	47	10A-1-5	no	yes
3	10A-2-5	no	yes	48	10A-1-5	no	yes
4	10A-2-5	no	yes	49	10A-1-8	no	yes
5	10A-6-1	no	yes	50	10A-1-8	no	yes
6	10A-6-1	no	yes	51	10A-2-1	no	yes
7	10A-6-11	no	yes	52	10A-2-1	no	yes
8	10A-6-11	no	yes	53	10A-2-4	no	yes
9	10A-6-2	no	yes	54	10A-2-4	no	yes
10	10A-6-2	no	yes	55	10A-2-6	no	yes
11	10A-6-3	no	yes	56	10A-2-6	no	yes
12	10A-6-3	no	yes	57	10A-9-1	no	yes
13	10A-6-4	no	yes	58	10A-9-1	no	yes
14	10A-6-4	no	yes	59	10A-9-3	no	yes
15	10A-6-9	no	yes	60	10A-9-3	no	yes
16	10A-6-9	no	yes	61	10A-9-4	no	yes
17	10A-9-13	no	yes	62	10A-9-4	no	yes
18	10A-9-13	no	yes	63	10A-9-7	no	yes
19	10A-9-9	no	yes	64	10A-9-7	no	yes
20	10A-9-9	no	yes	65	22-1	no	no
21	10B-1-10	no	no	66	22-1	no	no
22	10B-1-10	no	no	67	7B-1-1	no	no
23	10B-1-2	no	no	68	7B-1-1	no	no
24	10B-1-2	no	no	69	7B-1-13	no	no
25	10B-1-4	no	no	70	7B-1-13	no	no
26	10B-1-4	no	no	71	7B-1-2	no	no
27	10B-1-5	no	no	72	7B-1-2	no	no
28	10B-1-5	no	no	73	7B-2-1	no	yes
29	10B-1-8	no	no	74	7B-2-1	no	yes
30	10B-1-8	no	no	75	7B-2-13	no	yes
31	10B-5-1	no	no	76	7B-2-13	no	yes
32	10B-5-1	no	no	77	7B-2-2	no	yes
33	10B-5-2	no	no	78	7B-2-2	no	yes
34	10B-5-2	no	no	79	7B-2-4	no	yes
35	10B-5-4	no	no	80	7B-2-4	no	yes
36	10B-5-4	no	no	81	7B-2-9	no	yes
37	10B-5-7	no	no	82	7B-2-9	no	yes
38	10B-5-7	no	no	83	7B-4-1	no	yes
39	10A-1-11	no	yes	84	7B-4-1	no	yes
40	10A-1-11	no	yes	85	7B-4-10	no	yes
41	10A-1-12	no	yes	86	7B-4-10	no	yes
42	10A-1-12	no	yes	87	7B-4-12	no	yes
43	10A-1-3	no	yes	88	7B-4-12	no	yes
44	10A-1-3	no	yes	89	7B-4-2	no	yes
45	10A-1-4	no	yes	90	7B-4-2	no	yes

**Supplementary Material (continue)**

Sample	Sample name	Melanin	Anthocyanins	Sample	Sample name	Melanin	Anthocyanins
91	7B-4-13	no	yes	139	k-17384 (VIR)	yes	yes
92	7B-4-13	no	yes	140	k-17527 (VIR)	no	no
93	941 1-9-1	no	yes	141	k-17554 (VIR)	yes	yes
94	941 1-9-1	no	yes	142	k-176 (VIR)	yes	no
95	941 1-9-12	no	yes	143	k-17680 (VIR)	yes	no
96	941 1-9-12	no	yes	144	k-17805 (VIR)	no	no
97	941 1-9-13	no	yes	145	k-18067 (VIR)	yes	no
98	941 1-9-13	no	yes	146	k-18569 (VIR)	yes	no
99	941 1-9-14	no	yes	147	k-18676 (VIR)	yes	no
100	941 1-9-14	no	yes	148	k-18723 (VIR)	no	yes
101	941 1-9-2	no	yes	149	k-18729 (VIR)	no	yes
102	941 1-9-2	no	yes	150	k-18830 (VIR)	yes	no
103	941 1-9-4	no	yes	151	k-18996 (VIR)	yes	yes
104	941 1-9-4	no	yes	152	k-19068 (VIR)	yes	yes
105	9C-3-2	no	no	153	k-19750 (VIR)	yes	no
106	9C-3-2	no	no	154	k-19879 (VIR)	yes	no
107	9C-3-1	no	no	155	k-19982 (VIR)	yes	no
108	9C-3-1	no	no	156	k-19997 (VIR)	yes	no
109	9C-3-3	no	no	157	k-20024 (VIR)	yes	no
110	9C-3-3	no	no	158	k-20028 (VIR)	no	yes
111	AL (ICG)*	no	no	159	k-20040 (VIR)	yes	no
112	Alej	no	no	160	k-20042 (VIR)	no	no
113	Alej	no	no	161	k-20048 (VIR)	yes	no
114	Alej-BA	no	yes	162	k-20065 (VIR)	yes	no
115	BLP-h (ICG)	yes	no	163	k-20067 (VIR)	no	no
116	BLP-n (ICG)	yes	no	164	k-20077 (VIR)	yes	yes
117	Bowman (ICG)	no	no	165	k-20079 (VIR)	no	yes
118	gBLP (ICG)	yes	no	166	k-20154 (VIR)	yes	no
119	Golden Promise (ICG)	no	no	167	k-20195 (VIR)	yes	no
120	Grace (ICG)	no	no	168	k-20250 (VIR)	yes	no
121	k-10046 (VIR)**	yes	yes	169	k-20469 (VIR)	no	no
122	k-1015 (VIR)	no	no	170	k-20519 (VIR)	no	no
123	k-10382 (VIR)	yes	no	171	k-20526 (VIR)	no	yes
124	k-1067 (VIR)	yes	yes	172	k-20921 (VIR)	yes	no
125	k-11356 (VIR)	yes	no	173	k-20923 (VIR)	yes	no
126	k-11358 (VIR)	yes	no	174	k-21126 (VIR)	yes	no
127	k-11361 (VIR)	yes	no	175	k-21551 (VIR)	yes	no
128	k-11372 (VIR)	yes	no	176	k-21567 (VIR)	yes	no
129	k-11917 (VIR)	yes	no	177	k-21850 (VIR)	yes	yes
130	k-12265 (VIR)	yes	no	178	k-21853 (VIR)	no	yes
131	k-12284 (VIR)	yes	no	179	k-21954 (VIR)	yes	no
132	k-13241 (VIR)	yes	no	180	k-22430 (VIR)	no	no
133	k-13273 (VIR)	no	no	181	k-22477 (VIR)	yes	no
134	k-14645 (VIR)	yes	no	182	k-22591 (VIR)	no	yes
135	k-15151 (VIR)	yes	no	183	k-22603 (VIR)	no	no
136	k-15160 (VIR)	no	yes	184	k-22628 (VIR)	yes	yes
137	k-152 (VIR)	yes	no	185	k-22784 (VIR)	yes	no
138	k-15790 (VIR)	yes	no	186	k-23176 (VIR)	yes	no

## Supplementary Material (continue)

Sample	Sample name	Melanin	Anthocyanins	Sample	Sample name	Melanin	Anthocyanins
187	k-23255 (VIR)	yes	no	235	k-31075 (VIR)	yes	no
188	k-23306 (VIR)	yes	no	236	k-3256 (VIR)	yes	no
189	k-23378 (VIR)	yes	no	237	k-3282 (VIR)	yes	no
190	k-23441 (VIR)	yes	no	238	k-3287 (VIR)	yes	no
191	k-23444 (VIR)	no	no	239	k-3302 (VIR)	yes	yes
192	k-23454 (VIR)	no	yes	240	k-3477 (VIR)	yes	yes
193	k-23728 (VIR)	no	yes	241	k-3502 (VIR)	yes	no
194	k-24646 (VIR)	no	no	242	k-3673 (VIR)	no	no
195	k-24825 (VIR)	yes	no	243	k-3740 (VIR)	yes	no
196	k-24970 (VIR)	yes	no	244	k-3959 (VIR)	yes	no
197	k-25010 (VIR)	yes	no	245	k-4360 (VIR)	no	no
198	k-25617 (VIR)	no	no	246	k-4690 (VIR)	yes	yes
199	k-25789 (VIR)	no	yes	247	k-5144 (VIR)	yes	no
200	k-25793 (VIR)	yes	no	248	k-5445 (VIR)	yes	no
201	k-25816 (VIR)	no	no	249	k-5447 (VIR)	yes	no
202	k-25855 (VIR)	yes	no	250	k-5477 (VIR)	yes	no
203	k-25872 (VIR)	yes	yes	251	k-5484 (VIR)	yes	no
204	k-26105 (VIR)	no	yes	252	k-5488 (VIR)	yes	no
205	k-26311 (VIR)	yes	no	253	k-5911 (VIR)	no	no
206	k-26321 (VIR)	no	no	254	k-7141 (VIR)	yes	no
207	k-26590 (VIR)	yes	no	255	k-7189 (VIR)	yes	no
208	k-26648 (VIR)	no	yes	256	k-7327 (VIR)	yes	no
209	k-26750 (VIR)	yes	no	257	k-7383 (VIR)	yes	no
210	k-26754 (VIR)	yes	no	258	k-7851 (VIR)	yes	no
211	k-26860 (VIR)	yes	no	259	k-8279 (VIR)	no	yes
212	k-27153 (VIR)	yes	no	260	k-8682 (VIR)	yes	yes
213	k-27295 (VIR)	yes	no	261	Keystone (ICG)	no	no
214	k-2765 (VIR)	yes	no	262	Morex (ICG)	no	no
215	k-27692 (VIR)	yes	yes	263	OWB1	yes	yes
216	k-27989 (VIR)	no	yes	264	OWB13	no	no
217	k-28057 (VIR)	no	yes	265	OWB17	no	yes
218	k-28201 (VIR)	yes	yes	266	OWB18	yes	yes
219	k-2959 (VIR)	yes	no	267	OWB2	no	no
220	k-2998 (VIR)	no	yes	268	OWB20	yes	yes
221	k-30337 (VIR)	yes	no	269	OWB26	no	no
222	k-30387 (VIR)	yes	no	270	OWB36	yes	yes
223	k-30388 (VIR)	yes	no	271	OWB39	no	yes
224	k-30625 (VIR)	yes	no	272	OWB45	no	no
225	k-30658 (VIR)	yes	no	273	OWB49	no	yes
226	k-30659 (VIR)	yes	no	274	OWB5	yes	yes
227	k-30660 (VIR)	yes	no	275	OWB53	no	yes
228	k-30675 (VIR)	yes	no	276	OWB59	no	yes
229	k-30676 (VIR)	yes	no	277	OWB62	yes	yes
230	k-30683 (VIR)	yes	yes	278	OWB64	yes	no
231	k-30748 (VIR)	yes	no	279	OWB69	yes	no
232	k-3079 (VIR)	yes	no	280	OWB7	yes	yes
233	k-30808 (VIR)	no	yes	281	OWB8	no	yes
234	k-30814 (VIR)	no	yes	282	OWB82	no	no

**Supplementary Material (end)**

Sample	Sample name	Melanin	Anthocyanins	Sample	Sample name	Melanin	Anthocyanins
283	OWB85	no	yes	299	Kolchan (ICG)	no	no
284	OWB90	no	yes	300	Krasnoyarskij 1 (ICG)	no	no
285	OWB91	yes	yes	301	L-421 (ICG)	no	no
286	OWB93	no	yes	302	Lipen' (ICG)	no	no
287	OWB-Rec	no	no	303	Lun' (ICG)	no	no
288	PLP (ICG)	no	yes	304	Moskovskij 121 (ICG)	no	no
289	Purple Black (ICG)	yes	yes	305	Novosibirskij 80 (ICG)	no	no
290	Stepnoe (ICG)	no	no	306	Omskij golozernyj 2 (ICG)	no	no
291	Alej (ICG)	no	no	307	Podarok Sibiri (ICG)	no	no
292	Archekas (ICG)	no	no	308	Rejd (ICG)	no	no
293	Belogorskij (ICG)	no	no	309	Svetik (ICG)	no	no
294	Biom (ICG)	no	no	310	Signal (ICG)	no	no
295	Viner (ICG)	no	no	311	Sobolek (ICG)	no	no
296	Dagestanskij (ICG)	no	no	312	Talan (ICG)	no	no
297	Zolotnik (ICG)	no	no	313	Tanay (ICG)	no	no
298	Impul's (ICG)	no	no				

\* ICG – Institute of Cytology and Genetics SB RAS.

\*\* VIR – N.I. Vavilov All-Russian Institute of Plant Genetic Resources.