

Table S2: Complete characterization of 102 Argentinean hexaploide wheat cultivars based on 3 biochemical and 17 functional molecular markers

N	Cultivar	Company	Biochemical Markers			Closely Likage to genes Markers				Functional Markers												
			Glu-A1	Glu-B1	Glu-D1	Lr34	Lr 24	Lr 10	Ppd-B1	Vrn-A1	Vrn-B1	Vrn-D1	Ppd-D1	Rht-B1	Rht-D1	PinA-D1	Glu-A3	Wx-A1	Wx-B1	Vp1-B3	Ppo-D1	Ppo-A1
1	ACA 201	ACA	2*	17+18	5+10	229	Null	282	s	s	s	s	s	a	b	a	f	a	a	d	a	a
2	ACA 202	ACA	2*	7+9	5+10	229	Null	Null	s	s	s	w	s	a	b	a	e	g	a	d	a	a
3	ACA 223	ACA	1	7+9	5+10	150	Null	282	s	s	s	w	s	b	a	a	c	a	a	d	b	a
4	ACA 320	ACA	2*	7oe+8*	5+10	229	Null	282	s	w	s	s	s	a	a	a	f	a	b	d	a	a
5	ACA 801	ACA	2*	7+9	5+10	150	Null	Null	s	w	s	w	i	b	a	a	c	a	a	d	a	a
6	ACA 901	ACA	2*	7+9	5+10	229	Null	Null	s	w	s	s	i	b	a	b	c	g	a	d	a	a
7	ACA 903B	ACA	2*	7+9	5+10	229	Null	Null	i	s	s	w	i	a	b	b	g	a	a	d	a	b
8	ACA 906	ACA	1	7+9	5+10	150	Null	Null	s	w	w	s	i	b	a	b	f	a	a	c	b	a
9	ACA 907	ACA	2*	7+8	5+10	229	Null	362	s	s	s	s	i	b	a	b	f	a	a	c	b	a
10	Baguette 10	Nidera	null	6+8	5+10	229	Null	362	s	s*	w	w	i	a	a	a	f	a	a	c	b	b
11	Baguette 17	Nidera	null	7+9	5+10	229	Null	Null	s	s	w	w	i	a	a	a	b	a	a	a	b	b
12	Baguette 18	Nidera	null	13+16	5+10	229	Null	Null	s	s*	s	w	i	a	a	a	f	a	a	b	b	b
13	Baguette 19	Nidera	null	7+8	5+10	229	Null	Null	s	s*	w	w	i	a	b	a	d	a	a	b	b	a
14	Baguette 21	Nidera	null	7+8	2+12	229	Null	Null	s	w	w	w	i	a	b	a	d	a	a	b	b	b
15	Baguette 30	Nidera	null	7oe+8*	2+12	229	Null	Null	s	s	s	w	s	b	a	a	c	a	a	b	b	b
16	Baguette 31	Nidera	2*	7	5+10	229	Null	Null	s	w	w	w	s	a	b	a	e	a	a	b	b	b
17	Baguette 9	Nidera	2*	6+8	5+10	229	Null	282	s	s*	w	w	i	a	a	a	d	a	a	b	b	b
18	Baguette P. 11	Nidera	2*	7+8	5+10	229	Null	282	s	s*	w	w	i	a	a	a	d	a	a	b	b	b
19	Barletta 77	¿?	2*	7+8	5+10	229	Null	Null	s	s	s	w	s	a	a	a	b	a	a	d	a	a
20	BIOINTA 1000	INTA	1	7oe+8*	5+10	229	Null	282	i	w	s	w	i	a	b	b	c	a	a	d	b	a
21	BIOINTA 1001	INTA	1	7+9	5+10	229	Null	282	s	w	s	s	i	a	a	a	b	a	b	a	a	a
22	BIOINTA 1002	INTA	1	7+9	5+10	229	Null	Null	i	w	w	s	s	a	b	b	d	a	a	c	a	a
23	BIOINTA 1003	INTA	2*	7+9	5+10	150	350	Null	s	s	w	w	i	b	a	b	b	a	a	c	b	a
24	BIOINTA 1004	INTA	2*	7+8	5+10	229	350	282	i	s	w	w	s	b	a	a	c	a	a	c	b	a
25	BIOINTA 1005	INTA	2*	7+9	5+10	229	Null	Null	s	w	s	s	i	b	a	b	c	a	a	c	a	a
26	BIOINTA 1006	INTA	1	7+9	5+10	229	Null	Null	s	w	s	s	i	b	a	b	g	a	b	c	a	a
27	BIOINTA 2001	INTA	2*	7+8	5+10	229	Null	282	s	w	s	s	-9	a	b	a	f	a	-9	c	b	a
28	BIOINTA 2004	INTA	2*	7+8	5+10	150	Null	Null	i	w	w	w	s	b	a	a	h	a	b	b	a	a
29	BIOINTA 3003	INTA	2*	7+9	5+10	229	Null	Null	i	w	w	w	s	b	a	a	h	a	a	c	a	a
30	BIOINTA 3004	INTA	2*	7+9	5+10	229	Null	282	s	s	s	s	s	b	a	b	c	a	a	c	b	a

31	BIOINTA 3005	INTA	2*	7+8	4+12	229	Null	282	i	w	w	w	s	a	b	b	f	a	a	d	a	b
32	SY100	Syngenta	2*	6+8	5+10	150	Null	Null	i	w	s	s	s	a	b	a	d	a	b	d	b	b
33	SY200	Syngenta	2*	6+8	5+10	229	Null	362	s	w	w	s	i	a	a	a	g	a	a	d	b	b
34	SY300	Syngenta	2*	6+8	5+10	229	Null	362	s	s*	w	w	i	a	a	a	f	a	a	-9	b	b
35	Buck 55CL	Buck	2*	7+9	5+10	229	Null	Null	i	s	s	w	s	a	a	b	f	a	a	d	a	a
36	Buck 75 Aniversario	Buck	1	7+8	5+10	229	Null	Null	s	s	w	w	i	a	b	a	c	a	b	d	b	a
37	Buck AGP Fast	Buck	null	13+16	5+10	229	Null	282	s	s	w	w	s	b	a	b	f	a	a	b	a	a
38	Buck Baqueano	Buck	1	7+9	5+10	229	Null	282	s	w	w	s	s	a	b	a	c	a	a	d	-9	a
39	Buck Biguá	Buck	1	7oe+8*	5+10	229	Null	Null	i	s	w	w	s	a	b	a	d	g	a	d	-9	a
40	Buck Brasil	Buck	1	7+8	5+10	150	Null	282	s	s	s	w	-9	a	b	b	f	a	a	c	b	a
41	Buck Chacarero	Buck	2*	17+18	5+10	229	Null	-9	i	s	s	s	s	a	b	a	f	a	a	d	b	a
42	Buck Guapo	Buck	1	7oe+8*	5+10	229	Null	Null	s	w	s	w	s	a	b	a	e	a	a	d	b	a
43	Buck Huanchen	Buck	2*	7+9	5+10	150	Null	282	s	w	w	s	i	b	a	b	c	a	a	d	a	a
44	Buck Malevo	Buck	2*	7oe+8*	5+10	229	350	282	s	w	s	w	s	a	b	b	f	a	a	d	b	a
45	Buck Mangrullo	Buck	1	17+18	5+10	229	Null	Null	s	w	s	w	s	a	b	a	f	a	e	d	b	a
46	Buck Meteoro	Buck	1	7oe+8*	5+10	229	Null	282	s	s	s	w	s	a	b	a	f	a	a	c	b	a
47	Buck Napostá	Buck	1	7	2+12	229	Null	362	s	s	s	w	s	a	a	a	c	a	-9	b	b	a
48	Buck Norteño	Buck	2*	7oe+8*	5+10	229	Null	282	s	w	s	w	s	a	a	a	f	a	a	c	b	a
49	Buck Pingo	Buck	1	17+18	5+10	229	Null	282	s	s	w	s	s	a	b	b	f	a	e	d	b	a
50	Buck Pronto	Buck	2*	7oe+8*	5+10	229	Null	Null	i	s	w	w	s	a	b	b	d	a	a	c	b	a
51	Buck Puelche	Buck	1	7+9	5+10	229	350	282	s	s	w	w	i	b	a	b	f	a	b	c	a	a
52	Buck Ranquel	Buck	2*	7+9	5+10	229	Null	282	i	w	w	w	i	a	b	a	c	a	a	c	a	a
53	Buck Taita	Buck	2*	17+18	5+10	229	Null	Null	s	s	w	w	i	a	b	b	f	a	a	c	b	a
54	Don Mario Arex	Don Mario	null	7+9	5+10	229	Null	282	i	w	s	s	i	a	a	b	c	a	a	c	b	a
55	Don Mario Atlax	Don Mario	1	7+9	5+10	229	Null	Null	i	w	s	s	i	b	a	b	c	a	a	c	b	a
56	Don Mario Cronox	Don Mario	2*	7+9	5+10	229	350	282	i	w	s	s	i	b	a	b	g	a	a	c	b	a
57	Don Mario Onix	Don Mario	2*	7+9	5+10	229	Null	282	i	w	s	s	s	a	a	b	c	a	a	c	b	a
58	Don Mario Themix	Don Mario	2*	7+9	5+10	229	Null	282	i	w	w	w	s	b	b	a	f	a	a	b	a	a
59	INIA Centinela	INIA	2*	7+9	5+10	229	Null	Null	s	s	s	s	i	b	a	b	c	g	a	c	a	b
60	INIA Churrinche	INIA	2*	7+8	5+10	229	350	282	i	s	w	w	s	b	a	a	a	a	a	c	b	a
61	INIA Cóndor	INIA	2*	7+8	5+10	150	Null	Null	s	s	w	w	i	a	b	a	b	a	a	c	a	a
62	INIA Torcaza	INIA	2*	17+18	5+10	229	350	282	s	w	s	w	s	b	a	b	f	a	a	c	b	a
63	Klein 32	Klein	null	7+8	2+12	229	Null	Null	s	w	w	w	i	a	a	a	c	a	e	a	b	a
64	Klein Atlas	Klein	1	7oe+8*	2+12	229	Null	Null	s	s*	w	w	i	a	a	a	e	a	e	a	b	b

65	Klein Brujo	Klein	1	7+9	5+10	229	Null	Null	s	w	w	s	i	a	a	b	c	a	a	c	b	b
66	Klein Cacique	Klein	2*	7+8	5+10	229	Null	Null	s	w	s	s	s	b	a	b	c	a	a	d	b	a
67	Klein Capricornio	Klein	2*	7+8	5+10	150	Null	Null	s	w	w	s	s	a	a	b	f	a	b	d	b	a
68	Klein Carpincho	Klein	1	7+9	5+10	150	Null	282	s	w	s	s	s	b	a	b	b	a	a	d	b	a
69	Klein Castor	Klein	1	17+18	5+10	229	Null	Null	s	w	s	s	i	b	a	b	c	a	a	b	a	a
70	Klein Centauro	Klein	1	7+8	5+10	229	Null	Null	s	s*	w	w	i	a	a	a	d	a	a	d	b	b
71	Klein Chajá	Klein	2*	17+18	5+10	229	Null	Null	s	s	w	w	i	a	b	a	c	a	b	d	b	a
72	Klein Don Enrique	Klein	2*	17+18	5+10	229	Null	282	s	w	s	w	i	b	a	a	a	a	a	d	b	b
73	Klein Escorpión	Klein	1	7+9	5+10	150	Null	282	s	w	s	s	i	a	a	b	a	a	b	d	b	a
74	Klein Gavilán	Klein	2*	7+9	5+10	229	350	282	s	s	s	s	s	b	a	b	b	a	a	d	a	a
75	Klein Gladiador	Klein	1	7+9	5+10	229	Null	282	s	w	w	s	i	b	a	b	f	a	a	b	a	a
76	Klein Guerrero	Klein	1	7+9	5+10	150	Null	282	s	w	s	s	i	b	a	b	c	a	a	d	b	a
77	Klein Impacto	Klein	2*	7+9	5+10	229	Null	362	s	w	s	w	s	a	a	a	b	a	a	d	b	a
78	Klein León	Klein	2*	7+9	2+12	229	Null	Null	s	w	s	w	i	b	a	b	d	a	a	d	b	b
79	Klein Nutria	Klein	2*	7+9	5+10	150	Null	Null	s	w	s	w	i	a	a	a	e	a	a	d	b	a
80	Klein Pantera	Klein	2*	7+9	5+10	229	Null	362	s	w	w	s	s	a	a	b	d	a	a	c	b	b
81	Klein Proteo	Klein	1	7+9	5+10	229	Null	282	s	w	s	s	s	a	a	a	g	a	a	a	b	a
82	Klein Rayo	Klein	2*	7+9	5+10	229	Null	Null	s	w	s	s	i	b	a	b	b	a	a	d	a	a
83	Klein Rendidor	Klein	2*	7+9	5+10	229	Null	362	i	w	s	w	s	a	a	a	f	a	-9	b	-9	-9
84	Klein Tauro	Klein	1	7+8	5+10	229	Null	Null	s	w	s	s	i	a	a	b	c	a	a	d	b	a
85	Klein Tigre	Klein	1	7+9	5+10	150	Null	282	s	w	s	s	i	b	a	b	b	a	a	d	b	a
86	Klein Yará	Klein	2*	7+9	5+10	229	Null	Null	s	w	s	s	s	b	a	a	f	a	a	b	b	a
87	Klein Zorro	Klein	2*	7+9	5+10	229	Null	Null	s	w	w	s	i	a	a	b	c	a	a	d	b	a
88	LE 2330	INIA	1	7+9	5+10	150	Null	Null	s	s	w	s	s	b	a	a	b	a	a	d	b	a
89	LE 2331	INIA	1	17+18	5+10	229	Null	Null	s	w	s	w	i	b	a	a	f	a	a	d	-9	a
90	LE 2333	INIA	2*	7+9	5+10	229	Null	Null	i	w	w	s	i	b	a	b	b	a	a	d	b	a
91	LE 2341	INIA	2*	7+9	5+10	229	Null	362	s	w	w	w	i	a	a	b	f	a	a	c	b	a
92	Marcos Juárez INTA	INTA	2*	7+9	2+12	150	Null	Null	i	w	w	w	i	a	b	a	d	g	a	c	b	a
93	Olaeta Artillero	Olaeta	2*	7+9	5+10	229	Null	282	s	w	s	w	s	a	a	a	f	a	a	b	a	a
94	ProINTA Elite	INTA	2*	7+9	5+10	229	Null	Null	s	s	w	w	i	a	b	b	c	a	a	d	a	b
95	ProINTA Gaucho	INTA	2*	13+16	2+12	229	Null	282	i	w	s	s	i	a	b	b	c	a	a	d	a	a
96	ProINTA Granar	INTA	2*	13+16	5+10	150	Null	Null	s	s	s	w	i	a	a	a	c	a	a	d	a	a
97	ProINTA Guazú	INTA	1	7+9	5+10	150	Null	Null	s	w	w	s	s	b	a	b	c	a	a	d	b	a
98	ProINTA Isla Verde	INTA	1	13+16	5+10	150	Null	282	s	s	w	w	i	a	a	b	c	a	a	c	a	a

99	ProINTA Oasis	INTA	1	7+9	5+10	229	Null	282	s	w	s	w	i	a	a	a	b	a	a	d	b	a
100	Sirirí	INIA	2*	7+9	5+10	229	Null	Null	s	s	s	s	i	b	a	a	c	a	a	a	b	b
101	Sinvalocho	MA	-9	7+8	5+10	229	Null	362	s	s*	s	w	s	a	a	a	e	a	a	a	-9	a
102	SRN Nogal	Sursem	2*	7+8	5+10	229	Null	Null	s	w	w	w	i	a	a	a	g	a	a	d	b	b

Molecular Markers	References
<i>Glu-A1:</i>	
<i>Glu-B1:</i>	HMW-Gs were classified according to their electrophoretic mobility in SDS-PAGE (Pflüger et al. 2001). Glu-B1 7oe+8* allele was differentiate from 7+8 based on Butow et al. (2004) molecular markers
<i>Glu-D1:</i>	
<i>Lr34</i>	Alleles scored based on Lagudah et. al (2006); 150 bp allele + for <i>Lr34</i> and 229 bp allele - for <i>Lr34</i>
<i>Lr 24</i>	Alleles scored based on Schachermayr et al. (1995); 350 bp allele + for <i>Lr24</i> and Null allele (lack of PCR amplification) - for <i>Lr24</i>
<i>Lr 10</i>	Alleles scored based on Schachermayr et al. (1997); 282 bp allele + for <i>Lr10</i> and 362 bp and Null allele - for <i>Lr10</i>
<i>Ppd-B1</i>	Alleles scored based on Díaz et al. (2012); i = <i>Ppd-B1</i> Sonora 64 insensitive allele; s = <i>ppd-B1</i> sensitive allele
<i>Vrn-A1</i>	Alleles scored based on Yan et al. (2004); s = <i>Vrn-A1a</i> spring allele; s* = <i>Vrn-A1b</i> spring allele; w = <i>vrn-A1</i> winter allele
<i>Vrn-B1</i>	Alleles scored based on Fu et al. (2005); s = <i>Vrn-B1</i> spring allele; w = <i>vrn-B1</i> winter allele
<i>Vrn-D1</i>	Alleles scored based on Fu et al. (2005); s = <i>Vrn-D1</i> spring allele; w = <i>vrn-D1</i> winter allele
<i>Ppd-D1</i>	Alleles scored based on Beales et al. (2007); i = <i>Ppd-D1a</i> insensitive allele; s = <i>Ppd-D1b</i> sensitive allele
<i>Rht-B1</i>	Alleles scored based on Ellis et al. (2002); a = <i>Rht-B1a</i> tall allele; b = <i>Rht-B1b</i> dwarf allele
<i>Rht-D1</i>	Alleles scored based on Ellis et al. (2002); a = <i>Rht-D1a</i> tall allele; b = <i>Rht-D1b</i> dwarf allele
<i>PinA-D1</i>	Alleles scored based on Gautier et al. (1994); a = <i>PinA-D1a</i> soft allele; b = <i>PinA-D1b</i> hard allele
<i>Glu-A3</i>	Alleles scored based on Zhang et al. (2004); a = <i>Glu-A1a</i> allele; b = <i>Glu-A3b</i> allele; c = <i>Glu-A3c</i> allele; d = <i>Glu-A3d</i> allele; e = <i>Glu-A3e</i> allele; f = <i>Glu-A3f</i> allele; g = <i>Glu-A3g</i> allele; h = Presence of 1AL/1RS translocation
<i>Wx-A1</i>	Alleles scored based on McLauchlan et al. (2001) and Vanzetti et al. (2009); a = <i>Wx-A1a</i> allele; g = <i>Wx-A1g</i> allele
<i>Wx-B1</i>	Alleles scored based on McLauchlan et al. (2001) and Vanzetti et al. (2009); a = <i>Wx-B1a</i> allele; b = <i>Wx-B1b</i> allele and e = <i>Wx-B1e</i> allele
<i>Vp1-B3</i>	Alleles scored based on Yang et al. (2007) a = <i>Vp1-B3a</i> allele; b = <i>Vp1-B3b</i> allele and c = <i>Vp1-B3c</i> allele; d = <i>Vp1-B3d</i> allele
<i>Ppo-D1</i>	Alleles scored based on He et al. (2007); a = <i>Ppo-A1a</i> allele; b = <i>Ppo-A1b</i> allele
<i>Ppo-A1</i>	Alleles scored based on He et al. (2007); a = <i>Ppo-D1a</i> allele; b = <i>Ppo-D1b</i> allele

Highlighted

- 9 Missing data
- Rare alleles < 5 cultivars