

The Gluten Composition of Wheat Varieties and Genotypes

PART III. COMPOSITION TABLE FOR THE LMW SUBUNITS OF GLUTENIN (3rd edition)

F. Békés^{1*}, C. R. Cavanagh^{1*}, C. W. Wrigley², S. Martinov³ and W. Bushuk⁴

¹ CSIRO Plant Industry, Canberra, ACT 2600, Australia

² Food Science Australia and Wheat CRC, North Ryde (Sydney), NSW 1670, Australia

³ N.I.Vavilov Institute of Plant Production, Saint Petersburg, 190000, Russia

⁴ Food Science, University of Manitoba, Winnipeg, MB, R3T 2N2, Canada

*For any comments on or additions to these databases, please contact F. Bekes (ferenc.bekes@csiro.au) or C. Cavanagh (colin.cavanagh@csiro.au)

Introduction to the Second Edition

Based on responses received after the publication of the first two versions, the LMW glutenin subunit allele database is proving to be a useful tool for experts working in the various aspects of wheat science and technology. With the help and contributions of many individuals, it has been possible to improve and significantly enlarge the database. Several duplications, and errors of data and spelling, have been corrected and a large number of new entries has been added, increasing the total number of cultivars/lines involved to over 2400, derived from new research publications, personal communications and some international collaborations directly aiming for the identification of HMW-Gs alleles in large sample populations from Kazakhstan/Siberia, Hungary and China. The names of all contributing individuals have been added to the Acknowledgement Section below.

Acknowledgements

Contributions, by providing data and helping to put together this database, are acknowledged by the authors to Baracscai I. (Hungary), Cornish, G. (Australia), Flugger, L. (Argentina), Goger, S. (Austria), Gregova, E. (Slovak Republic), Howitt, C. (Australia), Juhasz, A. (Hungary), Keresztesy, E. (Hungary), Liu, L. (Australia) Lafiandra, D. (Italy), W. Ma (Australia), Mann, G. (Australia), Matuz, J. (Hungary), Molgounov, A. (Russia), Nakamura, H. (Japan), Oak, M. D. (India), Ozderen, T. (Turkey), Payne, T. (Mexico, CIMMYT), Pehlivan, A. (Turkey), Pena, R. J. (Mexico, CIMMYT) and Sanal, T. (Turkey).

Introduction to the First Edition

The low-molecular-weight (LMW) subunits have been more difficult to analyze than the HMW-subunits. As a result, there are fewer literature lists of LMW-subunit composition. Nevertheless, it proved possible to accumulate the LMW-subunit composition for many genotypes, starting with the pioneering studies of Gupta (1989), of Gupta and Shepherd (1990) and of Jackson et al (1996). These, and the many more publications, are cited against each entry, with the full reference being given in the "Literature cited" section at the end of this introductory text.

The further problem for the LMW subunits has been difficulties associated with establishing a generally agreed nomenclature and interpreting this for the fractionation profiles obtained by SDS-PAGE. The allele-designation system (*Glu-3*) is detailed in Chapter 6 of AACC International's book "Gliadin and Glutenin: The Unique Balance of Wheat Quality". It is modeled on that for the gliadins and is unchanged from the early studies of Gupta in his PhD thesis (Gupta 1989), which includes a catalog of LMW subunits for some 222 genotypes.

The recommendation by Gupta (1989) for a set of genotypes to be designated as primary standards for specific alleles has been reinforced in a later publication by Cornish and Lukow (1996). The cultivars Chinese Spring and Gabo were allocated the alleles *a* and *b*, respectively, in each of the three wheat genomes (Table 2). These are thus at the top of the list of recommended varieties for designation of *Glu-3* alleles. Table 2 also shows the grain sources as AUS numbers for the samples used by Gupta (1989), namely, the Australian Winter Cereals Collection.

Table 2. Primary standards for allocating allele designations for LMW subunits of glutenin

Locus	Allele	Primary Standard	AUS #
Glu-A3	<i>A</i>	Chinese Spring	119
	<i>B</i>	Gabo	246
	<i>C</i>	Cheyenne	2123
	<i>D</i>	Orca	3131
	<i>E</i>	Insignia	2642
	<i>F</i>	Rescue	3273
Glu-B3	<i>A</i>	Chinese Spring	119
	<i>B</i>	Gabo	246
	<i>C</i>	Insignia	2642
	<i>D</i>	Orca	3131
	<i>E</i>	Cheyenne	2123
	<i>F</i>	Radja	22512
	<i>G</i>	Kharkov	2737
	<i>H</i>	Thatcher	3434
	<i>I</i>	Norin 61	724
Glu-D3	<i>A</i>	Chinese Spring	119
	<i>B</i>	Gabo	246
	<i>C</i>	Insignia	2642
	<i>D</i>	Jufy 1	2684
	<i>E</i>	Orca	3131

LITERATURE CITED

- Bedo Z., Lang L., and Rakszegi, M. 2005 Wheat Database of Agric.Res. Inst. Martonvasar, Hungary
- Branlard G., Dardevet M., Amiour N. and Igrejas G. 2003. Allelic diversity of HMW and LMW glutenin subunits and omegagliadins in French bread wheat (*Triticum aestivum* L.). *Gen. Res. Crop Evol.* 50. 669–679.
- Bushuk, W 2006 Personal communication
- Carrillo J.M. and Nieto-Taladriz, M.T. 2005. The high and low molecular weight glutenin subunit polymorphism of Algerian durum wheat landraces and old cultivars. *Plant Breeding* 124. 338-342
- Cornish, G.B. 2005, 2007. Personal communication
- Gupta, R.B., and Shepherd, K.W. 1994. Two-step one-dimensional SDS-PAGE analysis of LMW subunits of glutenin. I. Variation and genetic control of the subunits in hexaploid wheats. *Theor. Appl. Genet.* 80:65-74.
- He, Z.H., Liu, L., Xia, X.C., Liu, J.J., and Pena, R.J. 2005. Composition of HMW and LMW Glutenin Subunits and Their Effects on Dough Properties, Pan Bread, and Noodle Quality of Chinese Bread Wheats. *Cereal Chem.* 82. 345–350
- Igrejas G., Guedes-Pinto H., Carnide C., and Branlard G. 1999. The high and low molecular weight glutenin subunits and w-gliadin composition of bread and durum wheats commonly grown in Portugal. *Plant Breeding* 118. 297-302

- Jackson, E.A., Morel, M.-H., Sontag-Strohm, T., Branlard, G., Metakovsky, E. V., and Redaelli, R. 1996. Proposal for combining the classification systems of alleles of *Gli-1* and *Glu-3* loci in bread wheat (*Triticum aestivum* L.). *J. Genet. Breed.* 50:321-336.
- Liu, L., Zhonghu He, Z., Yan, J., Zhang, Y., Xia, x., and Pena, R.J. 2005 Allelic variation at the *Glu-1* and *Glu-3* loci, presence of the 1B.1R translocation, and their effects on mixographic properties in Chinese bread wheats. *Euphytica* (2005) 142: 197–204
- Shan X, Clayshulte, S.R.,Haley, S.D., and Byrne, P.F. 2007. Variation for glutenin and waxy alleles in the US hard winter wheat germplasm. *J. Cereal Sci.* 45. 199–208.

VARIETY	COUNTRY	GLUA3	GLUB3	GLUD3	REFERENCE
883	China	a	j	n.d.	Liu et al (2005)
2137	U.S.A.	d	g	a	Shan et al, 2007
2145	U.S.A.	c	g	a	Shan et al, 2007
2174	U.S.A.	c	i	a	Shan et al, 2007
880915	Australia	d/b	h	e?	Gupta et al, 1994
924122	China	a	j	n.d.	He et al (2005)
(MH3*Warimba)MH9	Australia	c	b	b	Cornish, 2005
(MH3*Warimba)MH11	Australia	c	b	b	Cornish, 2005
(Mx*DAG#3)/B19/H9/9	Australia	c	h	c	Gupta et al, 1994
(Yr10War*Mol#)/1/1	Australia	c	g	a	Gupta et al, 1994
Laura	Canada	e/b	h	b	Gupta et al, 1994
	South				
3Elrina	Africa	c/d	b/h	b/a	Gupta et al, 1994
78Z:976	Australia	e	g	c/b	Gupta et al, 1994
8156 (White Grain)	Mexico	c/b	g	b	Cornish, 2005
82Y:1185	Australia	e	b	b	Gupta et al, 1994
82Y:1186	Australia	e	b	b	Gupta et al, 1994
83Z:1076	Australia	b	b	b	Gupta et al, 1994
84W:1137	Australia	c	b	e?	Gupta et al, 1994
85 Zhong 33	China	c	j	n.d.	Liu et al (2005)
9(54)	China	d	d	n.d.	Liu et al (2005)
93 Zhong 6(37)	China	b	j	n.d.	Liu et al (2005)
96C1	China	d	j	n.d.	Liu et al (2005)
98 Zhong 18	China	d	j	n.d.	Liu et al (2005)
992-17	China	d	b	n.d.	Liu et al (2005)
99G46	China	e	j	n.d.	Liu et al (2005)
99G66	China	a	d	n.d.	Liu et al (2005)
99G80	China	a	j	n.d.	Liu et al (2005)
99P077	China	a	b	n.d.	Liu et al (2005)
99P102	China	a	j	n.d.	Liu et al (2005)
Abental	Portugal	d	g	c	Igrejas et al, 1999
Abo	France	a	b	c	Branlard et al, 2003
Aboukir	France	a	g	b	Branlard et al, 2003
Above	U.S.A.	e	g	b	Shan et al, 2007
Absolvent	Canada	c	b	c	Bushuk, 2006
AC Baltic	Canada	c	b	c	Gupta et al, 1994
AC Barrie	Canada	e	h	c	Gupta et al, 1994
AC Cora (BW 152)	Canada	e	h	c	Bushuk, 2006
AC Crystal	Canada	c	d	c	Gupta et al, 1994
AC Domain	Canada	b/e	h	a	Gupta et al, 1994
AC Domain (BW 148)	Canada	e	h	a	Bushuk, 2006
AC Eatonia (BW 642)	Canada	e	h	c	Bushuk, 2006
AC Foremost	Canada	c	i	c?	Gupta et al, 1994
AC Karma (HY 395)	Canada	g	g	c	Bushuk, 2006
AC Majestic	Canada	e	b	c	Gupta et al, 1994
AC Majestic (BW 173)	Canada	e	g	c	Bushuk, 2006
AC Melita (DT 475)	Canada	d/g	i	-	Bushuk, 2006
AC Michael (BW 653)	Canada	e	h	c	Bushuk, 2006
AC Minto	Canada	b/e	h	c?	Gupta et al, 1994
AC Minto (BW 120)	Canada	e	h	c	Bushuk, 2006
AC Morse (DT 484)	Canada	g	i	-	Bushuk, 2006
AC Phil	Canada	c	b	b	Gupta et al, 1994

AC Reed	Canada	c	b	b	Gupta et al, 1994
AC Reed (SWS -87)	Canada	c	b	b	Bushuk, 2006
AC Taber	Canada	c	i	c	Bushuk, 2006
AC Vista (HY 413)	Canada	g	i	c	Bushuk, 2006
Acadia	Canada	e	b	a	Gupta et al, 1994
Admiral	U.K.	d	j	c	Gupta et al, 1994
Afghanistan 75		c	e	a	Gupta et al, 1994
Agent	U.S.A.	d?	i	a	Gupta et al, 1994
Agent	U.S.A.	d?	i	a	Gupta et al, 1994
Agini	Algeria	b	b	-	Carillo et al, 2005;
Agini (Cltr-3838)	Algeria	h	a	-	Carillo et al, 2005;
Agini (Cltr-3844)	Algeria	h	a	-	Carillo et al, 2005;
Agini (Cltr-3845)	Algeria	h	a	-	Carillo et al, 2005;
Agseco7853	China	d	f	n.d.	He et al (2005)
Aiglon	France	ef	g	c	Branlard et al, 2003
AlZu	Austria	c	d	a	Cornish, 2005
Ajana	Australia	b	h	b	Gupta et al, 1994
Akron	U.S.A.	d	b	d	Shan et al, 2007
Albatros	Belgium	d	g	c	Gupta et al, 1994
Albatros	France	d	f	c	Branlard et al, 2003
Algerien	Algeria	a	a	-	Carillo et al, 2005;
Algerien 2	Algeria	a	a	-	Carillo et al, 2005;
Alidos	Germany	d	g	c	Gupta et al, 1994
Alliance	U.S.A.	a	i	e	Shan et al, 2007
Almansor	Portugal	e	g	a	Igrejas et al, 1999
Almargarit	U.S.S.R.	b	d	a	Cornish, 2005
Almargarit	U.S.S.R.	b	d	a	Gupta et al, 1994
Alpe	France	a	b	c	Branlard et al, 2003
Alpha HW	Canada	e	h	b	Bushuk, 2006
Alpha (HY 612)	Canada	e	h	b	Bushuk, 2006
Alpha 16	Canada	e	h	b	Bushuk, 2006
Alto	France	a	g	c	Branlard et al, 2003
Alto	Portugal	a	g	c	Igrejas et al, 1999
Alva	Portugal	a	d	a	Igrejas et al, 1999
Alvina	France	a	c	c	Branlard et al, 2003
Amazonas	Portugal	d	j	c	Igrejas et al, 1999
Amery	Australia	b	b	b	Gupta et al, 1994
Amethyst(Aust)	Australia	f	g	b?	Gupta et al, 1994
Ami	France	a	c	c	Branlard et al, 2003
Andante	U.K.	e	g	c	Gupta et al, 1994
Andros	Germany	d	g	c	Gupta et al, 1994
Angas	Australia	c	g/b	c	Gupta et al, 1994
Ankor	U.S.A.	d	b	a	Shan et al, 2007
Ankra	Canada	e	g	c	Gupta et al, 1994
Anlace	Australia	c	g	c	Gupta et al, 1994
Annong 91168	China	e	d	n.d.	Liu et al (2005)
Annong 94022	China	a	b	n.d.	Liu et al (2005)
Annong 98005	China	a	d	n.d.	Liu et al (2005)
Annuello	Australia	b	b	b	Gupta et al, 1994
Antelope	U.S.A.	c	b	b	Shan et al, 2007
Anza	Portugal	a	b	a	Igrejas et al, 1999
	New				
Aotea	Zealand	e	b	b	Cornish, 2005
	New				
Aotea	Zealand	e	b	b	Gupta et al, 1994

AP03-20	U.S.A.	c	c	c	Shan et al, 2007
Apex	Canada	e(f?)	b	a	Gupta et al, 1994
Apexal	France	a	g	c	Branlard et al, 2003
Apollo	France	d	j	c	Branlard et al, 2003
Apollo	U.K.	d	j	c	Gupta et al, 1994
Apollo(Hybrid)	Australia	c	b/g	b	Gupta et al, 1994
Apostle	Hungary	f	g	a	Bedo et al, 2005
Apostle	U.K.	e	g	e?	Gupta et al, 1994
Apostole	France	ef	g	b	Branlard et al, 2003
AR*JMMC/18/5	Australia	c	b	c	Gupta et al, 1994
Aranda	France	e	g	b	Cornish, 2005
	New				
Arawa	Zealand	d	h	b	Cornish, 2005
Arbon	France	a	b	c	Branlard et al, 2003
Arcane	France	a	g	b	Branlard et al, 2003
Arcane	France	c	c	a	Cornish, 2005
Archamp	Portugal	d	g	c	Igrejas et al, 1999
Arche	France	d	g	c	Branlard et al, 2003
Arcola	Canada	g	i	-	Bushuk, 2006
Arcole	France	d	g	c	Branlard et al, 2003
Ardec	Portugal	e	d	a	Igrejas et al, 1999
Ares	Germany	d	f	c	Gupta et al, 1994
Arfort	France	a	b	a	Branlard et al, 2003
ArgentineIX	Argentina	b?	i?	c	Gupta et al, 1994
Argueil	Portugal	b	b	a	Igrejas et al, 1999
Ariana-66	Tunisia	b	b	b	Cornish, 2005
Aristide	France	a	c	c	Branlard et al, 2003
Arlin	U.S.A.	c	e	a	Shan et al, 2007
Armada	France	ef	f	c	Branlard et al, 2003
Arminda	France	a	g	c	Branlard et al, 2003
Arminda	Netherlands	c	g	c	Gupta et al, 1994
Armur	France	a	g	c	Branlard et al, 2003
Arnhem	Australia	b	d	b	Gupta et al, 1994
Aroona	Australia	c	b	b	Cornish, 2005
Arpain	Portugal	b	b	a	Igrejas et al, 1999
Arpe	Portugal	a	b	c	Igrejas et al, 1999
Arrino	Australia	c	b	b/c	Gupta et al, 1994
Arrowsmith	U.S.A.	c	g	b	Shan et al, 2007
Arsenal	France	a	g	a	Branlard et al, 2003
Arum	France	ef	f	c	Branlard et al, 2003
Arval	France	a	f	c	Branlard et al, 2003
Arzu	Austria	c	d	a	Gupta et al, 1994
Astron	Germany	d	g	c	Gupta et al, 1994
Atir	Portugal	b	i	a	Igrejas et al, 1999
Aubaine	France	ef	g	c	Branlard et al, 2003
Aubaine	France	e/f	g	c	Gupta et al, 1994
Augusta	Canada	c	g	a	Bushuk, 2006
Augusta	Hungary	c	g	a	Bedo et al, 2005
Austerlitz	France	ef	g	a	Branlard et al, 2003
Avalanche	U.S.A.	g	g	a	Shan et al, 2007
Avalon	France	a	b	c	Branlard et al, 2003
Avalon	U.K.	a?	b	c	Gupta et al, 1994
Avocet	Australia	e	b	c	Gupta et al, 1994
Axel	France	d	g	c	Branlard et al, 2003

Axminister	Canada	e	b	a	Bushuk, 2006
Azerbaijanskaja-l	U.S.S.R.	a	a	a	Cornish, 2005
Azulon	Portugal	a	g	c	Igrejas et al, 1999
Babbler	Australia	b	b	c	Gupta et al, 1994
Bacvanka	Yugoslavia	c	b	c	Cornish, 2005
Bacvanka	Yugoslavia	c	b	c	Gupta et al, 1994
Bainong 64	China	a	d	n.d.	He et al (2005)
Baiyu 149	China	d	b	n.d.	Liu et al (2005)
Baiyu 149	China	d	b	n.d.	He et al (2005)
Bajjo	Mexico	e	h	a	Cornish, 2005
Baker's White	U.S.A.	e	a	c	Shan et al, 2007
Baldmin	Australia	c	b	b	Gupta et al, 1994
Banks	Australia	b	b	c	Gupta et al, 1994
Bankuti-1205	Hungary	a	i	c	Bedo et al, 2005
Barkai	Yugoslavia	e	b	b	Cornish, 2005
Baroota Wonder	Australia	e	b	a	Gupta et al, 1994
Baroudeur	France	d	b	c	Branlard et al, 2003
Barunga	Australia	c	b	c	Gupta et al, 1994
Bass	Australia	c	b	b	Gupta et al, 1994
Bastian	France	a	i	a	Branlard et al, 2003
Batavia	Australia	c	b	c	Gupta et al, 1994
	New				
Batten	Zealand	d	j	b	Gupta et al, 1994
Baviacora	Australia	c	h	b	Cornish, 2007;
Baxter	Australia	b	h	a	Gupta et al, 1994
Bayonet	Australia	c/e	b	b	Cornish, 2005
BB-Inia	Mexico	e	h	c	Cornish, 2005
BD159	Australia	e/b	b	b	Gupta et al, 1994
BD231	Australia	b	i?	b?	Gupta et al, 1994
Beauchamp	France	d	g	c	Branlard et al, 2003
Beauchamp	France	d	g	c	Gupta et al, 1994
Beaufort	France	f	j	c	Gupta et al, 1994
Beaver	France	ef	j	c	Branlard et al, 2003
Beaver	U.K.	e	j	c	Gupta et al, 1994
Becejka	Yugoslavia	e	e	c	Cornish, 2005
Beijing 837	China	d	j	n.d.	Liu et al (2005)
Beijing 841	China	a	j	n.d.	He et al (2005)
Belaviso	France	d	j	c	Branlard et al, 2003
	New				
Belfield	Zealand	c	b	c	Gupta et al, 1994
Beliouni (Cltr-3839)	Algeria	c	a	-	Carillo et al, 2005;
Beliouni (Cltr-3842)	Algeria	a	a	-	Carillo et al, 2005;
Beliouni (Cltr-3848)	Algeria	a	a	-	Carillo et al, 2005;
Beliouni (Cltr-3852)	Algeria	a	a	-	Carillo et al, 2005;
Beliouni (Cltr-4025)	Algeria	a	a	-	Carillo et al, 2005;
Belvedere	Canada	c	b	c	Bushuk, 2006
Belvedere	France	c	b	c	Gupta et al, 1994
Bencubbin	Australia	e	g	b	Cornish, 2005
Benito	Canada	e	h	c	Gupta et al, 1994
Benito (BW 20)	Canada	e	h	c	Bushuk, 2006
Berlioz	France	a	g	c	Branlard et al, 2003
Betres	Portugal	b	i	a	Igrejas et al, 1999
Betty	U.S.A.	c	f	c	Shan et al, 2007
Beulah	Australia	c	b	b	Gupta et al, 1994
Bidi 17	Algeria	a	a	-	Carillo et al, 2005;

Bidi 17 (PI-263415)	Algeria	a	a	-	Carillo et al, 2005;
Bidi 17 (PI-352409)	Algeria	a/a	a/a	-	Carillo et al, 2005;
Biggar	Canada	c	i	c	Gupta et al, 1994
Biggar (HY 368)	Canada	c	i	c	Bushuk, 2006
Biggar (HY 368)	Canada	c	i	b	Bushuk, 2006
Bindawarra	Australia	b	b	b	Cornish, 2005
Bishop	Canada	e	g	b	Gupta et al, 1994
Biskri (Cltr-7084)	Algeria	b/a	b/a	-	Carillo et al, 2005;
Bison	France	a	b	c	Branlard et al, 2003
BKT-9086-95	Hungary	a	i	c	Bedo et al, 2005
BKT-9087-95	Hungary	f	i	c	Bedo et al, 2005
BKT-9089-95	Hungary	a	i	c	Bedo et al, 2005
BKT-9090-95	Hungary	f	i	c	Bedo et al, 2005
BKT-9093-95	Hungary	f	i	c	Bedo et al, 2005
BKT-9097-95	Hungary	f	i	c	Bedo et al, 2005
BKT-9098-95	Hungary	f	i	c	Bedo et al, 2005
BKT-9103-95	Hungary	f	i	c	Bedo et al, 2005
BKT-9105-95	Hungary	f	i	c	Bedo et al, 2005
BKT-9107-95	Hungary	f	i	c	Bedo et al, 2005
BKT-9108-95	Hungary	f	i	c	Bedo et al, 2005
BKT-9109-95	Hungary	f	i	c	Bedo et al, 2005
BKT-9110-95	Hungary	a	i	c	Bedo et al, 2005
BKT-9111-95	Hungary	f	i	c	Bedo et al, 2005
BKT-9112-95	Hungary	f	i	c	Bedo et al, 2005
BKT-9113-95	Hungary	a	i	c	Bedo et al, 2005
BKT-9115-95	Hungary	f	i	c	Bedo et al, 2005
BKT-9120-95	Hungary	f	i	c	Bedo et al, 2005
BKT-9121-95	Hungary	f	i	c	Bedo et al, 2005
BKT-9122-95	Hungary	f	i	c	Bedo et al, 2005
BKT-9123-95	Hungary	a	i	c	Bedo et al, 2005
BKT-9125-95	Hungary	f	i	c	Bedo et al, 2005
BKT-9128-95	Hungary	d	g	a	Bedo et al, 2005
BKT-9129-95	Hungary	f	i	c	Bedo et al, 2005
BKT-9131-95	Hungary	a	b	c	Bedo et al, 2005
BKT-9132-95	Hungary	f	i	c	Bedo et al, 2005
BKT-9133-95	Hungary	a	i	c	Bedo et al, 2005
BKT-9134-95	Hungary	f	i	c	Bedo et al, 2005
BKT-9135-95	Hungary	a	b	c	Bedo et al, 2005
BKT-9139-95	Hungary	f	i	c	Bedo et al, 2005
BKT-9143-95	Hungary	a	i	c	Bedo et al, 2005
BKT-9149-95	Hungary	f	i	c	Bedo et al, 2005
BKT-9150-95	Hungary	f	i	c	Bedo et al, 2005
BKT-9151-95	Hungary	f	i	c	Bedo et al, 2005
BKT-9154-95	Hungary	d	g	a	Bedo et al, 2005
BKT-9156-95	Hungary	a	i	c	Bedo et al, 2005
BKT-9157-95	Hungary	f	i	c	Bedo et al, 2005
BKT-9158-95	Hungary	f	i	c	Bedo et al, 2005
BKT-9163-95	Hungary	f	i	c	Bedo et al, 2005
BKT-9166-95	Hungary	f	i	c	Bedo et al, 2005
BKT-9168-95	Hungary	f	i	c	Bedo et al, 2005
BKT-9169-95	Hungary	f	i	c	Bedo et al, 2005
BKT-9170-95	Hungary	f	i	c	Bedo et al, 2005
BKT-9196-95	Hungary	a	i	a	Bedo et al, 2005
BKT-9197-95	Hungary	a	i	c	Bedo et al, 2005

BKT-9198-95	Hungary	f	i	c	Bedo et al, 2005
BKT-9199-95	Hungary	a	i	c	Bedo et al, 2005
BKT-9205-95	Hungary	a	i	c	Bedo et al, 2005
BKT-9206-95	Hungary	a	i	c	Bedo et al, 2005
BKT-9207-95	Hungary	a	i	c	Bedo et al, 2005
BKT-9230-95	Hungary	g	d	c	Bedo et al, 2005
BKT-9240-95	Hungary	a	i	c	Bedo et al, 2005
BKT-9248-95	Hungary	f	i	c	Bedo et al, 2005
BKT-9249-95	Hungary	a	i	c	Bedo et al, 2005
BKT-9264-95	Hungary	a	i	c	Bedo et al, 2005
BKT-9282-95	Hungary	a	i	c	Bedo et al, 2005
BKT-9287-95	Hungary	a	i	a	Bedo et al, 2005
BKT-9299-95	Hungary	a	i	a	Bedo et al, 2005
Blade	Australia	b	b	b	Gupta et al, 1994
Blanco	Australia	c	g	a	Cornish, 2007;
Blason	France	d	g	c	Branlard et al, 2003
Ble de Seville (Cltr-3847)	Algeria	a	a	-	Carillo et al, 2005;
Bluebird	Australia	d	h	a	Cornish, 2007;
Bluebird	Mexico	d	h	a	Gupta et al, 1994
Bluesky	Canada	b	e	c	Gupta et al, 1994
Bluesky (PT325)	Canada	g	i	c	Bushuk, 2006
Bob White's	Mexico	c	j	b	Gupta et al, 1994
Bobs	Australia	c	b	b/c	Gupta et al, 1994
Bodallin	Australia	e	b	b	Gupta et al, 1994
Bokal	Australia	e	b	b	Cornish, 2005
Bond CL	U.S.A.	d	b	b	Shan et al, 2007
Bonnierock	Australia	c	b	c	Cornish, 2007;
Bonpain	Portugal	e	b	a	Igrejas et al, 1999
Bordan	Australia	b	b	c	Gupta et al, 1994
Borden	Canada	c	b	c	Gupta et al, 1994
Boreal	France	d	g	a	Branlard et al, 2003
Borenos	Germany	c	i	b	Gupta et al, 1994
Boscal		e	b	b	Gupta et al, 1994
Bounty	U.K.	d	g	a	Gupta et al, 1994
Bowerbird	Australia	b	h	b	Gupta et al, 1994
Bowie	Australia	c/h	b	c	Gupta et al, 1994
Braewood	Australia	c	b	b	Gupta et al, 1994
Brennan	Australia	b	g	c	Gupta et al, 1994
Brigadier	U.K.	d	j	c	Gupta et al, 1994
Brimstone	France	a	g	d	Branlard et al, 2003
Brimstone	U.K.	c	f	c	Cornish, 2005
Brochis'S'	Mexico	c	d	b	Gupta et al, 1994
Brock	U.K.	e	g	c	Cornish, 2005
Brock	U.K.	e	g	c	Gupta et al, 1994
Brookton	Australia	c	h	a	Gupta et al, 1994
BT-2288	Tunisia	f/e	i	a	Cornish, 2005
BT-2296	Tunisia	d	i	a	Cornish, 2005
BTSchomburgk	Australia	c	b	c	Gupta et al, 1994
Buckley	Australia	c	b	c	Gupta et al, 1994
Bufalo	Portugal	a	j	c	Igrejas et al, 1999
Bullet	U.S.A.	c	g	d	Shan et al, 2007
Bungulla	Australia	e	g	b	Cornish, 2005
Bunyip	Australia	e	b	b	Gupta et al, 1994
Burchett	U.S.A.	e	a	c	Shan et al, 2007

Burgas-2		d	h	a	Gupta et al, 1994
Bussard	Germany	c	g	c	Gupta et al, 1994
But	France	d	g	c	Branlard et al, 2003
BW 120 (AC Minto)	Canada	e	h	c	Bushuk, 2006
BW 148 (AC Domain)	Canada	e	h	a	Bushuk, 2006
BW 152 (AC Cora)	Canada	e	h	c	Bushuk, 2006
BW 155 (ND 640)	Canada	e	g	c	Bushuk, 2006
BW 173 (AC Majestic)	Canada	e	g/h	c	Bushuk, 2006
BW 198 (ND 671)	Canada	e	h	a/b	Bushuk, 2006
C	France	a	a	a	Branlard et al, 2003
C-271	India	c	b	b	Cornish, 2005
C-273	India	e	i	b	Cornish, 2005
C-306	India	c	i	a	Cornish, 2005
C-518	India	c	h	d	Cornish, 2005
C-591	India	c	h	a	Cornish, 2005
C8MM*C8HMM)/5/10	Australia	c	b	b	Gupta et al, 1994
CA 8686	China	a	j	n.d.	Liu et al (2005)
CA 9532	China	a	j	n.d.	Liu et al (2005)
CA 9550	China	c	h	n.d.	Liu et al (2005)
CA 9553	China	c	f	n.d.	Liu et al (2005)
CA 9632	China	c	j	n.d.	Liu et al (2005)
CA 9641	China	d	h	n.d.	Liu et al (2005)
CA 9648	China	c	j	n.d.	Liu et al (2005)
CA 9719	China	c	h	n.d.	Liu et al (2005)
CA 9722	China	c	a	n.d.	Liu et al (2005)
Cadenza	U.K.	c	i	c	Gupta et al, 1994
Cadet	Canada	e	b	a	Bushuk, 2006
Cadoux	Australia	b	b	a	Gupta et al, 1994
Caia	Portugal	a	d	a	Igrejas et al, 1999
Cajeme 71	Mexico	d	h	a	Gupta et al, 1994
Calidad	Argentina	d	i	e	Gupta et al, 1994
Calidad	Mexico	e	i	e	Cornish, 2005
Calingiri	Australia	d	d	a	Gupta et al, 1994
Caliph	Australia	f?	d	c	Gupta et al, 1994
Camm	Australia	b	h	c	Gupta et al, 1994
Campremy	France	d	g	c	Branlard et al, 2003
Canberra	Australia	c	d	c	Gupta et al, 1994
Canghe 030	China	a	j	n.d.	Liu et al (2005)
Canna	Australia	c	f	b	Gupta et al, 1994
Canthatch	Canada	c	b	b	Gupta et al, 1994
Canthatch-K	Canada	e	h	c	Bushuk, 2006
Canuck	Canada	e	h	c	Gupta et al, 1994
Canus	Canada	e	b	a	Bushuk, 2006
Capitole	France	d	g	c	Branlard et al, 2003
Cappelle-Desprez	France	d	g	c	Cornish, 2005
Carat	France	ef	c	c	Branlard et al, 2003
Carazinho	Brazil	c	g	e	Cornish, 2005
Cargidoc	France	a	g	c	Branlard et al, 2003
Cargimarec	France	a	g	a	Branlard et al, 2003
Cargimarec	France	c	g	a	Gupta et al, 1994
Cargo	France	a	c	c	Branlard et al, 2003
Carlos	France	a	g	c	Branlard et al, 2003
Carnamah	Australia	c	d	c	Gupta et al, 1994
Carthage	Tunisia	c	e	b	Gupta et al, 1994

Casavant	Canada	c	i	c?	Gupta et al, 1994
Cascades	Australia	c	b	a	Gupta et al, 1994
Castan	France	a	g	c	Branlard et al, 2003
Castan	Portugal	a	g	c	Igrejas et al, 1999
Caton	France	a	g	c	Branlard et al, 2003
CD87	Australia	b	b	a	Gupta et al, 1994
CDC Makwa	Canada	b/e	h	c	Gupta et al, 1994
CDC Makwa (BW 606)	Canada	b/e	h	c	Bushuk, 2006
CDC Merlin (BW 636)	Canada	b	b	b	Bushuk, 2006
CDC Teal	Canada	b/e	h	c	Gupta et al, 1994
CDC Teal (BW 616)	Canada	b/e	h	c	Bushuk, 2006
Cebeco 97	Netherlands	d	j	c	Gupta et al, 1994
Cedar	Australia	c	b	b	Gupta et al, 1994
Centauro	Portugal	a	g	a	Igrejas et al, 1999
Centrifon	Chile	e/b	b	b	Gupta et al, 1994
Ceres	Canada	a/c	b	c	Bushuk, 2006
CH8W*MMMMC/8/8	Australia	c	b	a	Gupta et al, 1994
Champion		e	g	c	Gupta et al, 1994
Champlein	France	a	g	c	Branlard et al, 2003
Champlein	France	c	g	c	Gupta et al, 1994
Champtal	France	a	f	c	Branlard et al, 2003
Chanab 70	Pakistan	d	i	b	Gupta et al, 1994
Chanab-70	Pakistan	d	g	b	Cornish, 2005
Chara	Australia	b	b	b	Gupta et al, 1994
Chester	Canada	b/e	b	c	Gupta et al, 1994
Cheyenne	U.S.A.	c	e	f?	Cornish, 2005
Cheyenne	U.S.A.	c	e	f?	Gupta et al, 1994
Cheyenne	U.S.A.	c	e	f?	Gupta et al, 1994
Chhoti Lerma	India	d	h	a	Cornish, 2005
Chhoti Lerma	India	d	h	a	Gupta et al, 1994
China 2	China	c	c	c	Gupta et al, 1994
Chinese Spring	China	a	a	a	Cornish, 2005
Chinook	Canada	e/b	i/g	c	Bushuk, 2006
Choisel	France	a	g	a	Branlard et al, 2003
Chopin	France	a	d	c	Branlard et al, 2003
Chough	Australia	b	b	b	Gupta et al, 1994
Chris	U.S.A.	d	h	c	Cornish, 2005
Chris	U.S.A.	d	h	c	Gupta et al, 1994
Chris	U.S.A.	d	h	c	Gupta et al, 1994
Chuan 89-107	China	c	b	n.d.	Liu et al (2005)
Chuan 89-114	China	c	b	n.d.	Liu et al (2005)
Chuan 96003	China	c	f	n.d.	Liu et al (2005)
Chuanmai 24	China	a	b	n.d.	He et al (2005)
Chuanyu 12	China	d	d	n.d.	Liu et al (2005)
Ciano (S)	Mexico	c	g	c	Cornish, 2005
Ciano 67	Mexico	d	h	e	Gupta et al, 1994
Ciguena'S'	Mexico	e	b	c/b	Gupta et al, 1994
Cique	Turkey	b	i	a	Gupta et al, 1994
Cisco	U.S.A.	c	b	c	Shan et al, 2007
CL2	Australia	b	?	c/b	Gupta et al, 1994
CL3	Australia	b	?	c	Gupta et al, 1994
Clark	U.S.A.	c	g	a	Gupta et al, 1994
Clark	U.S.A.	c	g	a	Gupta et al, 1994
Claymore	Australia	f	b	b	Gupta et al, 1994

Clearfield JNZ	Australia	b	b	b	Gupta et al, 1994
Clearfield STL	Australia	e	g	b	Gupta et al, 1994
Clement	France	ef	j	c	Branlard et al, 2003
Coa	Portugal	d	d	a	Igrejas et al, 1999
Cocamba	Australia	b	b	b	Gupta et al, 1994
Columbus	Canada	e	g	c	Gupta et al, 1994
Columbus (BW 55)	Canada	e	g	c	Bushuk, 2006
Comeback	Australia	c	b	b	Gupta et al, 1994
Comet	Australia New	b & c	b	b & c	Gupta et al, 1994
Commando	Zealand	d	j	b	Gupta et al, 1994
Compton	U.S.A.	e	g	a	Cornish, 2005
Compton	U.S.A.	e	g	a	Gupta et al, 1994
Compton	U.S.A.	e	g	a	Gupta et al, 1994
Condor	Australia	b/e	b	b	Cornish, 2005
Condor	Australia	b/c	b	b	Gupta et al, 1994
Contra	Germany	e	f	c	Gupta et al, 1994
Conway	Canada	e	h	c	Gupta et al, 1994
Conway (BW 569)	Canada	b/e	h	c	Bushuk, 2006
Cook	Australia	b	b	b	Cornish, 2005
Cook	Australia	b	b	b	Gupta et al, 1994
Copain	France	d	b	c	Branlard et al, 2003
Copain	France	d	b	c	Gupta et al, 1994
Corella	Australia	d	b	b	Gupta et al, 1994
Corin	France	d	g	c	Branlard et al, 2003
Coronado	U.S.A.	d	i	e	Shan et al, 2007
Coronation	Canada	e	h	a	Gupta et al, 1994
Corot	France	d	g	c	Branlard et al, 2003
Corrigin	Australia	f	g	a	Gupta et al, 1994
Cortex	Portugal	a	d	a	Igrejas et al, 1999
Cosmos	France	a	f	c	Branlard et al, 2003
Cossack	U.S.A.	c	b	c	Shan et al, 2007
Costantino	Italy	c	i	a	Gupta et al, 1994
Cougar	U.S.A.	a	c	e	Shan et al, 2007
Courtot	France	a	c	c	Branlard et al, 2003
Courtot	France	c	b	c	Gupta et al, 1994
Cranbrook	Australia	b	d	a	Gupta et al, 1994
Creneau	France	a	c	c	Branlard et al, 2003
Crespo	Colombia	b	c	a	Cornish, 2005
Crespo	Colombia	b	c	a	Gupta et al, 1994
Crim	U.S.A.	e	b	a	Cornish, 2005
Crim	U.S.A.	e	b	a	Gupta et al, 1994
Crim	U.S.A.	e	b	a	Gupta et al, 1994
Crimson	U.S.A.	c	f	c	Shan et al, 2007
Crossbow	U.K.	c	g	b	Gupta et al, 1994
CSP 44	Australia	c	b	b	Gupta et al, 1994
CSP-44	Australia	b	b	b	Cornish, 2005
Culver	U.S.A.	e	g	e	Shan et al, 2007
Cunderdin	Australia	c	d	a	Gupta et al, 1994
Cunningham	Australia	c	b	b	Gupta et al, 1994
Currawa	Australia	e	h	c	Cornish, 2005
Currawa	Australia	e	b	b?	Gupta et al, 1994
Currawong	Australia	c	b	b	Gupta et al, 1994
Custer	U.S.A.	d	d	d	Shan et al, 2007

Cutler	Canada	c	i	a/b	Bushuk, 2006
Cutter	U.S.A.	c	f	d	Shan et al, 2007
Cypress	Canada	e	i	c	Bushuk, 2006
D Artagnan	Portugal	a	g	a	Igrejas et al, 1999
Dagger	Australia	c	h	c	Gupta et al, 1994
Damier	France	ef	j	c	Branlard et al, 2003
Dan	Australia	f?	b	c	Gupta et al, 1994
Danby	U.S.A.	c	g	c	Shan et al, 2007
Daphne	Australia	b	c	a	Gupta et al, 1994
Darius	France	d	g	b	Branlard et al, 2003
Darkan	Australia	b	b	a	Gupta et al, 1994
Darlcán	Australia New Zealand	b	b	a	Cornish, 2005
Dartagnan	Zealand	c?	g	a	Gupta et al, 1994
Darter	Australia	d	b	b	Gupta et al, 1994
Datatine	Australia	f?	b	a	Gupta et al, 1994
David	France	a	g	c	Branlard et al, 2003
DD108	Australia	e	i	a	Gupta et al, 1994
DD118	Australia	b/c	i	b	Gupta et al, 1994
DD7	Australia	c	b	b	Gupta et al, 1994
Declic	Australia	d	b	a	Cornish, 2007;
Declic	France	d	b	a	Gupta et al, 1994
Delfi	France	a	c	c	Branlard et al, 2003
Deliver	U.S.A.	c	f	c	Shan et al, 2007
Demai 3	China	a	d	n.d.	Liu et al (2005)
Demai 4	China	d	j	n.d.	Liu et al (2005)
Democrat	France	a	h	a	Branlard et al, 2003
Dennis	Australia	b	b	b	Gupta et al, 1994
Diam	France	d	g	c	Branlard et al, 2003
Diamondbird	Australia	b	h	b	Gupta et al, 1994
Diaz	Australia	c	b	b	Gupta et al, 1994
Dirk	Australia	e	b	b/c	Cornish, 2005
Divio	France	d	g	c	Branlard et al, 2003
Dollarbird	Australia	b	h	b	Gupta et al, 1994
Dongfeng 1	China	d	j	n.d.	He et al (2005)
Dongfeng 611	China	a	j	n.d.	Liu et al (2005)
Dongfeng 9801	China	d	j	n.d.	Liu et al (2005)
Dourado	Portugal	a	g	a	Igrejas et al, 1999
Drysdale	Australia	b	b	b	Gupta et al, 1994
Du Toit	Australia	e	b	b	Gupta et al, 1994
Ducat	France	d	g	c	Branlard et al, 2003
Dugoklasa	Yugoslavia	e	g	b	Cornish, 2005
Dumas	U.S.A.	e	a	c	Shan et al, 2007
Dunav	Yugoslavia	e	e	a	Cornish, 2005
Dundas	Canada	e/b	h	c	Gupta et al, 1994
Dundee	Australia	b/d	c	b/c	Gupta et al, 1994
Durati	Australia	e	k	-	Gupta et al, 1994
E	France	b	a	d	Branlard et al, 2003
E 66378	China	a	b	n.d.	Liu et al (2005)
E 81027	China	c	j	n.d.	Liu et al (2005)
E 86642	China	a	d	n.d.	Liu et al (2005)
E 91727	China	c	f	n.d.	Liu et al (2005)
Eagle	Australia	e	b	b	Gupta et al, 1994
Early Baart	Australia	e	g	?	Gupta et al, 1994

Early Red Fife	Canada	e	g	c	Bushuk, 2006
Early Triumph	Canada	e?	b	b	Gupta et al, 1994
Echo	Portugal	d	g	c	Igrejas et al, 1999
Ecrin	France	ef	f	b	Branlard et al, 2003
EEn 1	China	a	j	n.d.	He et al (2005)
EGA Bonnie Rock	Australia	c	b	c	Gupta et al, 1994
EGA Gregory	Australia	c	b	c	Cornish, 2005
EGA Hume	Australia	c	b	c	Gupta et al, 1994
EGA Wedgetail	Australia	b	h	b	Cornish, 2005
Egret	Australia	c	b	b	Cornish, 2005
EL240	Australia	b	b	b	Gupta et al, 1994
Emai 11	China	a	f	n.d.	He et al (2005)
Emblem	Australia	e	b	a	Gupta et al, 1994
Emma-108-96	Hungary	f	f	a	Bedo et al, 2005
Emma-114-96	Hungary	a	b	c	Bedo et al, 2005
Emma-115-96	Hungary	a	b	c	Bedo et al, 2005
Emma-116-96	Hungary	a	b	c	Bedo et al, 2005
Emma-117-96	Hungary	a	b	c	Bedo et al, 2005
Emma-119-96	Hungary	a	b	a	Bedo et al, 2005
Emma-120-96	Hungary	a	c	a	Bedo et al, 2005
Emma-121-96	Hungary	a	b	a	Bedo et al, 2005
Emma-122-96	Hungary	a	c	a	Bedo et al, 2005
Emma-123-96	Hungary	a	b	a	Bedo et al, 2005
Emma-124-96	Hungary	a	b	a	Bedo et al, 2005
Emma-126-96	Hungary	a	c	a	Bedo et al, 2005
Emma-132-96	Hungary	a	c	c	Bedo et al, 2005
Emma-135-96	Hungary	f	f	c	Bedo et al, 2005
Emma-146-96	Hungary	a	b	a	Bedo et al, 2005
Emma-147-96	Hungary	a	b	a	Bedo et al, 2005
Emma-150-96	Hungary	a	b	a	Bedo et al, 2005
Emma-151-96	Hungary	a	b	a	Bedo et al, 2005
Emma-157-96	Hungary	a	b	a	Bedo et al, 2005
Emma-158-96	Hungary	a	b	a	Bedo et al, 2005
Emma-160-96	Hungary	a	b	a	Bedo et al, 2005
Emma-164-96	Hungary	a	b	a	Bedo et al, 2005
Emma-165-96	Hungary	a	b	a	Bedo et al, 2005
Emma-168-96	Hungary	f	i	a	Bedo et al, 2005
Emma-169-96	Hungary	d	j	c	Bedo et al, 2005
Emma-170-96	Hungary	f	c	a	Bedo et al, 2005
Emma-171-96	Hungary	a	i	a	Bedo et al, 2005
Emma-173-96	Hungary	a	b	a	Bedo et al, 2005
Emma-183-96	Hungary	f	c	a	Bedo et al, 2005
Emma-186-96	Hungary	a	b	c	Bedo et al, 2005
Emma-187-96	Hungary	a	b	c	Bedo et al, 2005
Emma-188-96	Hungary	f	c	a	Bedo et al, 2005
Emma-200-96	Hungary	a	b	c	Bedo et al, 2005
Emma-202-96	Hungary	a	b	a	Bedo et al, 2005
Emma-204-96	Hungary	a	b	c	Bedo et al, 2005
Emma-206-96	Hungary	a	b	c	Bedo et al, 2005
Emma-208-96	Hungary	a	b	a	Bedo et al, 2005
Emu'S'	Mexico	d	b	a	Gupta et al, 1994
	New				
Endeavour	Zealand	d	b	a	Gupta et al, 1994
Endurance	U.S.A.	c	i	a	Shan et al, 2007

Enhancer	U.S.A.	d	b	e	Shan et al, 2007
Epiroux	France	d	b	c	Branlard et al, 2003
Era	U.S.A.	c	b	c	Cornish, 2005
Era	U.S.A.	c	b	c	Gupta et al, 1994
Era	U.S.A.	c	b	c	Gupta et al, 1994
Eradu	Australia	c	b	b	Gupta et al, 1994
Ernaceum 36	U.S.S.R.	c	f	a	Gupta et al, 1994
Estica	France	a	g	c	Branlard et al, 2003
Estica	Netherlands	a	f	c	Gupta et al, 1994
Etoile de Choisy	France	d	i	c	Gupta et al, 1994
Eufrates	Portugal	a	b	a	Igrejas et al, 1999
Eureka	France	a	c	c	Branlard et al, 2003
Excalibur	Australia	c/b	b	a	Gupta et al, 1994
Expedition	U.S.A.	e	g	e	Shan et al, 2007
Falcon	Australia	e	b	b	Cornish, 2005
Fan	Australia	e	b	c	Gupta et al, 1994
Fane	Australia	e	b	c	Gupta et al, 1994
Faust	France	d	i	c	Branlard et al, 2003
Favori	France	d	g	c	Branlard et al, 2003
Federation	Australia	e	c	c	Cornish, 2005
Federation	Canada	b	c	a	Bushuk, 2006
Felix	Australia	d?	b	c	Gupta et al, 1994
Fengmai 24	China	a	b'	n.d.	Liu et al (2005)
Fengmai 27	China	a	b'	n.d.	Liu et al (2005)
Fengyou 6	China	c	j	n.d.	Liu et al (2005)
Fengyou 7	China	a	d	n.d.	Liu et al (2005)
Festiguay	Australia	e	b	b	Cornish, 2005
Festin	France	ef	b	c	Branlard et al, 2003
Festival	Australia	c	b	b	Gupta et al, 1994
Festival	France	d/e/c	c/b	c/b	Cornish, 2005
Feuvert	France	a	f	c	Branlard et al, 2003
Fidel	France	f	g	b	Branlard et al, 2003
Fielder	Canada	e	g	b	Gupta et al, 1994
Fife	Australia	c	b	?	Gupta et al, 1994
Fillmore	U.S.A.	c	b	a	Cornish, 2005
Fillmore	U.S.A.	c	b	a	Cornish, 2005
Fitti	Portugal	d	i	a	Igrejas et al, 1999
Fiuzza	Portugal	d	g	c	Igrejas et al, 1999
Flame	U.K.	f	f	c	Gupta et al, 1994
	South				
Flamink	Africa	f	c	e	Gupta et al, 1994
Fleche D'or	France	e/b?	d	c	Gupta et al, 1994
Fleuron	Belgium	c	g	a	Cornish, 2005
Fleurus	France	d	g	c	Branlard et al, 2003
Flinders	Australia	b	b	b	Gupta et al, 1994
Floreal	France	a	d	c	Branlard et al, 2003
Florence	Australia	e	g	a	Gupta et al, 1994
Florin	France	a	g	c	Branlard et al, 2003
Fluto	France	ef	g	c	Branlard et al, 2003
Ford	Australia	c	g/b	c	Gupta et al, 1994
Fortin	France	a	g	a	Branlard et al, 2003
Fournil	France	a	g	c	Branlard et al, 2003
Frame	Australia	c	h	c	Gupta et al, 1994
Frandoc	France	ef	b	b	Branlard et al, 2003

Frandoc	France	c	b	b	Gupta et al, 1994
Frandoc	Portugal	e	b	a	Igrejas et al, 1999
Frankenmuth	Canada	c	i	a	Bushuk, 2006
Free Gallipoli	Australia	e	c	c	Cornish, 2005
Fresco	U.K.	c	g	c	Gupta et al, 1994
Friedland	France	a	g	c	Branlard et al, 2003
Frontana	Brazil	c	e	b	Gupta et al, 1994
Frontana	Canada	c	i	b	Bushuk, 2006
Futur	France	a	g	c	Branlard et al, 2003
Gabo	Australia	b	b	b	Cornish, 2005
Gaboto	Argentina	e/c	e	b/a	Cornish, 2005
Gaillard	France	d	i	c	Branlard et al, 2003
Gala	Australia	e	b	b	Cornish, 2005
Gala	France	d	g	c	Branlard et al, 2003
Galahad	U.K.	f	g/f	c	Gupta et al, 1994
Galaxie	France	a	g	c	Branlard et al, 2003
Gallo	Mexico	d	b	b	Gupta et al, 1994
Gambee	Australia	b	b	b	Cornish, 2005
Gamenya	Australia	b/c	b	b	Cornish, 2005
Gamenya	Australia	b/e	b	b	Gupta et al, 1994
Gamenya_W	Australia South	b	b	b	Cornish, 2007;
Gamtoos dn	Africa	a/b	a	a	Gupta et al, 1994
Gamut	Australia	b	b	b	Cornish, 2005
Gaocheng 8901	China	e	d	n.d.	Liu et al (2005)
Gaoyou 503	China	a	d	n.d.	Liu et al (2005)
Garant	France South	a	c	c	Branlard et al, 2003
Gariép	Africa	f	a/c	a	Gupta et al, 1994
Garnet	Canada	e	g/b	b	Gupta et al, 1994
Gatcher	Australia	e	b	b	Cornish, 2005
Gavroche	France	ef	g	c	Branlard et al, 2003
Gawain	U.K.	c	f	c	Cornish, 2005
GBA Sapphire	Australia	b	b	b	Cornish, 2005
Gemini	Italy	c	f	b	Gupta et al, 1994
Gemini(Hybrid)	Australia	c	g	b	Gupta et al, 1994
Genesis	Canada	c	h	b	Gupta et al, 1994
Genesis (HY 355)	Canada	c	h	a	Bushuk, 2006
Genesis(FR)	France	c	g	c	Gupta et al, 1994
Genial	France	a	g	c	Branlard et al, 2003
Gerbier	France	d	g	a	Branlard et al, 2003
Ghouff (Cltr-7082)	Algeria	b/d/l3	b/a/b	-	Carillo et al, 2005;
Ghurka	Australia	e	c	a?	Gupta et al, 1994
Gibrid 115	U.S.S.R.	c	b	a	Gupta et al, 1994
Giles	Australia	b	b	b	Gupta et al, 1994
Giza 150	Egypt	e	d	a	Gupta et al, 1994
Giza-ISO	Egypt	e	d	a	Cornish, 2005
Glaive	Australia	b	b	b/c	Cornish, 2005
Glanor	France	a	g	c	Branlard et al, 2003
Glenlea	Canada	g	g	c	Gupta et al, 1994
Glenwari	Australia	e	b	b/a	Cornish, 2005
Gloire de Mont Golfier	Algeria	a/d	a/a	-	Carillo et al, 2005;
Glover	Australia	b	h	b	Cornish, 2007;
Gluclub	Australia	e	d	a	Cornish, 2005
Gluclub	Australia	e	d	a	Gupta et al, 1994

Gluford	Australia	c	d	c	Gupta et al, 1994
Gluyas	Australia	e	d	c/a	Cornish, 2005
Gluyas early	Australia	e	d	a	Cornish, 2007;
Goelent	France	a	b	a	Branlard et al, 1993
Golden Return	Australia	c	d?	a	Gupta et al, 1994
Goldmark	Australia	c	h	b	Gupta et al, 1994
Golia	Portugal	a	g	a	Igrejas et al, 1999
Gongmianxiaomai	China	d	d	n.d.	He et al (2005)
Goodstreak	U.S.A.	a	i	a	Shan et al, 2007
Gordon	Canada	c	i	a	Bushuk, 2006
Gordon(Aus)	Australia	c	b	c	Gupta et al, 1994
Goroke	Australia	b	b	b	Gupta et al, 1994
Goya	France	d	c	a	Branlard et al, 2003
Grebe	Australia	c	j	b	Gupta et al, 1994
Greek	Greece	e	g	a	Gupta et al, 1994
Greif	Germany	c	g	c	Gupta et al, 1994
Guanfeng 2	China	a	b	n.d.	Liu et al (2005)
Guemgoum R'khem	Algeria	c	c	-	Carillo et al, 2005;
Guemgoum R'khem BD17	Algeria	c	a	-	Carillo et al, 2005;
Guemgoum R'khem BD3	Algeria	k2	l4	-	Carillo et al, 2005;
Gular	Australia	f	b	b	Gupta et al, 1994
Gutha	Australia	b	b	b	Gupta et al, 1994
Guymon	U.S.A.	c	g	c/a	Shan et al, 2007
H45	Australia	c	h	b	Gupta et al, 1994
H46	Australia	b	h	b	Cornish, 2005
Halberd	Australia	e	c	c	Cornish, 2005
Hallam	U.S.A.	c	g	b	Shan et al, 2007
Halt	U.S.A.	a	e	a	Shan et al, 2007
Hamilcar	France	d	g	c	Branlard et al, 2003
Hard Federation	Australia	c	c	b?	Gupta et al, 1994
Hardi	France	d	g	c	Branlard et al, 2003
Hardi	Spain	d	g	c	Gupta et al, 1994
Harding	U.S.A.	c	f	c	Shan et al, 2007
Harrier	Australia	d	b	b	Gupta et al, 1994
Harrismith	Australia	f	g	a	Gupta et al, 1994
Harry	U.S.A.	c	g	b	Shan et al, 2007
Hartog	Australia	b	h	b	Gupta et al, 1994
Haruhikari	Japan	c	b	b	Cornish, 2005
Hatcher	U.S.A.	d	b	b	Shan et al, 2007
Haven	U.K.	e	j	c	Gupta et al, 1994
Hebeinongda341	China	a	b	n.d.	Liu et al (2005)
Hedba 3	Algeria	a	a	-	Carillo et al, 2005;
Hedba 3 (PI-263418)	Algeria	c	a	-	Carillo et al, 2005;
Hedba 3 -8	Algeria	h	a	-	Carillo et al, 2005;
Henong 2552	China	d	j	n.d.	Liu et al (2005)
Hercules	Canada	e	i	-	Bushuk, 2006
Hercules (DT 191)	Canada	e	i	-	Bushuk, 2006
Hereward	U.K.	e	g	c	Gupta et al, 1994
Heron	Australia	e	c	c	Cornish, 2005
Herzog	Germany	d	j	c	Gupta et al, 1994
Heurtebise	France	a	c	b	Branlard et al, 2003
Heyne	U.S.A.	d	i	c	Shan et al, 2007
Hezera 2152	Israel	c	g	c	Cornish, 2005
Hickling	France	d	g	c	Branlard et al, 2003

Hickok	U.S.A.	e	g	b	Shan et al, 2007
Him	India	d	h	b	Cornish, 2005
Hira	India	d	h	b	Gupta et al, 1994
Hobbit	France	d	g	c	Branlard et al, 2003
Holdfast	U.K.	e	b	c	Cornish, 2005
Hondo	U.S.A.	e	g	a	Shan et al, 2007
Hope	U.S.A.	e	b	a	Cornish, 2005
Hope	U.S.A.	e	b	a	Cornish, 2005
Hopps	Australia	c	b	a	Cornish, 2005
Horace	France	a	g	c	Branlard et al, 2003
Hornblende	Australia	e	c	?	Gupta et al, 1994
Houser	Canada	e	g	a	Bushuk, 2006
Houtman	Australia	b	h	e	Gupta et al, 1994
HS 97-1	China	d	j	n.d.	Liu et al (2005)
HS 97-10	China	a	j	n.d.	Liu et al (2005)
Huaimai 16	China	e	h	n.d.	Liu et al (2005)
Huaimai 17	China	a	j	n.d.	Liu et al (2005)
Huaimai 18	China	d	j	n.d.	Liu et al (2005)
Huaimai 894	China	e	j	n.d.	Liu et al (2005)
Hudson's Early Purpl	Australia	e	b	b	Gupta et al, 1994
Huelquen	Chile	c/b	g	c	Gupta et al, 1994
Hunter	U.K.	e	j	e?	Gupta et al, 1994
Huntsman	France	a	f	c	Branlard et al, 2003
Huron	Canada	e	i	a	Gupta et al, 1994
Hussar	U.K.	e	j	c	Gupta et al, 1994
HW Alpha	Canada	e/b	h	b	Gupta et al, 1994
HY 320	Canada	c	i	c	Bushuk, 2006
HY 413 (AC Vista)	Canada	g	i	c	Bushuk, 2006
HY 417 (AC Crystal)	Canada	c	i	c	Bushuk, 2006
HY 611	Canada	e	g	c	Bushuk, 2006
HY 616 BSLR	Canada	e	i	a/b	Bushuk, 2006
HY 617 BSLR	Canada	e	i	c	Bushuk, 2006
HY 627	Canada	c	i	b	Bushuk, 2006
HY 630	Canada	e	i	b	Bushuk, 2006
HY 631	Canada	e	i	c	Bushuk, 2006
HY 632	Canada	e	i	b	Bushuk, 2006
HY 633	Canada	e	h	a	Bushuk, 2006
HY 634	Canada	b	g	a	Bushuk, 2006
Hybrid Pulsar	Australia	c	b/g	b	Gupta et al, 1994
Hyden	Australia	d	h	a	Gupta et al, 1994
Ibis	Netherlands	d	g	c	Gupta et al, 1994
Iena	France	a	g	c	Branlard et al, 2003
Illana	Romania	c	f	a	Cornish, 2005
Ilves	Finland	e	b	c	Gupta et al, 1994
	New				
Impact	Zealand	c	g	b	Gupta et al, 1994
India 115	India	c	c		Gupta et al, 1994
India-115	India	c	c	?	Cornish, 2005
Infinity CL	U.S.A.	e	f	d	Shan et al, 2007
Inia 66	Mexico	d	h	a	Gupta et al, 1994
Inia-66	Mexico	e	h	c	Cornish, 2005
Insignia	Australia	e	c	c	Cornish, 2005
Insignia	Australia	e	c	c	Gupta et al, 1994
Insignia 49	Australia	e?	c	c	Gupta et al, 1994

Intrada	U.S.A.	g	g	a	Shan et al, 2007
Invader (BW 158)	Canada	e	h	a	Bushuk, 2006
Irne	Portugal	a	g	a	Igrejas et al, 1999
Isis	Australia	e	f	a	Cornish, 2005
Israel 493	Israel	c/e	b	c/b	Gupta et al, 1994
Jabiru	Australia	c	c	c	Cornish, 2005
Jacup	Australia	b	b	a	Gupta et al, 1994
Jagalene	U.S.A.	c	g	c	Shan et al, 2007
Jagger	U.S.A.	a	h	c	Shan et al, 2007
Jano	France	ef	g	c	Branlard et al, 2003
Janz	Australia	b	b	b	Gupta et al, 1994
Jaral*S*/Lee-SK-Mania	Zimbabwe	b	b	c	Cornish, 2005
Jarb	Yugoslavia	e	b	b	Cornish, 2005
Jarka	Yugoslavia	e	b	b	Gupta et al, 1994
Javelin	Australia	e	b/g	b?	Gupta et al, 1994
Jenah Khotaiifa	Algeria	a	a	-	Carillo et al, 2005;
Ji 3475	China	e	j	n.d.	Liu et al (2005)
Ji 5099	China	d	f	n.d.	Liu et al (2005)
Ji 5099	China	d	f	n.d.	He et al (2005)
Ji 5219	China	a	j	n.d.	Liu et al (2005)
Ji 95-6023	China	d	j	n.d.	Liu et al (2005)
Jihan 197	China	d	j	n.d.	He et al (2005)
Jimai 1	China	d	j	n.d.	Liu et al (2005)
Jimai 24	China	a	j	n.d.	Liu et al (2005)
Jimai 26	China	a	d	n.d.	He et al (2005)
Jimai 30	China	a	j	n.d.	He et al (2005)
Jimai 31	China	d	f	n.d.	He et al (2005)
Jimai 36	China	c	j	n.d.	He et al (2005)
Jimai 38	China	d	j	n.d.	Liu et al (2005)
Jing 411	China	c	h	n.d.	Liu et al (2005)
Jing 9428	China	c	b	n.d.	Liu et al (2005)
Jingdong 10	China	c	j	n.d.	Liu et al (2005)
Jingdong 6	China	c	j	n.d.	Liu et al (2005)
Jingdong 8	China	c	j	n.d.	Liu et al (2005)
Jinghe 1	China	a	j	n.d.	He et al (2005)
Jinghe 951	China	c	j	n.d.	Liu et al (2005)
Jingnong 8318	China	e	j	n.d.	Liu et al (2005)
Jingnong 97-86	China	c	h	n.d.	Liu et al (2005)
Jingnong 98-100	China	c	j	n.d.	Liu et al (2005)
Jining 936098	China	d	j	n.d.	Liu et al (2005)
Jining 936098	China	d	j	n.d.	He et al (2005)
Jinmai 45	China	d	j	n.d.	Liu et al (2005)
Jinmai 50	China	d	f	n.d.	Liu et al (2005)
Jinmai 60	China	d	j	n.d.	Liu et al (2005)
Jinmai 61	China	a	j	n.d.	Liu et al (2005)
Jinmai 67	China	a	b	n.d.	Liu et al (2005)
Jinnong 207	China	e	j	n.d.	Liu et al (2005)
Jinnong 215	China	a	j	n.d.	Liu et al (2005)
Jinnong 216	China	e	j	n.d.	Liu et al (2005)
Jinnong 218	China	a	j	n.d.	Liu et al (2005)
JiZ 76	China	a	f	n.d.	Liu et al (2005)
Jonathan	Australia	f	b	a	Gupta et al, 1994
Jorda	Portugal	a	b	a	Igrejas et al, 1999
Joss	France	d	g	c	Branlard et al, 2003

Jufy-l	Belgium	e	i	d	Cornish, 2005
Jules	U.S.A.	e	a	b	Shan et al, 2007
Justin	U.S.A.	e	b	a	Cornish, 2005
Justin	U.S.A.	e	b	a	Cornish, 2005
K1091-1	Australia	c	b	b	Gupta et al, 1994
K1182	Australia	d	h	b	Gupta et al, 1994
K2617	Australia	c	i	c	Gupta et al, 1994
K2926-1	Australia	c	j	b	Gupta et al, 1994
Kadett	France	a	b	c	Branlard et al, 2003
Kahla (CItr-2088)	Algeria	h	b	-	Carillo et al, 2005;
Kalannie	Australia	b/c	b	b/c	Gupta et al, 1994
Kalkee	Australia	e	c	a/c	Cornish, 2005
Kalvesta	U.S.A.	d	h	e	Shan et al, 2007
Kalyansona	India	b/c	g	e?	Gupta et al, 1994
Kalyansona-227	India	c	g	a	Cornish, 2005
Kanzler	Germany	c	g	c	Gupta et al, 1994
	New				
Karamu	Zealand	c	b	b	Cornish, 2005
Karat	Canada	e	b	b	Gupta et al, 1994
Karl 92	U.S.A.	c	f	c	Shan et al, 2007
Karl92	China	a	b	n.d.	He et al (2005)
Karlgarin	Australia	c	h	c	Gupta et al, 1994
Katepwa	Canada	e	h	c	Gupta et al, 1994
Katunga	Australia	e	g	b	Gupta et al, 1994
Katyil	Australia	e	b	a	Gupta et al, 1994
Kavkaz	U.S.S.R.	c	j	c	Gupta et al, 1994
Kelalac	Australia	c	b	b/c	Gupta et al, 1994
Kennedy	Australia	b	h	b	Gupta et al, 1994
Kenya Fanner	U.S.A.	b	b	a	Cornish, 2005
Kenya Fanner	U.S.A.	b	b	a	Cornish, 2005
Kenya Leopard	Kenya	e	b	b	Cornish, 2005
Kenya Leopard	Kenya	e	b	b	Gupta et al, 1994
Kenya Nyati	Kenya	e	b	a	Gupta et al, 1994
Kenyon	Canada	c	h	c	Gupta et al, 1994
Kewell	Australia	e	g	b	Cornish, 2005
Kharkov	U.S.S.R.	e	g	a	Cornish, 2005
Kiata	Australia	b	b	b	Gupta et al, 1994
King	Australia	b	b	b	Gupta et al, 1994
King's White	Australia	f?	d	c	Gupta et al, 1994
Kitchener	Canada	e	b	a	Gupta et al, 1994
Kite	Australia	e	b	b	Cornish, 2005
Klein-Petiso	Argentina	e	h	c	Cornish, 2005
Klein-Petiso RAF	Argentina	e	h	c	Gupta et al, 1994
Kloka		e	g	c	Gupta et al, 1994
Koda	Australia	e	b	b	Gupta et al, 1994
Koga	Belgium	e	g	a	Cornish, 2005
Koga	Belgium	e	g	a	Gupta et al, 1994
	New				
kohika	Zealand	d	h	c	Gupta et al, 1994
Kolubara	Yugoslavia	c	b	c	Cornish, 2005
Kondut	Australia	e	a	a	Cornish, 2005
Kondut	Australia	e	f?	a	Gupta et al, 1994
Konsul	Germany	c	g	c	Gupta et al, 1994
Kontrast	Germany	c	i	c	Gupta et al, 1994
Kopara	New	b	h	a	Cornish, 2005

	Zealand				
Kosava	Yugoslavia	c	e	b	Cornish, 2005
Kosava	Yugoslavia	c	e	b	Gupta et al, 1994
Kota	Canada	c	b	c	Bushuk, 2006
	New Zealand				
Kotare	Zealand	e/b?	i	a	Gupta et al, 1994
	New Zealand				
Kotuku	Zealand	c/d	g	a	Gupta et al, 1994
Kozara	Yugoslavia	c	j	c	Gupta et al, 1994
Kraka	Germany	d	g	c	Gupta et al, 1994
Krichauff	Australia	c	b	a	Gupta et al, 1994
Kronos	U.S.A.	t	d	-	Gupta et al, 1994
Kronos	U.S.A.	t	d	-	Gupta et al, 1994
KS00F5-14-7	U.S.A.	c	i	c	Shan et al, 2007
KS00F5-20-3	U.S.A.	e	g	e	Shan et al, 2007
KS03HW158	U.S.A.	c	g	a	Shan et al, 2007
Kukri	Australia	d	h	b	Gupta et al, 1994
Kulin	Australia	d/b	h	a	Gupta et al, 1994
Kyle	Canada	d/g	i	-	Bushuk, 2006
L 13953	Algeria	a	a	-	Carillo et al, 2005;
L 31	Algeria	a	a	-	Carillo et al, 2005;
L 34	Algeria	b/a	b/a	-	Carillo et al, 2005;
L 45□	Algeria	b/a	b/a	-	Carillo et al, 2005;
L 9230	Algeria	c	a	-	Carillo et al, 2005;
La Prevision W 1636	France	e	h	b	Cornish, 2005
Ladoga	Canada	?	i	a	Gupta et al, 1994
Lake	Canada	e	b	b	Gupta et al, 1994
Lake (CT 918)	Canada	c	g	b	Bushuk, 2006
Lakin	U.S.A.	a	h	a	Shan et al, 2007
Lance	Australia	c	b	b	Cornish, 2005
Lancer	Canada	b/e	h	c	Gupta et al, 1994
Lancer	Portugal	d	i	a	Igrejas et al, 1999
Lang	Australia	b/c	b	b	Gupta et al, 1994
Lankao 24	China	a	j	n.d.	Liu et al (2005)
Laredo	U.S.A.	e	e	b	Shan et al, 2007
Lark	Australia	b	b	c	Gupta et al, 1994
Laura	Hungary	e	h	b	Bedo et al, 2005
Laura (BW 581, BW 593)	Canada	e	h	b	Bushuk, 2006
Laval 19	Canada	b?	g	a	Gupta et al, 1994
Lawson	Australia	c	g	c	Gupta et al, 1994
Leader	Canada	b/e	h	c	Gupta et al, 1994
Lee	Canada	b	b	a	Bushuk, 2006
Leichhardt	Australia	e	h	b	Gupta et al, 1994
Lelija	Yugoslavia	e	b	b	Cornish, 2005
Lennox	Canada	e?	b	b	Gupta et al, 1994
Leone	Italy	d	g	c	Gupta et al, 1994
Lerma Rojo 64A	Mexico	c/d	i/d	c	Cornish, 2005
Lermissso		b	i?	a	Gupta et al, 1994
	South Africa				
Letaba	Africa	a/f	c	a/d	Gupta et al, 1994
Libero	Portugal	a	g	c	Igrejas et al, 1999
Licanka	Yugoslavia	c	j	a	Gupta et al, 1994
Liken 2	China	d	d	n.d.	Liu et al (2005)
Lillimur	Australia	c	g	b	Gupta et al, 1994
Lima	Portugal	a	j	a	Igrejas et al, 1999

Linfen 125	China	d	j	n.d.	Liu et al (2005)
Linfen 127	China	a	j	n.d.	Liu et al (2005)
Linfen 133	China	a	j	n.d.	Liu et al (2005)
Linfen 137	China	d	g	n.d.	Liu et al (2005)
Linfen 138	China	a	f	n.d.	Liu et al (2005)
Linfen 139	China	a	f	n.d.	Liu et al (2005)
Linfen 5232	China	a	j	n.d.	Liu et al (2005)
Linfen 6010	China	d	j	n.d.	He et al (2005)
Linfen 98-6269	China	d	f	n.d.	Liu et al (2005)
Linfeng 615	China	e	j	n.d.	Liu et al (2005)
Linhan 205	China	e	f	n.d.	Liu et al (2005)
Linhan 6114	China	d	j	n.d.	Liu et al (2005)
Linhan 619	China	d	j	n.d.	Liu et al (2005)
Linhan 917	China	a	h	n.d.	Liu et al (2005)
Linyou 1583	China	d	f	n.d.	Liu et al (2005)
Lockett	U.S.A.	c	g	b	Shan et al, 2007
Lodi	France	a	g	b	Branlard et al, 2003
Lodi	Portugal	a	g	a	Igrejas et al, 1999
Longbow	Australia	d	b	c	Gupta et al, 1994
Longbow	France	d	g	c	Branlard et al, 2003
Longhorn	U.S.A.	e	b	a	Shan et al, 2007
Loreto	Portugal	a	g	a	Igrejas et al, 1999
Lorikeet	Australia	b	b	c	Gupta et al, 1994
Loros	Sweden	b	i	a	Gupta et al, 1994
Louvre	France	ef	g	c	Branlard et al, 2003
Lovaszpatonai-407	Hungary	a	g	a	Bedo et al, 2005
Lovaszpatonai-407-15-3	Hungary	f	g	a	Bedo et al, 2005
Lovaszpatonai-407-18-1	Hungary	a	i	a	Bedo et al, 2005
Lovaszpatonai-407-2-2	Hungary	a	g	a	Bedo et al, 2005
Lovrin	China	c	j	a	Gupta et al, 1994
Lowan	Australia	d	h	a	Gupta et al, 1994
Lu 875067	China	a	j	n.d.	He et al (2005)
Lu 884187	China	d	b	n.d.	He et al (2005)
Lu 915091	China	e	f	n.d.	He et al (2005)
Lu 916	China	a	j	n.d.	He et al (2005)
Lu 935031	China	a	f	n.d.	He et al (2005)
Lu 95(6)161	China	a	j	n.d.	Liu et al (2005)
Lu 955159	China	d	b	n.d.	He et al (2005)
Luja	France	d	b	a	Branlard et al, 2003
Luja	Hungary	d	b	a	Bedo et al, 2005
Lumai 14	China	a	j	n.d.	He et al (2005)
Lumai 15	China	e	j	n.d.	He et al (2005)
Lumai 21	China	a	d	n.d.	Liu et al (2005)
Lumai 22	China	d	f	n.d.	Liu et al (2005)
Lumai 23	China	d	a	n.d.	He et al (2005)
Lundi	Zimbabwe	c	f	a	Cornish, 2005
Lutescens 505	Germany	c	c	a	Gupta et al, 1994
Lutescens-505	Germany	c	c	a	Cornish, 2005
Lutin	France	a	c	c	Branlard et al, 2003
Lynx	U.K.	f	j	c	Gupta et al, 1994
M3087.222	Australia	b	b	b	Gupta et al, 1994
M5108	Australia	c	b	b	Gupta et al, 1994
M5184	Australia	c	b	b	Gupta et al, 1994
Machete	Australia	b	b	b	Gupta et al, 1994

Mackellar	Australia	c	f	c?	Gupta et al, 1994
Macquarie	Australia	e	f	a	Cornish, 2005
Macquarie	Australia	e	f	a	Gupta et al, 1994
Macvanka 2	Yugoslavia	c	j	c	Gupta et al, 1994
Madden	Australia	c	b	b	Cornish, 2005
Magali	France	ef	f	b	Branlard et al, 2003
Magdalena	France	d	b	a	Branlard et al, 2003
Magister	France	ef	j	c	Branlard et al, 2003
Magni	France	a	a	i	Branlard et al, 2003
Magnif	Argentina	e	a	a	Cornish, 2005
Magnif 27	France	c	i	b?	Gupta et al, 1994
Manital	France	a	b	a	Branlard et al, 2003
Manitou	Canada	e	h	c	Gupta et al, 1994
Manitou (Insen)	Canada	e	d	c	Cornish, 2005
Manitou (RL 4159)	Canada	e	h	c	Bushuk, 2006
Mara-sepremo-mentana	Chile	c	f	b	Gupta et al, 1994
Marignan	France	d	g	c	Branlard et al, 2003
Maris Freeman	U.K.	e	b	c	Gupta et al, 1994
Maris Huntsman	U.K.	c	f	c	Gupta et al, 1994
Marius	France	d	g	c	Branlard et al, 2003
Marius	Portugal	d	g	c	Igrejas et al, 1999
Marksman	U.K.	e	g	a	Gupta et al, 1994
Marombi	Australia	b	h	a	Gupta et al, 1994
Marquis	Canada	e	b	a	Cornish, 2005
Marquis-K	Canada	e	b	a	Bushuk, 2006
Marshall's No3	Australia	e	g	b	Gupta et al, 1994
Martial	France	d	g	a	Branlard et al, 2003
Master	France	a	f	c	Branlard et al, 2003
Match	France	ef	c	c	Branlard et al, 2003
Matong	Australia	e	g	b	Gupta et al, 1994
Mawson	Australia	e	j	c	Gupta et al, 1994
Max	Canada	e	g	a	Bushuk, 2006
Maya 74	Guatemala	d	h	b	Gupta et al, 1994
McMurrachy	Canada	e	g	a	Gupta et al, 1994
MEA 4	Mexico	c	b	a	Gupta et al, 1994
MEC 3	Mexico	e?	h	b	Gupta et al, 1994
MED 17	Mexico	b	i	b	Gupta et al, 1994
Medora	Canada	g	i	-	Bushuk, 2006
Meering	Australia	b	b	b	Gupta et al, 1994
Mendos	Australia	b	b	b	Cornish, 2005
Mengavi	Australia	b	b	b	Cornish, 2005
Mercero	Portugal	e	j	a	Igrejas et al, 1999
Mercia	U.K.	e	f	c	Gupta et al, 1994
Mercury	U.S.A.	e	b	b	Gupta et al, 1994
Mercury	U.S.A.	e	b	b	Gupta et al, 1994
Mercury(Hybrid)	Australia	e	b	c	Gupta et al, 1994
Merit	France	d	c	c	Branlard et al, 2003
Merit	France	d	b	c	Gupta et al, 1994
Merouani (Cltr-2235)	Algeria	j1	a	-	Carillo et al, 2005;
Mersey	Australia	e	c	c	Cornish, 2005
Messidor	France	ef	g	c	Branlard et al, 2003
Messier	Canada	e	b	b	Gupta et al, 1994
Meteor(Hybrid)	Australia	b & e	b	b	Gupta et al, 1994
Mexicana-1481	Portugal	c	g	b	Cornish, 2005

Mexico 120	Australia	c	b	a	Gupta et al, 1994
Mianyang 11	China	c	d	n.d.	Liu et al (2005)
Mianyang 20	China	a	b	n.d.	He et al (2005)
Mianyang 26	China	d	b	n.d.	Liu et al (2005)
Mianyang 940112	China	d	b	n.d.	Liu et al (2005)
Mianyang 960107	China	a	b	n.d.	Liu et al (2005)
Mianyang 980127	China	a	f	n.d.	Liu et al (2005)
Mianyang 98-17	China	a	j	n.d.	Liu et al (2005)
Mianyang 98-20	China	a	b	n.d.	Liu et al (2005)
Mianyang 99-17	China	d	f	n.d.	Liu et al (2005)
Mikon	Germany	e	b	c	Gupta et al, 1994
Miling	Australia	b	b	b	Gupta et al, 1994
	New Zealand				
Millbrook	Zealand	d	j	c	Gupta et al, 1994
Millennium	U.S.A.	e	f	c	Shan et al, 2007
Millewa	Australia	c	g	b	Gupta et al, 1994
Milpain	France	a	g	c	Branlard et al, 2003
Milton	Canada	e	g	c	Bushuk, 2006
Milton	Canada	e	g	c	Gupta et al, 1994
Minto	Australia	b	b	b?	Gupta et al, 1994
Mira	Australia	b	b	b	Gupta et al, 1994
Mira	Portugal	a	g	c	Igrejas et al, 1999
Miskle	Australia	b	b	b	Gupta et al, 1994
Mission	France	d	f	c	Branlard et al, 2003
Mitre	Australia	b	b	b	Gupta et al, 1994
MKR (111/8)	Australia	c	b	b	Cornish, 2005
MMCW*GJW/7/5	Australia	e	b	b	Gupta et al, 1994
Mohamed Ben Bachir	Algeria	a/d	a/a	-	Carillo et al, 2005;
Mohamed Ben Bachir (Cltr-2087)	Algeria	h	c	-	Carillo et al, 2005;
Mohamed Ben Bachir (PI-352443)	Algeria	d	a	-	Carillo et al, 2005;
Mokoan	Australia	e	g	b	Gupta et al, 1994
Molineux	Australia	c	b	c	Gupta et al, 1994
Molineux	Portugal	a	b	c	Igrejas et al, 1999
	New Zealand				
Monad	Zealand	c	g	a	Gupta et al, 1994
Moncho	Mexico	c	i	b	Gupta et al, 1994
Mondego	Portugal	b	b	a	Igrejas et al, 1999
Mondor	Canada	e	b	a	Gupta et al, 1994
Monitor	France	d	b	c	Branlard et al, 2003
Monopol	Canada	c	g	c	Bushuk, 2006
Montana King	Canada	e	i	a	Bushuk, 2006
	New Zealand				
Morahi	Zealand	d	j	b	Gupta et al, 1994
Moray	Australia	c	b	b	Gupta et al, 1994
Moro	U.S.A.	d	g	a	Gupta et al, 1994
Moro	U.S.A.	d	g	a	Gupta et al, 1994
Moulin	France	ef	g	c	Branlard et al, 2003
Mulgara	Australia	b	b	b	Gupta et al, 1994
Muzaffar Nagar1	India	c	g	a	Gupta et al, 1994
Muzaffar Nagar2	India	c	g	a	Gupta et al, 1994
N 9209-3	China	a	f	n.d.	Liu et al (2005)
Nabawa	Australia	e	g	a	Cornish, 2005
Nabucco	France	a	g	c	Branlard et al, 2003

Nainori-60	Mexico	b	b	b	Cornish, 2005
Nanbukomugi	Japan	d	c	c	Cornish, 2005
Napayo	Canada	e	h	c	Gupta et al, 1994
Napayo (RL 4238)	Canada	e	h	c	Bushuk, 2006
Naphal	Nepal	c	d	b	Gupta et al, 1994
Napo 63	Colombia	e	e	b	Gupta et al, 1994
Nautica	France	ef	j	c	Branlard et al, 2003
Nawah	Australia	f?	d	c	Gupta et al, 1994
Nayab-70	Pakistan	e	b	b	Cornish, 2005
Nazareno	Portugal	a	d	c	Igrejas et al, 1999
NE01643	U.S.A.	e	f	d	Shan et al, 2007
NE99495	U.S.A.	c	f	c	Shan et al, 2007
Nectar	France	d	g	a	Branlard et al, 2003
Neepawa	Canada	e	h	c	Gupta et al, 1994
Neepawa (BW 2)	Canada	e	h	c	Bushuk, 2006
Nekota	U.S.A.	c	b	b	Shan et al, 2007
Neosho	U.S.A.	e	g	d	Shan et al, 2007
Neretva	Yugoslavia	c	b	a	Cornish, 2005
Neretva	Yugoslavia	c	b	a	Gupta et al, 1994
Newbury	U.K.	c	c	c	Cornish, 2005
Ning 9-159	China	c	f	n.d.	Liu et al (2005)
Ning 9247	China	c	f	n.d.	Liu et al (2005)
Ning 9548	China	a	f	n.d.	Liu et al (2005)
Ning 97-18	China	d	f	n.d.	Liu et al (2005)
Ning 97-41	China	a	f	n.d.	Liu et al (2005)
Ning 9766	China	a	b	n.d.	Liu et al (2005)
Ning 98084	China	a	b	n.d.	Liu et al (2005)
Ning 9940	China	a	b	n.d.	Liu et al (2005)
Ning 99415-8	China	c	b	n.d.	Liu et al (2005)
Ning 9952	China	a	b	n.d.	Liu et al (2005)
Ningmai 7	China	a	d	n.d.	He et al (2005)
Niobrara	U.S.A.	c	g	b	Shan et al, 2007
Nisu	France	ef	d	b	Branlard et al, 2003
Nongda 116	China	d	d	n.d.	Liu et al (2005)
Nongda 123	China	c	b	n.d.	Liu et al (2005)
Nongda 152	China	d	d	n.d.	Liu et al (2005)
Nongda 3197	China	e	f	n.d.	Liu et al (2005)
Nongda 3213	China	e	j	n.d.	Liu et al (2005)
Nongda 3214	China	e	j	n.d.	Liu et al (2005)
Nongda 3291	China	e	j	n.d.	Liu et al (2005)
Nongda 3395	China	e	j	n.d.	Liu et al (2005)
Nongda 92101	China	a	h	n.d.	He et al (2005)
Nongda 99-5009	China	d	d	n.d.	Liu et al (2005)
Nongda 99-6020	China	e	b	n.d.	Liu et al (2005)
Norin 10	Japan	c	i	c	Gupta et al, 1994
Norin 61A	Japan	e	i	d	Gupta et al, 1994
Norin 61B	Japan	d	i	e	Gupta et al, 1994
Norin-61	Japan	e/d	i	d/e	Cornish, 2005
Norman	U.K.	d	g	c	Gupta et al, 1994
Noroeste	Mexico	c	i	a	Gupta et al, 1994
Norquay	Canada	c	b	a/b	Bushuk, 2006
Norseman	U.S.A.	b	h	b	Gupta et al, 1994
Norseman	U.S.A.	b	h	b	Gupta et al, 1994
Norstar	Canada	c	b	b	Bushuk, 2006

Norwin	Canada	e	b	c	Gupta et al, 1994
Nougat	France	a	g	c	Branlard et al, 2003
Nova Banalka	Yugoslavia	c	e	a	Cornish, 2005
Novoprata		c	b	b	Gupta et al, 1994
NuFrontier	U.S.A.	c	g	a	Shan et al, 2007
NuHorizon	U.S.A.	a	e	e	Shan et al, 2007
Nuplains	U.S.A.	c	g	c	Shan et al, 2007
Nyabing	Australia	d	b/h	b/c	Gupta et al, 1994
Obelisk	Germany	e	g	c	Gupta et al, 1994
Oderzo	Portugal	d	g	a	Igrejas et al, 1999
Ogallala	U.S.A.	c	g	a	Shan et al, 2007
OK00421	U.S.A.	c	g	a	Shan et al, 2007
Ok101	U.S.A.	c	g	a	Shan et al, 2007
Ok102	U.S.A.	c	g	a	Shan et al, 2007
Okfield	U.S.A.	c	i	a	Shan et al, 2007
Okukomugi	Japan	d/e	d	e	Cornish, 2005
Olympic	Australia	e	b	a	Gupta et al, 1994
Onaga	U.S.A.	a	i	a	Shan et al, 2007
Opal	Canada	e	g	c	Bushuk, 2006
Opal	Netherlands	e	g/b	a	Gupta et al, 1994
Open	France	a	c	b	Branlard et al, 2003
Orca	France	d	d	c	Branlard et al, 2003
Orca	Netherlands	d	i	e	Gupta et al, 1994
Orepi	France	a	g	c	Branlard et al, 2003
Orestis	Germany	e	g	c	Gupta et al, 1994
Oro Blanco	U.S.A.	g	f	a	Shan et al, 2007
	New				
Oroua	Zealand	d	b	b	Gupta et al, 1994
Oslo	Canada	d	h	a	Gupta et al, 1994
Oslo (HY 925)	Canada	d	h	a	Bushuk, 2006
Osprey	Australia	c	b	b	Gupta et al, 1994
	New				
Otane	Zealand	d	b	a	Gupta et al, 1994
Oued Zenati	Algeria	h/h	a/m5	-	Carillo et al, 2005;
Oued Zenati (PI-352410)	Algeria	h	a	-	Carillo et al, 2005;
Oued Zenati 368	Algeria	a	a	-	Carillo et al, 2005;
Ouest	France	d	g	c	Branlard et al, 2003
Ouyen	Australia	c	b	b	Gupta et al, 1994
Overley	U.S.A.	g	g	c	Shan et al, 2007
Owens	Canada	e	g	b	Bushuk, 2006
Owlet	Australia	c	b	b?	Gupta et al, 1994
Oxley	Australia	b	b	b	Cornish, 2005
Pactole	France	d	g	c	Branlard et al, 2003
Pagode	Germany	c	g	c	Gupta et al, 1994
	South				
Palmiet	Africa	a/b/f		c	Gupta et al, 1994
Pandas	France	a	i	c	Branlard et al, 2003
Pandas	Portugal	a	d	c	Igrejas et al, 1999
Pardalote	Australia	c	b	c	Gupta et al, 1994
Park	Canada	c	b	c	Gupta et al, 1994
Park Selection	Canada	e	b	b	Gupta et al, 1994
Partizanka	Yugoslavia	c	e	c	Cornish, 2005
Pasqua	Canada	e	g	c	Gupta et al, 1994
Pasqua (BW 114)	Canada	e	g	c	Bushuk, 2006
Passarinho	Portugal	d	c	c	Igrejas et al, 1999

Paterson	Australia	b	b	c	Gupta et al, 1994
Pato Argentino	Argentina	d	i	e	Cornish, 2005
Pavon	Mexico	b	h	e?	Gupta et al, 1994
Pelissier	Algeria	h	a	-	Carillo et al, 2005;
Pelissier (Cltr-2086)	Algeria	h	c	-	Carillo et al, 2005;
Pelissier BD 14	Algeria	c	a	-	Carillo et al, 2005;
Pelissier de Face (Cltr-6713)	Algeria	a	a	-	Carillo et al, 2005;
Pelsart	Australia	c	b	b	Gupta et al, 1994
Pembina	Canada	e	g	b	Gupta et al, 1994
Pepital	France	d	d	c	Branlard et al, 2003
Percy (awnless)	Canada	c	i	a	Gupta et al, 1994
Percy (bearded)	Canada	c	i	a/b	Bushuk, 2006
Percy (bearded)	Canada	c	i	a	Gupta et al, 1994
Perenjori	Australia	d	b	a	Gupta et al, 1994
Perlo	Canada	c	g	c	Bushuk, 2006
Pernel	France	a	g	a	Branlard et al, 2003
Perouse	Australia	b	b	b	Gupta et al, 1994
Persang	France	e	c	c	Cornish, 2005
Persang	France	e	c	c	Gupta et al, 1994
Petitrojo		e	i?	b	Gupta et al, 1994
Petrel	France	d	h	c	Branlard et al, 2003
Petrie	Australia	b	b	c	Gupta et al, 1994
PH 1521	China	b	d	n.d.	Liu et al (2005)
PH 82-2-2	China	d	d	n.d.	Liu et al (2005)
PH 85-1-1	China	c	j	n.d.	Liu et al (2005)
PH 85-16	China	a	d	n.d.	Liu et al (2005)
Pindar	Australia	e	c	c	Gupta et al, 1994
Pinnacle	Australia	e	c	c	Cornish, 2005
Pinzon	Portugal	a	b	a	Igrejas et al, 1999
Pioneer	Canada	c	g	c	Bushuk, 2006
Pistou	France	a	g	c	Branlard et al, 2003
Pitic 62	Australia	c	b	b	Cornish, 2007;
Pitic62	Mexico	c	b	b	Gupta et al, 1994
Platte	U.S.A.	c	g	c	Shan et al, 2007
Plenty	Canada	d/g	i	-	Bushuk, 2006
Podenco	Portugal	b	i	a	Igrejas et al, 1999
Podunavka	Yugoslavia	c	e	c	Cornish, 2005
Podunavka	Yugoslavia	c	e	c	Gupta et al, 1994
Poncheau	France	a	g	c	Branlard et al, 2003
Ponderosa	U.S.A.	e	a	d	Shan et al, 2007
Potam-70	Mexico	c	g/i	a	Cornish, 2005
Prairie Red	U.S.A.	e	g	e	Shan et al, 2007
Prelude	Canada	c	g	a	Bushuk, 2006
Prelude	Canada	c	c	a	Gupta et al, 1994
Preston	Canada	c	b/i	a/b	Gupta et al, 1994
Priam	France	d	g	c	Branlard et al, 2003
Prinqual	France	ef	g	a	Branlard et al, 2003
Prinqual	France	e/f	g	a	Gupta et al, 1994
Prinqual	Portugal	f	g	a	Igrejas et al, 1999
Promentin	France	a	j	c	Branlard et al, 2003
Pronghorn	U.S.A.	e	b/g	b	Shan et al, 2007
Prophet	U.K.	d	g	c	Gupta et al, 1994
Proqual	France	b	g	c	Branlard et al, 2003
Protinal	France	a	c	c	Branlard et al, 2003

Prowers	U.S.A.	c	g	b	Shan et al, 2007
Prowers 99	U.S.A.	c	g	b	Shan et al, 2007
Pugsley	Australia	c	h	c	Cornish, 2007;
Purple Straw	Australia	e	b	b	Gupta et al, 1994
Puyou 9175	China	c	j	n.d.	Liu et al (2005)
QT5360	Australia	c	h	e?	Gupta et al, 1994
QT5648	Australia	c	b	e?	Gupta et al, 1994
Quadrat	Australia	e	c	c?	Gupta et al, 1994
Qualital	France	d	g	c	Branlard et al, 2003
Quality A	Canada	d	b	a	Gupta et al, 1994
Quarrion	Australia	c	b	b	Gupta et al, 1994
Queen Fan	Australia	b	b	c	Gupta et al, 1994
R 25	China	a	j	n.d.	Liu et al (2005)
R 57	China	a	j	n.d.	Liu et al (2005)
R 59	China	a	j	n.d.	Liu et al (2005)
RAC587	Australia	b	b	b	Gupta et al, 1994
RAC644	Australia	e	b	b	Gupta et al, 1994
RAC655	Australia	c/b	b	c/b	Gupta et al, 1994
RAC662	Australia	b/c	h	c	Gupta et al, 1994
RAC702	Australia	b/c	b	b	Gupta et al, 1994
RAC704	Australia	c	b	b	Gupta et al, 1994
RAC710	Australia	c	h	b	Gupta et al, 1994
RAC730	Australia	d/b	h/b	b	Gupta et al, 1994
RAC731	Australia	b	b	b	Gupta et al, 1994
Radja	France	e	b	b	Branlard et al, 2003
Raduse	Yugoslavia	a	a	a	Cornish, 2005
Ramiro	Germany	e	b	b	Gupta et al, 1994
Ranee	Australia	e	c	c	Cornish, 2005
Rapier	Australia	e/b?	e	b	Gupta et al, 1994
	New				
Rata	Zealand	d	d	b	Gupta et al, 1994
Raven	Australia	c	b	b	Cornish, 2005
Rawhide	U.S.A.	c	h	b	Shan et al, 2007
Real	France	d	g	c	Branlard et al, 2003
Recital	France	d	g	c	Branlard et al, 2003
Red Bobs	Canada	e	b	a/b	Gupta et al, 1994
Red Egyptian	U.S.A.	e	g	a	Cornish, 2005
Red Egyptian	U.S.A.	e	g	a	Cornish, 2005
Red Fife	Canada	e	b	b	Gupta et al, 1994
Red River	Canada	e	h		Bushuk, 2006
Redman	Canada	e	g	a	Gupta et al, 1994
Reeves	Australia	d	b	b	Gupta et al, 1994
	New				
Regency	Zealand	e	g	b	Gupta et al, 1994
Regent	Canada	e	g	a	Gupta et al, 1994
Reldep	Australia	f	b	c	Gupta et al, 1994
Reliance	Canada	b/e	h	c	Bushuk, 2006
Rempart	France	a	i	b	Branlard et al, 2003
Renan	France	a	c	b	Branlard et al, 2003
Renard	U.K.	e	e	c	Cornish, 2005
Renfrew	Canada	e	b	b	Bushuk, 2006
Renown	Canada	b/e	h	a	Bushuk, 2006
Renown	Canada	e	h	a	Gupta et al, 1994
Rescler	France	ef	c	c	Branlard et al, 2003
Rescue	Canada	f	h	a	Cornish, 2005

Resistente	France	a	c	c	Branlard et al, 2003
Reward	Canada	c	g	a	Gupta et al, 1994
Rex	France	a	b	c	Branlard et al, 2003
RF-1	China	a	f	n.d.	Liu et al (2005)
Rhea	Australia	e	b	b	Cornish, 2007;
Riale 1933	Italy	c	i	a	Gupta et al, 1994
Riale 1987	Italy	c	h	c	Gupta et al, 1994
Rialto	U.K.	c	j	c	Gupta et al, 1994
Riband	France	d	f	c	Branlard et al, 2003
Riband	U.K.	d	f	c	Gupta et al, 1994
Richi (Cltr-2089)	Algeria	h/h	b/m5	-	Carillo et al, 2005;
Riol	France	a	c	c	Branlard et al, 2003
Rita	France	a	b	b	Branlard et al, 2003
Ritmo	U.K.	e	g	c	Gupta et al, 1994
Rivoli	France	a	b	c	Branlard et al, 2003
RL 4452	Canada	g	g	c	Bushuk, 2006
Roazon	France	d	b	c	Branlard et al, 2003
Roazon	France	e	b	c	Cornish, 2005
Robin	Australia	e	c	c	Cornish, 2005
Robin	Australia	e	c	c	Gupta et al, 1994
Roblin	Canada	b	h	b	Gupta et al, 1994
Roblin (BW 92)	Canada	b/e	h	b	Bushuk, 2006
Romanija	Yugoslavia	c	b	b	Cornish, 2005
Romany	Kenya	c	e	b	Gupta et al, 1994
	New				
Rongotea	Zealand	e	b	b	Gupta et al, 1994
Ronos	Germany	d	i	c	Gupta et al, 1994
Roque-66	Mexico	e	b	b	Gupta et al, 1994
Rosella	Australia	b	b	b	Gupta et al, 1994
Rossini	France	ef	b	c	Branlard et al, 2003
Rotonde	France	ef	c	c	Branlard et al, 2003
Rowan	Australia	c	h	b	Gupta et al, 1994
Rowdy	U.S.A.	d	c	a	Shan et al, 2007
Roxo	Portugal	d	g	c	Igrejas et al, 1999
Royal	France	d	b	c	Branlard et al, 2003
Rsonon	Canada	c	i	a	Gupta et al, 1994
Rubric	Australia	d	b	c	Cornish, 2007;
Ruby	Canada	e/c	i	b	Bushuk, 2006
Ruby (II)	Canada	c	g	c	Bushuk, 2006
Rudd	Australia	c	g	c	Gupta et al, 1994
Rudi	France	d	d	c	Branlard et al, 2003
Runar	France	d	b	b	Branlard et al, 2003
Rurik	France	a	g	c	Branlard et al, 2003
Ruso	Finland	e	i	a	Gupta et al, 1994
Ruso	France	e	i	a	Branlard et al, 2003
Saba (PI-22738)	Algeria	a	a	-	Carillo et al, 2005;
Sabre	Australia	e	b	b	Cornish, 2005
Sabre	France	a	g	c	Branlard et al, 2003
Saladin	Germany	c	j	c	Gupta et al, 1994
Salmone	France	a	c	c	Branlard et al, 2003
Santa Fe	U.S.A.	a	i	c	Shan et al, 2007
	New				
Sapphire	Zealand	c	b	c	Gupta et al, 1994
Sarina	Portugal	d	c	c	Igrejas et al, 1999
Saturn	Germany	d	g	c	Cornish, 2005

Saturn	Germany	d	g	c	Gupta et al, 1994
Saunders	Canada	e	b	b	Gupta et al, 1994
Schomburgk	Australia	c	b	c	Gupta et al, 1994
Scimitar	Australia	c?	?	c?	Gupta et al, 1994
Scipion	France	d	c	a	Branlard et al, 2003
Score	France	a	g	c	Branlard et al, 2003
SD97538	U.S.A.	c	c	c	Shan et al, 2007
SD97W609	U.S.A.	c	f	c	Shan et al, 2007
SD98102	U.S.A.	c	f	c	Shan et al, 2007
Selkirk	Canada	e	g	a	Gupta et al, 1994
Selkirk (CT 186)	Canada	e	g	a	Bushuk, 2006
Selkirk-K	Canada	e	g	a	Bushuk, 2006
Seneca	U.S.A.	c	b	a	Gupta et al, 1994
Seneca	U.S.A.	c	b	a	Gupta et al, 1994
Sensor	France	ef	j	c	Branlard et al, 2003
Sever	Portugal	a	j	c	Igrejas et al, 1999
Sevilhano	Portugal	d	g	a/c	Igrejas et al, 1999
Shan 150	China	a	b	n.d.	Liu et al (2005)
Shan 160	China	d	d	n.d.	Liu et al (2005)
Shan 229	China	c	j	n.d.	He et al (2005)
Shan 253	China	d	d	n.d.	Liu et al (2005)
Shan 302518	China	c	j	n.d.	Liu et al (2005)
Shan 354	China	d	j	n.d.	Liu et al (2005)
Shan 623	China	c	j	n.d.	Liu et al (2005)
Shan 7859	China	c	j	n.d.	He et al (2005)
Shan 898-33	China	e	b	n.d.	Liu et al (2005)
Shan 9314	China	a	j	n.d.	Liu et al (2005)
Shan 93302	China	d	b	n.d.	Liu et al (2005)
Shandong 924402-6	China	e	j	n.d.	Liu et al (2005)
Shandong 928802	China	a	j	n.d.	Liu et al (2005)
Shandong 935031	China	a	f	n.d.	Liu et al (2005)
Shandong 94(6)006	China	d	d	n.d.	Liu et al (2005)
Shandong 9436	China	d	d	n.d.	Liu et al (2005)
Shangdong 955159	China	d	b	n.d.	Liu et al (2005)
Shannong 1355	China	a	j	n.d.	Liu et al (2005)
Shannong 2013	China	d	j	n.d.	Liu et al (2005)
Shannong 413863	China	b	j	n.d.	Liu et al (2005)
Shannong 60182	China	d	d	n.d.	Liu et al (2005)
Shannong 617	China	a	j	n.d.	Liu et al (2005)
Shannong 664	China	c	j	n.d.	Liu et al (2005)
Shannong 990525	China	c	d	n.d.	Liu et al (2005)
Shanyou 225	China	d	d	n.d.	Liu et al (2005)
Shavano	U.S.A.	a	g	a	Shan et al, 2007
Sherpa	Australia	c	b	b	Cornish, 2005
Shortim	Australia	b	b	b	Cornish, 2005
Shortim	Australia	b	b	b	Gupta et al, 1994
Shrike	Australia	b	b	b	Gupta et al, 1994
Sideral	France	d	g	c	Branlard et al, 2003
Sideral	France	d	g	c	Gupta et al, 1994
Sideral	Portugal	d	g	a/c	Igrejas et al, 1999
Sidjanka	Yugoslavia	e	b	b	Cornish, 2005
Siete Cerros 66	Mexico	b/c	g	e?	Gupta et al, 1994
Silvana	Romania	d	h	c	Cornish, 2005
Silverstar	Australia	b/c	h	b	Gupta et al, 1994

Sinton	Canada	e	h	a	Gupta et al, 1994
Sinton (CT 440)	Canada	b/e	h	a	Bushuk, 2006
Skorospelka	U.S.S.R.	c	j	c	Gupta et al, 1994
Skua	Australia	b	b	b	Gupta et al, 1994
Slejpnir	U.K.	d	j	c	Gupta et al, 1994
sMH3* Warimba)MH9	Australia	c	b	b	Gupta et al, 1994
Snipe	Australia	c	b	b	Gupta et al, 1994
Soissons	France	a	b	c	Branlard et al, 2003
Soissons	U.K.	c	b	c	Gupta et al, 1994
Solitaire	U.K.	c	g	c	Cornish, 2005
Son-64*KL Rend	Argentina	e	h	b	Cornish, 2005
Sonalika	India	e	h	c	Cornish, 2005
Songlen	Australia	c	b	b/c	Gupta et al, 1994
Sonora-64A	Mexico	e	h	a	Cornish, 2005
Sonora-64A	Mexico	c	f	a	Gupta et al, 1994
Sorraia	Portugal	a	g	c	Igrejas et al, 1999
Spark	U.K.	c	g	c	Gupta et al, 1994
Spear	Australia	c	h	c	Gupta et al, 1994
Spica	Australia	b	b	c	Cornish, 2005
Stanley	Canada	e	i	a	Bushuk, 2006
Stanley	Canada	e	f	a	Gupta et al, 1994
Stanton	U.S.A.	c	e	b	Shan et al, 2007
Steinweidel	Australia	e?	b	c	Gupta et al, 1994
Stiletto	Australia	c	h	c	Gupta et al, 1994
stoniaWarimba)MH11	Australia	c	b	b	Gupta et al, 1994
Storch	France	d	g	c	Branlard et al, 2003
Stretton	Australia	c	b	c	Gupta et al, 1994
Strzelecki	Australia	c	b	c	Gupta et al, 1994
Sturdy 2K	U.S.A.	c	g	a	Shan et al, 2007
Sturt	Australia	b	b	a	Gupta et al, 1994
Styler	Australia	c/e	h	c	Gupta et al, 1994
Sultan	Australia	f?	d	c	Gupta et al, 1994
Summit	Australia	e	c	c	Cornish, 2005
SUN183F	Australia	d	b	b	Gupta et al, 1994
SUN190A	Australia	b	b	b	Gupta et al, 1994
SUN190B	Australia	b	b	b	Gupta et al, 1994
SUN211A	Australia	d	h	e?	Gupta et al, 1994
SUN239R	Australia	d	b	e?	Gupta et al, 1994
SUN250C	Australia	e	b	e?	Gupta et al, 1994
SUN276A	Australia	b	b	b	Gupta et al, 1994
SUN89D	Australia	b	j	b	Gupta et al, 1994
Sun-92A	Australia	c	b	a	Cornish, 2005
Sunbird	Australia	c	b	b	Gupta et al, 1994
Sunbri	Australia	b	b	b	Gupta et al, 1994
Sunbrook	Australia	b/d	h	b	Gupta et al, 1994
Sunco	Australia	b	b	b	Gupta et al, 1994
Sundance	Canada	b/e	h	c	Bushuk, 2006
Sundor	Australia	b	b	b	Gupta et al, 1994
Suneca	Australia	d	h	e	Gupta et al, 1994
Sunelg	Australia	c	b	b?	Gupta et al, 1994
Sunfield	Australia	c	b	b	Gupta et al, 1994
Sunkota	Australia	b	b	a	Cornish, 2005
Sunland	Australia	c	b	b	Gupta et al, 1994
Sunlin	Australia	d	b	b	Gupta et al, 1994

Sunmist	Australia	b	b	b	Gupta et al, 1994
Sunsoft98	Australia	b	b	b	Gupta et al, 1994
Sunstar	Australia	c	b	b	Gupta et al, 1994
Sunstate	Australia	b	h	b	Gupta et al, 1994
Sunvale	Australia	b	b	b	Gupta et al, 1994
Supreme	Canada	c	b	b	Gupta et al, 1994
Suwon-II	North Korea	c	f	a	Cornish, 2005
Suyin 10	China	a	h	n.d.	Liu et al (2005)
SW Odiel	Australia	b	j	b	Cornish, 2005
Swift	Australia	b	b	b	Gupta et al, 1994
Sword	Australia	e/f?	g/d	c	Gupta et al, 1994
T Polonicum-ZB	Algeria	a	a	-	Carillo et al, 2005;
T-64-2W	Tunisia	d	b	c	Cornish, 2005
Tailorbird	Australia	b	h	b	Gupta et al, 1994
	New Zealand				
Tainui	Zealand	c	c	a	Cornish, 2005
	New Zealand				
Takahe	Zealand	c	b	b	Cornish, 2005
Takari	Australia	c	b	b	Gupta et al, 1994
Talent	France	a	g	c	Branlard et al, 2003
Talent	France	c	g	c	Gupta et al, 1994
Talent	Portugal	a	g	c	Igrejas et al, 1999
TAM 107	U.S.A.	e	g	b	Shan et al, 2007
TAM 110	U.S.A.	e	g	b	Shan et al, 2007
TAM 111	U.S.A.	a	h	a	Shan et al, 2007
TAM 112	U.S.A.	e	g	b	Shan et al, 2007
TAM 202	U.S.A.	e	e	a	Shan et al, 2007
TAM 302	U.S.A.	c	g	b	Shan et al, 2007
TAM 400	U.S.A.	e	e	a	Shan et al, 2007
TAM303	U.S.A.	e	g	a	Shan et al, 2007
Tamega	Portugal	a	j	a	Igrejas et al, 1999
Tammi	Finland	e	b	b	Cornish, 2005
Tammi	Finland	e	b	b	Gupta et al, 1994
Tammin	Australia	c	b	b	Gupta et al, 1994
Tandem	U.S.A.	c	f	c	Shan et al, 2007
Tango	France	d	g	c	Branlard et al, 2003
Tanori-71	Mexico	e	h	b	Cornish, 2005
Tapio	Finland	c	b	a	Gupta et al, 1994
Tarasque	France	d	b	b	Branlard et al, 2003
Tarquin	France	a	j	c	Branlard et al, 2003
Tarsa	Australia	b	b	b	Cornish, 2005
Tasman	Australia	b	d	a	Gupta et al, 1994
Tatiara	Australia	c	b	c	Gupta et al, 1994
TatiaraEA9/6	Australia	c	b	c	Gupta et al, 1994
Tea	Australia	e	g	b	Cornish, 2005
Teal	Australia	e	g	b	Gupta et al, 1994
Tejo	Portugal	a	b	a	Igrejas et al, 1999
Tennant	Australia	d	j/b	c	Gupta et al, 1994
Tenor	Portugal	a	g	c	Igrejas et al, 1999
Tern	Australia	c	g	c	Gupta et al, 1994
Thatcher	Canada	e	h	e	Cornish, 2005
Thesee	France	a	g	c	Branlard et al, 2003
Thornbill	Australia	c/b	b	a	Gupta et al, 1994
Thunderbolt	U.S.A.	c	g	c	Shan et al, 2007
Tigre	Portugal	a	g	a	Igrejas et al, 1999

Timgalen	Australia	b	b	b	Cornish, 2005
Timgalen	Australia	b	b	b	Gupta et al, 1994
Timmo	U.K.	d	b	c?/a	Gupta et al, 1994
Timson	Australia	c	b	b	Cornish, 2005
Timstein	U.S.A.	c/e	b	b	Cornish, 2005
Timstein	U.S.A.	c/e	b	b	Gupta et al, 1994
Timstein	U.S.A.	c/e	b	b	Gupta et al, 1994
Tincurrin	Australia	e	d	a	Cornish, 2005
Titien	France	d	i	c	Branlard et al, 2003
TM56		c	b	b	Gupta et al, 1994
Tobari-66	Mexico	e/c	i/d	e/c	Cornish, 2005
Tomahawk	U.S.A.	e	e	b	Shan et al, 2007
Tonkawa	U.S.A.	d	b	a	Shan et al, 2007
Top	France	d	g	c	Branlard et al, 2003
Toquifen*S*	Chile	e	b/h	c/e	Cornish, 2005
Torero	Portugal	a	g	c	Igrejas et al, 1999
Torfrida	U.K.	e?	g	c	Gupta et al, 1994
Toronto	Germany	e	j	c	Gupta et al, 1994
Torres	Australia	b	b	b	Gupta et al, 1994
Tosca		e	b	c	Gupta et al, 1994
Trapio	Portugal	a	j	a	Igrejas et al, 1999
Trego	U.S.A.	c	g	b	Shan et al, 2007
Tremie	France	e/f	c	c	Gupta et al, 1994
Trida	Portugal	a	j	a	Igrejas et al, 1999
Trident	Australia	e	h	c	Gupta et al, 1994
Triller	Australia	b	j	b	Gupta et al, 1994
Tua	Portugal	a	b	c	Igrejas et al, 1999
Tugela	South Africa	a/c/f	b	d/e	Gupta et al, 1994
Tugela dn	South Africa	d	f	a/c	Gupta et al, 1994
Tugela fg	South Africa	a	a/c	a	Gupta et al, 1994
Tui	Australia	c	h	b	Cornish, 2007;
Tui	New Zealand	e	j	b	Gupta et al, 1994
Turbo	U.S.A.	c	g	c	Cornish, 2005
Turbo	U.S.A.	c	g	c	Cornish, 2005
Turkey 1473	Turkey	c	g	a	Gupta et al, 1994
Turpin-7	South Africa	b	b	b	Cornish, 2005
Turpin-7	South Africa	b	b	b	Gupta et al, 1994
Ulm	France	a	g	c	Branlard et al, 2003
Una	Yugoslavia	c	g	b	Cornish, 2005
Unic	France	ef	j	c	Branlard et al, 2003
UP-301	India	d	h	c	Cornish, 2005
Uruguay	URUGUAY	e	c	b?	Gupta et al, 1994
Ushiokomugi	Japan	d	d	c	Cornish, 2005
Valor	Canada	e	b	b	Gupta et al, 1994
Vanessa	Australia	e	g	a	Gupta et al, 1994
Vardenik 9	U.S.S.R.	c	e	a	Gupta et al, 1994
Vasco	Australia	b	b	b?	Gupta et al, 1994
Vasco	France	d	j	c	Branlard et al, 2003
Vectis	Australia	c	b	a	Gupta et al, 1994

Veery'S'	Mexico	c	j	b	Gupta et al, 1994
Venango	U.S.A.	a	g	a	Shan et al, 2007
Veranopolis	Brazil	c	b	b	Gupta et al, 1994
Vermillion	Canada	c	b	c	Bushuk, 2006
Vernon	Canada	e	g	c	Gupta et al, 1994
Vicam-71	Mexico	e	g	a	Cornish, 2005
Vicking	France	d	d	c	Branlard et al, 2003
Victor-I	Italy	c	c	b	Cornish, 2005
Virest		c	g	b	Gupta et al, 1994
Vista	U.S.A.	a	h	c	Shan et al, 2007
Vivant	U.K.	c	f	c	Gupta et al, 1994
Vizir	France	ef	g	c	Branlard et al, 2003
Voyage	France	ef	j	c	Branlard et al, 2003
VPM-1B	France	e	b	c	Gupta et al, 1994
Vulcan	Australia	b	b	b	Gupta et al, 1994
W04-417	U.S.A.	c	g	c	Shan et al, 2007
Wagga13	Australia	f	b	a	Gupta et al, 1994
Wahoo	U.S.A.	c	g	b	Shan et al, 2007
Wakooma (DT 316)	Canada	d/g	i	-	Bushuk, 2006
Wallaroi	Australia	d?	e?		Gupta et al, 1994
Wanmai 18	China	c	f	n.d.	Liu et al (2005)
Wanmai 19	China	e	d	n.d.	Liu et al (2005)
Wanmai 33	China	d	g	n.d.	Liu et al (2005)
Wanmai 38	China	a	b	n.d.	Liu et al (2005)
Waratah	Australia	c?	d	a	Gupta et al, 1994
Warbler	Australia	b	j	b	Gupta et al, 1994
Wards	Australia	e	g	a	Cornish, 2005
Ward's Prolific	Australia	f	b	b	Gupta et al, 1994
Warigal	Australia	c	b	a	Cornish, 2005
Warimba	Australia	c	b	b	Cornish, 2005
Warimba	Australia	c	b	b	Gupta et al, 1994
Warimek	Australia	b	b	a	Gupta et al, 1994
Wariquam	Australia	c	b	a	Gupta et al, 1994
Wascana	Canada	g/e	i	-	Bushuk, 2006
	New				
Wasp	Zealand	e	g	b	Gupta et al, 1994
WB411W	U.S.A.	a	a	a	Shan et al, 2007
Wellstead	Australia	c	b	c	Gupta et al, 1994
Wendy	U.S.A.	c	c	b	Shan et al, 2007
Wenmai 4	China	d	g	n.d.	He et al (2005)
Wenmai 6	China	d	f	n.d.	He et al (2005)
Wesley	U.S.A.	c	g	c	Shan et al, 2007
Westbred Keota	U.S.A.	d	e	a	Shan et al, 2007
Westonia	Australia	c	h	c	Gupta et al, 1994
Whistler	Australia	c	b	b	Gupta et al, 1994
White Fife	Canada	e?	b	b	Gupta et al, 1994
White Lammas	Australia	c	b	a	Gupta et al, 1994
White Russian	Canada	e	i	a	Gupta et al, 1994
Wialki	Australia	e	b	b	Gupta et al, 1994
Wildcat	Canada	c	b	c	Gupta et al, 1994
Wildcat (PT 329)	Canada	c	b	c	Bushuk, 2006
Wilgoyne	Australia	d	h	b?	Gupta et al, 1994
Winalta	Canada	c	b	c	Bushuk, 2006
Winalta	Canada	e	b	a	Bushuk, 2006

Winalta	U.S.A.	c	b	c	Gupta et al, 1994
Winalta	U.S.A.	c	b	c	Gupta et al, 1994
Windebri	Australia	e	c	a	Cornish, 2005
Windstar	U.S.A.	c	g	b	Shan et al, 2007
Winglen	Australia	e	b	b	Gupta et al, 1994
Wollaroi	Australia	t	d	-	Gupta et al, 1994
Wongoondy	Australia	e	g	b	Cornish, 2005
Worrakatta	Australia	c	b	c	Gupta et al, 1994
Wren	Australia	e	g	b	Cornish, 2005
Wren(Mexico)	Mexico	e	b	a	Gupta et al, 1994
WW1203	Australia	d	h	c ?	Gupta et al, 1994
WW1248	Australia	c?	b	b	Gupta et al, 1994
WW15	Australia	c	b	b	Gupta et al, 1994
WW1543	Australia	c?	h	a	Gupta et al, 1994
WW766	Australia	c	a?	c	Gupta et al, 1994
Wyalkatchem	Australia	c	h	b	Gupta et al, 1994
Wylah	Australia	c	b	b	Gupta et al, 1994
Wyuna	Australia	c	h	b	Gupta et al, 1994
Xelaja-66	Guatemala	-	a	a	Cornish, 2005
Xiaoyan 54	China	d	d	n.d.	Liu et al (2005)
Xiaoyan 6	China	d	d	n.d.	Liu et al (2005)
Xinong 1163-20	China	a	f	n.d.	Liu et al (2005)
Xinong 1220801	China	a	j	n.d.	Liu et al (2005)
Xinong 336	China	a	d	n.d.	Liu et al (2005)
Xinong 6426	China	a	d	n.d.	Liu et al (2005)
Xinong 8925-13	China	d	d	n.d.	Liu et al (2005)
Xu 858	China	a	d	n.d.	Liu et al (2005)
Xuzhou 25	China	d	f	n.d.	Liu et al (2005)
Xuzhou 826	China	a	j	n.d.	Liu et al (2005)
Y10-8	China	a	f	n.d.	Liu et al (2005)
Y10Bindawarra	Australia	b/c	g/b	c/b	Gupta et al, 1994
Yan 239	China	b	j	n.d.	Liu et al (2005)
Yan 2801	China	e	j	n.d.	Liu et al (2005)
Yan 475	China	a	f	n.d.	Liu et al (2005)
Yan 85722	China	c	j	n.d.	He et al (2005)
Yan 99-5	China	a	j	n.d.	Liu et al (2005)
Yanac	Australia	b	b	b	Gupta et al, 1994
Yandilla King	Australia	f	b	a	Gupta et al, 1994
Yanfu 188	China	d	d	n.d.	Liu et al (2005)
Yang 96-152	China	a	f	n.d.	Liu et al (2005)
Yang 96G25	China	c	f	n.d.	Liu et al (2005)
Yang 97-65	China	c	f	n.d.	Liu et al (2005)
Yangmai 158	China	c	f	n.d.	Liu et al (2005)
Yangmai 5	China	c	f	n.d.	Liu et al (2005)
Yangmai 9	China	a	f	n.d.	Liu et al (2005)
Yannong 15	China	c	f	n.d.	Liu et al (2005)
Yannong 18	China	c	j	n.d.	Liu et al (2005)
Yantar	U.S.A.	e	b	c.	Cornish, 2005
Yantar	U.S.A.	e	b	c.	Cornish, 2005
Yanyou 361	China	c	h	n.d.	Liu et al (2005)
Yarralinka	Australia	c	b	b	Gupta et al, 1994
Yecora 70	Mexico	d	h	a	Gupta et al, 1994
Yecora Rojo 76	U.S.A.	d	h	a	Gupta et al, 1994
Yecora Rojo 76	U.S.A.	d	h	a	Gupta et al, 1994

Yin 11-12	China	a	j	n.d.	Liu et al (2005)
Yitpi	Australia	c	h	c	Gupta et al, 1994
Yolo	U.S.A.	c	h	a	Cornish, 2005
Yolo	U.S.A.	c	h	a	Cornish, 2005
Yorkstar	Canada	c	i	a	Bushuk, 2006
Youxuan 14	China	d	d	n.d.	Liu et al (2005)
Youxuan 9	China	d	d	n.d.	Liu et al (2005)
Yuandong 107	China	a	j	n.d.	Liu et al (2005)
Yuandong 6	China	e	j	n.d.	Liu et al (2005)
Yuandong 8585	China	a	j	n.d.	Liu et al (2005)
Yuandong 9428	China	a	j	n.d.	Liu et al (2005)
Yuandong 971	China	a	j	n.d.	Liu et al (2005)
Yuma	U.S.A.	d	b	b	Shan et al, 2007
Yumai 13	China	d	j	n.d.	He et al (2005)
Yumai 18	China	a	d	n.d.	He et al (2005)
Yumai 2	China	d	j	n.d.	He et al (2005)
Yumai 21	China	d	j	n.d.	Liu et al (2005)
Yumai 25	China	d	f	n.d.	He et al (2005)
Yumai 28	China	c	j	n.d.	Liu et al (2005)
Yumai 34	China	d	h	n.d.	Liu et al (2005)
Yumai 35	China	a	j	n.d.	Liu et al (2005)
Yumai 47	China	a	d	n.d.	Liu et al (2005)
Yumai 49	China	d	f	n.d.	Liu et al (2005)
Yumai 50	China	c	j	n.d.	Liu et al (2005)
Yumai 51	China	d	j	n.d.	Liu et al (2005)
Yumai 54	China	a	d	n.d.	Liu et al (2005)
Yumai 56	China	a	d	n.d.	Liu et al (2005)
Yumai 57	China	a	d	n.d.	Liu et al (2005)
Yumai 62	China	d	j	n.d.	Liu et al (2005)
Yumai 63	China	a	d	n.d.	Liu et al (2005)
Yumai 69	China	c	d	n.d.	Liu et al (2005)
Yumai 70	China	a	j	n.d.	Liu et al (2005)
Yumar	U.S.A.	d	b	b	Shan et al, 2007
Yun 97169	China	d	j	n.d.	Liu et al (2005)
Yunfengzao 101	China	e	b	n.d.	Liu et al (2005)
Yunfengzao 898	China	a	j	n.d.	Liu et al (2005)
Yunmai 39	China	e	j	n.d.	Liu et al (2005)
Yunmai 42	China	a	f	n.d.	Liu et al (2005)
Yunmai 44	China	a	j	n.d.	Liu et al (2005)
Yunmai 46	China	d	j	n.d.	Liu et al (2005)
Yunong 94268	China	d	j	n.d.	Liu et al (2005)
Yunong 95339	China	a	d	n.d.	Liu et al (2005)
Zaff	Australia	c	g	a	Gupta et al, 1994
Zambezi	Zimbabwe	b	f	a	Cornish, 2005
Zelengora	Yugoslavia	c	j	c	Gupta et al, 1994
Zenith	Australia	e	c	c	Cornish, 2005
Zentos	Germany	e	g	b	Gupta et al, 1994
Zheng 81-1	China	d	a	n.d.	He et al (2005)
Zheng 8329	China	d	d	n.d.	He et al (2005)
Zhengzhou 7898	China	d	d	n.d.	Liu et al (2005)
Zhengzhou 9023	China	a	d	n.d.	Liu et al (2005)
Zhengzhou 974	China	c	j	n.d.	Liu et al (2005)
Zhengzhou 992	China	c	j	n.d.	Liu et al (2005)
Zhong 91162	China	a	h	n.d.	Liu et al (2005)

Zhongliang 88303	China	a	j	n.d.	Liu et al (2005)
Zhongliang 88375	China	c	j	n.d.	Liu et al (2005)
Zhongliang 93646	China	c	f	n.d.	Liu et al (2005)
Zhongmai 16	China	d	j	n.d.	Liu et al (2005)
Zhongmai 9	China	c	j	n.d.	Liu et al (2005)
Zhongyou 14	China	d	d	n.d.	Liu et al (2005)
Zhongyou 16	China	d	d	n.d.	Liu et al (2005)
Zhongyou 8	China	d	h	n.d.	Liu et al (2005)
Zhongyou 9507	China	d	b	n.d.	Liu et al (2005)
Zhongyou 9701	China	d	d	n.d.	Liu et al (2005)
Zhongyou 9814	China	d	d	n.d.	Liu et al (2005)
Zhongyou 9843	China	d	d	n.d.	Liu et al (2005)
Zhongyou 9844	China	a	d	n.d.	Liu et al (2005)
Zhongyu 415	China	b	d	n.d.	Liu et al (2005)
Zhongyu 5	China	d	j	n.d.	Liu et al (2005)
Zhongyu 6	China	c	j	n.d.	Liu et al (2005)
Zhongzhou 81-1	China	d	a	n.d.	Liu et al (2005)
Zhongzuo 8131-1	China	d	j	n.d.	Liu et al (2005)
Zhou 91177	China	c	j	n.d.	Liu et al (2005)
Zhoumai 13	China	d	j	n.d.	Liu et al (2005)
Ziblica	Yugoslavia	a	a	a	Cornish, 2005
Zipa-68	Colombia	e	g	a	Cornish, 2005
Zitnica	Yugoslavia	a	a	a	Gupta et al, 1994
Zodiac	U.K.	d	j	c	Gupta et al, 1994
Zrenjaninka	Yugoslavia	c	g	a	Cornish, 2005