

**Accessory Publication**

ESM 1. Subpopulations constructed using Bayesian analysis (Pritchard *et al.* 2000) in wheat genotypes collected from the Australian Winter Cereal Collection and NSW DPI wheat breeding program. LCs, MCs and BLs denotes to landrace cultivars, modern cultivars and advanced breeding lines respectively.

Genotype-ID	Population	Structure	Genotype ID	Population	Structure
ACC366	LCs	1	Moskovskaja35	MCs	1
97TH7	MCs	1	Persia11	LCs	1
Abyssinia AV15.1	LCs	1	Persia55	LCs	1
Aleppo7	LCs	1	Persia79	LCs	1
AMC55	LCs	1	Persia8	LCs	1
AMC57	LCs	1	PH82-2	MCs	1
AUS24906	MCs	1	Portugal 110	LCs	1
AUS30566	MCs	1	Portugal 130	LCs	1
Bakker Gold	MCs	1	Raffles	MCs	1
Canrock1	MCs	1	Salonika 10	LCs	1
Caucasus W8528	LCs	1	Salonika 8	LCs	1
Caucasus W94668	LCs	1	Sarajevo 3a	LCs	1
Centauro	MCs	1	Sarajevo 4	LCs	1
China1	LCs	1	Shaanyou 225	MCs	1
China14	LCs	1	Shannong 7859	MCs	1
China2	LCs	1	Siberia W6928	LCs	1
China20	LCs	1	Smyrna 17a	LCs	1
China21	LCs	1	SST367	MCs	1
China35	LCs	1	Tadorna	MCs	1
China7	LCs	1	Toropi	MCs	1
Courtel	MCs	1	Tunis10a	LCs	1
Crimeaw94465	LCs	1	Tunis18	LCs	1
Croatia12	LCs	1	Tunis24	LCs	1
Croatia13	LCs	1	Tunis3	LCs	1
Croatia16	LCs	1	Turkestan (W84523)	LCs	1
Croatia18	LCs	1	USSR W94457	LCs	1
ES34	MCs	1	Varna11	LCs	1
Florida302	MCs	1	Varna20	LCs	1
Funo	MCs	1	Varna29	LCs	1
Georgia W57156	LCs	1	Wampum	MCs	1
Georgia W57180	LCs	1	WB951242	LCs	1
Georgia W7111	LCs	1	Wenmai4	MCs	1
H1409	LCs	1	Xiaoyan54	MCs	1
H4	LCs	1	Yangmai5	MCs	1
Haruyataka	MCs	1	Zheng81	MCs	1
Heron	MCs	1	Abyssinia 43	LCs	2
Hope	MCs	1	Abyssinia AV12.4	LCs	2
Hrz3	MCs	1	AMC12	LCs	2
India11	LCs	1	Arrino	MCs	2
India29	LCs	1	Asakaskomagi	MCs	2
Iraq22	LCs	1	Azerbaijan W73314	LCs	2
Iraq28	LCs	1	Azerbaijan W73337	LCs	2
Iraq29	LCs	1	Brevor	MCs	2
Iraq31	LCs	1	Caucasus W8529	LCs	2
Iraq34a	LCs	1	China15	LCs	2
Iraq47	LCs	1	China27	LCs	2
Iraq58	LCs	1	China29	LCs	2
Iraq59	LCs	1	China8	LCs	2

Krestyanka	MCs	1	Chinese Spring	MCs	2
Kukri	MCs	1	Fielder	MCs	2
Ljuba	MCs	1	Gandum Kalabu	LCs	2
Lu955/59	MCs	1	Georgia (W57164)	LCs	2
Maringa	MCs	1	Greece28	LCs	2
Morocco55	LCs	1	H100	LCs	2
Morph	MCs	1	H1015	LCs	2
<b>Genotype ID</b>	<b>Pop</b>	<b>Structure</b>	<b>Genotype ID</b>	<b>Pop</b>	<b>Structure</b>
H1029	LCs	2	H1546	LCs	2
H104	LCs	2	H1579	LCs	2
H1060	LCs	2	H1580	LCs	2
H1062	LCs	2	H1591	LCs	2
H1080	LCs	2	H160b	LCs	2
H1086	LCs	2	H161	LCs	2
H109b	LCs	2	H1617	LCs	2
H1105	LCs	2	H169	LCs	2
H112	LCs	2	H170	LCs	2
H1129	LCs	2	H171	LCs	2
H1142	LCs	2	H1722	LCs	2
H1148	LCs	2	H175	LCs	2
H1149	LCs	2	H195	LCs	2
H115	LCs	2	H205	LCs	2
H1172	LCs	2	H206	LCs	2
H1178	LCs	2	H224	LCs	2
H1179	LCs	2	H232c	LCs	2
H1183	LCs	2	H241	LCs	2
H1186	LCs	2	H250b	LCs	2
H1188	LCs	2	H257b	LCs	2
H119	LCs	2	H28b	LCs	2
H1192	LCs	2	H29b	LCs	2
H1197	LCs	2	H352	LCs	2
H1209	LCs	2	H354	LCs	2
H1210	LCs	2	H368	LCs	2
H1221	LCs	2	H388	LCs	2
H1227	LCs	2	H390	LCs	2
H1278	LCs	2	H400	LCs	2
H1282	LCs	2	H401	LCs	2
H1283	LCs	2	H416	LCs	2
H1309	LCs	2	H43b	LCs	2
H1314	LCs	2	H500	LCs	2
H1325	LCs	2	H535	LCs	2
H1340	LCs	2	H551	LCs	2
H1346	LCs	2	H573	LCs	2
H1359	LCs	2	H576	LCs	2
H1367	LCs	2	H600	LCs	2
H1371	LCs	2	H609	LCs	2
H138	LCs	2	H613	LCs	2
H1380	LCs	2	H619	LCs	2
H1396	LCs	2	H627	LCs	2
H1401	LCs	2	H634	LCs	2
H1408	LCs	2	H714	LCs	2
H1413	LCs	2	H750	LCs	2
H143	LCs	2	H751	LCs	2
H1447	LCs	2	H789	LCs	2
H1448	LCs	2	H790	LCs	2
H1453b	LCs	2	H801	LCs	2
H1461	LCs	2	H813	LCs	2
H1470	LCs	2	H821	LCs	2

H1491	LCs	2
H1496	LCs	2
H1498	LCs	2
H1511	LCs	2
H1541	LCs	2
H972	LCs	2

H827	LCs	2
H831	LCs	2
H847	LCs	2
H916	LCs	2
H934	LCs	2
Aleppo25	LCs	3

<b>Genotype ID</b>	<b>Pop</b>	<b>Structure</b>
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India10	LCs	2
India15	LCs	2
India16	LCs	2
India24	LCs	2
India26	LCs	2
India3	LCs	2
India35	LCs	2
India36	LCs	2
India42	LCs	2
India47	LCs	2
India50	LCs	2
India9	LCs	2
Iraq51	LCs	2
Iraq56	LCs	2
Molen	MCs	2
Norin10/Brevor14	MCs	2
Nw43a	LCs	2
Persia115	LCs	2
Persia118	LCs	2
Persia118	LCs	2
Persia125	LCs	2
Persia28	LCs	2
Persia3	LCs	2
Persia44	LCs	2
Persia51	LCs	2
Persia52	LCs	2
Persia56	LCs	2
Persia63	LCs	2
Persia65	LCs	2
Sarajevo1	LCs	2
Sarajevo14	LCs	2
Sarajevo14a	LCs	2
Sarajevo8	LCs	2
Scout66	MCs	2
Tugela	MCs	2
Tunis23a	LCs	2
Varna17	LCs	2
Varna32	LCs	2
W139b	LCs	2
WB951105(Iran)	LCs	2
WB951165(Iran)	LCs	2
WB951206(Iran)	LCs	2
WB951335(Iran)	LCs	2
WB951343(Iran)	LCs	2
WB951346(Iran)	LCs	2
WB952546(Iran)	LCs	2
WB952675(Iran)	LCs	2
WB952891(Iran)	LCs	2
WB953018(Iran)	LCs	2
WB953093(Iran)	LCs	2

<b>Genotype ID</b>	<b>Pop</b>	<b>Structure</b>
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Aleppo27	LCs	3
Alondra	MCs	3
AMC1	LCs	3
AMC16	LCs	3
AMC230	LCs	3
AMC31	LCs	3
AMC501	LCs	3
AMC509	LCs	3
AMC64	LCs	3
AUS24907	MCs	3
Azerbaijan W73332	LCs	3
Bankuti 1201	MCs	3
Bd231	MCs	3
Beit Dagan	MCs	3
Camara's No3	LCs	3
Carrazhino	MCs	3
Catbird	MCs	3
China13	LCs	3
China16	LCs	3
China19	LCs	3
China34	LCs	3
China36	LCs	3
China40	LCs	3
Chuan Mai18	MCs	3
Corrigin	MCs	3
Crete10	LCs	3
Crete11	LCs	3
Crete12	LCs	3
Crete13	LCs	3
Crete14	LCs	3
Crete15	LCs	3
Crete2	LCs	3
Crete3	LCs	3
Crete5	LCs	3
Crete6	LCs	3
Crete7	LCs	3
Crete8	LCs	3
Crete9	LCs	3
Croatia10	LCs	3
Croatia15	LCs	3
Croatia17	LCs	3
Croatia19	LCs	3
Croatia6	LCs	3
Croatia9	LCs	3
CSW 5592	MCs	3
CSW55953	MCs	3
Cyprus1	LCs	3
Cyprus15	LCs	3
Cyprus3	LCs	3
Cyprus4	LCs	3

WB953281(Iran)	LCs	2	Cyprus9	LCs	3
WB953384(Iran)	LCs	2	Dalmatia2	LCs	3
Xiaoyan6	MCs	2	Dalmatia3	LCs	3
Aleppo21	LCs	3	Dalmatia4	LCs	3
Dalmatia5	LCs	3	Morocco10	LCs	3
Damascus2	LCs	3	Morocco11	LCs	3
<b>Genotype ID</b>	<b>Pop</b>	<b>Structure</b>	<b>Genotype ID</b>	<b>Pop</b>	<b>Structure</b>
Damascus 6	LCs	3	Morocco12	LCs	3
Damascus 6a	LCs	3	Morocco15	LCs	3
Damascus 7a	LCs	3	Morocco16	LCs	3
Damascus 8	LCs	3	Morocco18	LCs	3
DON W94435	LCs	3	Morocco2	LCs	3
Egypt20	LCs	3	Morocco20	LCs	3
Egypt34	LCs	3	Morocco21	LCs	3
Egypt4	LCs	3	Morocco25	LCs	3
Egypt54	LCs	3	Morocco28	LCs	3
Eland	MCs	3	Morocco29	LCs	3
Erechin	MCs	3	Morocco30	LCs	3
Farrolunga	MCs	3	Morocco31	LCs	3
Frame	MCs	3	Morocco33	LCs	3
Gaza1	LCs	3	Morocco35	LCs	3
Georgia W57173	LCs	3	Morocco39	LCs	3
Greece10	LCs	3	Morocco41	LCs	3
Greece13	LCs	3	Morocco44	LCs	3
Greece15	LCs	3	Morocco45	LCs	3
Greece16	LCs	3	Morocco49	LCs	3
Greece17	LCs	3	Morocco52	LCs	3
Greece19	LCs	3	Morocco54	LCs	3
Greece21	LCs	3	Morocco56	LCs	3
Greece22	LCs	3	Morocco57	LCs	3
Greece27	LCs	3	Morocco58	LCs	3
Greece28	LCs	3	Mulgare	MCs	3
Greece5	LCs	3	Navarre10	LCs	3
H1137	LCs	3	Navarre14	LCs	3
H1319	LCs	3	Navarre17	LCs	3
H1331	LCs	3	Navarre28	LCs	3
Hereward	MCs	3	Navarre4	LCs	3
IAS20	MCs	3	Navarre48	LCs	3
India21	LCs	3	Navarre58	LCs	3
India30	LCs	3	Navarre6	LCs	3
India31	LCs	3	Navarre67	LCs	3
India32	LCs	3	Navarre7	LCs	3
India38	LCs	3	Navarre74	LCs	3
India39	LCs	3	Navarre8	LCs	3
India43	LCs	3	Olympic	MCs	3
India44	LCs	3	Pbw65	MCs	3
India45	LCs	3	Persia111	LCs	3
India46	LCs	3	Persia121	LCs	3
India48	LCs	3	Persia123	LCs	3
India49	LCs	3	Persia22	LCs	3
India52	LCs	3	Persia24	LCs	3
India8	LCs	3	Persia 29	LCs	3
Insignia	MCs	3	Persia4	LCs	3
Iraq42a	LCs	3	Persia 42	LCs	3
Lr-Kutsk W43322	LCs	3	Persia 43	LCs	3
Isis	MCs	3	Persia 50	LCs	3
Leon1	LCs	3	Persia 53	LCs	3

Leon14	LCs	3	Persia 66	LCs	3
Leon5	LCs	3	Persia 88	LCs	3
Mahon6	LCs	3	Portugal 101	LCs	3
Portugal 11	LCs	3	Ukraine W94472	LCs	3
Portugal 11	LCs	3	Valencia 19	LCs	3
Portugal 120	LCs	3	Valladolid 1	LCs	3
<b>Genotype ID</b>	<b>Pop</b>	<b>Structure</b>	<b>Genotype ID</b>	<b>Pop</b>	<b>Structure</b>
Portugal 13	LCs	3	Varna39	LCs	3
Portugal 140	LCs	3	Varna42	LCs	3
Portugal 15	LCs	3	Varna6	LCs	3
Portugal 150	LCs	3	Varna7	LCs	3
Portugal 160	LCs	3	Veranopolis	MCs	3
Portugal 170	LCs	3	Victo	MCs	3
Portugal 99	LCs	3	Vizcaya17	LCs	3
Rees	MCs	3	Vizcaya19	LCs	3
Romany	MCs	3	Vizcaya3	LCs	3
Salamanca2	LCs	3	Vizcaya4	LCs	3
Salamanca3	LCs	3	Vizcaya6	LCs	3
Salonica15	LCs	3	Vizcaya8	LCs	3
Salonica2	LCs	3	WB951209(Iran)	LCs	3
Salonica5	LCs	3	WB951338(Iran)	LCs	3
Salonica7	LCs	3	WB952777(Iran)	LCs	3
Salonika12	LCs	3	WB952817(Iran)	LCs	3
Salonika9	LCs	3	WB952824(Iran)	LCs	3
Sarajevo1a	LCs	3	WB952851(Iran)	LCs	3
Sarajevo2	LCs	3	WB952915(Iran)	LCs	3
Sarajevo3	LCs	3	WW3577	MCs	3
Sarajevo5	LCs	3	WW3581	MCs	3
Sarajevo7	LCs	3	Yeniseiw43320	LCs	3
Seville15	LCs	3	Yitpi	MCs	3
Seville16	LCs	3	Yumai7	MCs	3
Seville19	LCs	3	Alfa	MCs	4
Seville20	LCs	3	AMC507	LCs	4
Seville5	LCs	3	Brasilia	MCs	4
Sinai7	LCs	3	Cypress	MCs	4
Sinai8	LCs	3	Damascus4	LCs	4
Smyrna11	LCs	3	Drassriver	LCs	4
Smyrna11a	LCs	3	India34	LCs	4
Smyrna13	LCs	3	Israel493	MCs	4
Smyrna13a	LCs	3	SST3	MCs	4
Smyrna14a	LCs	3	Yumai21	MCs	4
Smyrna17	LCs	3	Abyssinia1	LCs	5
Smyrna8	LCs	3	Abyssinia10	LCs	5
Spear	MCs	3	Abyssinia21	LCs	5
Spear	MCs	3	Abyssinia23	LCs	5
Stylet	MCs	3	Abyssinia33	LCs	5
Tadina	MCs	3	AC Barrie	MCs	5
Tincurrinquarion	MCs	3	AC Domain	MCs	5
Tunis1	LCs	3	AC Majestic	MCs	5
Tunis11	LCs	3	AC Snowbird	MCs	5
Tunis11a	LCs	3	AC Superb	MCs	5
Tunis2	LCs	3	Aleppo1	LCs	5
Tunis24a	LCs	3	Aleppo32	LCs	5
Tunis3a	LCs	3	Alsen	MCs	5
Tunis4	LCs	3	AMC25	LCs	5
Tunis5	LCs	3	AMC62	LCs	5
Tunis8	LCs	3	Arrino	MCs	5

Tunis9	LCs	3	AUS30267	MCs	5
Tunis9a	LCs	3	AUS30283	MCs	5
AUS30292	MCs	5	H1305	LCs	5
AUS30335	MCs	5	H1310	LCs	5
AUS30364	MCs	5	H1358	LCs	5
AUS30377	MCs	5	H1388	LCs	5
<b>Genotype ID</b>	<b>Pop</b>	<b>Structure</b>	<b>Genotype ID</b>	<b>Pop</b>	<b>Structure</b>
AUS30589	MCs	5	H1390	LCs	5
Azteca	MCs	5	H1399	LCs	5
Baviakora M92	MCs	5	H1410	LCs	5
Bulgaria88	MCs	5	H1411	LCs	5
C306	MCs	5	H1418	LCs	5
Cardinal	MCs	5	H1466	LCs	5
Caucasus W8559	LCs	5	H1478	LCs	5
Cheyenne	MCs	5	H1484	LCs	5
China12	LCs	5	H1488	LCs	5
CITR7777	LCs	5	H1495	LCs	5
CITR7795	LCs	5	H1503	LCs	5
Cooperatorka	LCs	5	H1516	LCs	5
Damascus7	LCs	5	H1517	LCs	5
Egypt10	LCs	5	H1521	LCs	5
Fan6	MCs	5	H1526	LCs	5
Fret2	MCs	5	H153	LCs	5
Gandum Sockhay	LCs	5	H154	LCs	5
Georgia W57143	LCs	5	H155	LCs	5
Georgia W94675	LCs	5	H1551	LCs	5
Grandin	MCs	5	H1556	LCs	5
H10	LCs	5	H1562	LCs	5
H1012	LCs	5	H1584	LCs	5
H1018	LCs	5	H1601	LCs	5
H101a	LCs	5	H164	LCs	5
H1024	LCs	5	H1641	LCs	5
H1037	LCs	5	H1653	LCs	5
H1040	LCs	5	H1689	LCs	5
H1048	LCs	5	H1728a	LCs	5
H1064	LCs	5	H173	LCs	5
H1068	LCs	5	H177	LCs	5
H108	LCs	5	H194	LCs	5
H1094	LCs	5	H222	LCs	5
H1098	LCs	5	H237	LCs	5
H1110b	LCs	5	H329	LCs	5
H1115	LCs	5	H332	LCs	5
H1120	LCs	5	H38b	LCs	5
H1141	LCs	5	H407	LCs	5
H1153	LCs	5	H408	LCs	5
H1170	LCs	5	H424	LCs	5
H1190	LCs	5	H482	LCs	5
H1198	LCs	5	H494	LCs	5
H1202	LCs	5	H512	LCs	5
H1204	LCs	5	H536	LCs	5
H1207	LCs	5	H583	LCs	5
H121	LCs	5	H586	LCs	5
H1222	LCs	5	H590	LCs	5
H1229	LCs	5	H602	LCs	5
H1268	LCs	5	H604	LCs	5
H1287	LCs	5	H621	LCs	5
H1288	LCs	5	H716	LCs	5

H1302	LCs	5	H799	LCs	5
H808	LCs	5	Nursit	MCs	5
H842	LCs	5	Nw97a	LCs	5
H866	LCs	5	Oasis	MCs	5
H90	LCs	5	Oderzo	MCs	5
H90	LCs	5	Opata85	MCs	5
<b>Genotype ID</b>	<b>Pop</b>	<b>Structure</b>	<b>Genotype ID</b>	<b>Pop</b>	<b>Structure</b>
H921	LCs	5	Persia102	LCs	5
H926	LCs	5	Persia104	LCs	5
H929	LCs	5	Persia114	LCs	5
H932	LCs	5	Persia119	LCs	5
H944	LCs	5	Persia122	LCs	5
H955	LCs	5	Persia13	LCs	5
H975	LCs	5	Persia15	LCs	5
H984	LCs	5	Persia17	LCs	5
H988	LCs	5	Persia2	LCs	5
HRZ1	MCs	5	Persia21	LCs	5
India1	LCs	5	Persia39	LCs	5
India12	LCs	5	Persia57	LCs	5
India13	LCs	5	Persia58	LCs	5
India14	LCs	5	Persia59	LCs	5
India17	LCs	5	Persia78	LCs	5
India18	LCs	5	Persia82	LCs	5
India19	LCs	5	PI73314	LCs	5
India2	LCs	5	Portugal 47	LCs	5
India20	LCs	5	Renan	MCs	5
India22	LCs	5	Renan	MCs	5
India23	LCs	5	Salamanca6	LCs	5
India25	LCs	5	Saratovskaja 29	MCs	5
India27	LCs	5	Saratovskaya 58	MCs	5
India28	LCs	5	Saspu 1	LCs	5
India37	LCs	5	Scythe	MCs	5
India4	LCs	5	Seneca	MCs	5
India40	LCs	5	Sinai1	LCs	5
India41	LCs	5	Smyrna 14	LCs	5
India5	LCs	5	Sujata	MCs	5
India6	LCs	5	Sullivan	MCs	5
India7	LCs	5	Trintani	MCs	5
Iraq29a	LCs	5	Turkestan W84527	LCs	5
Iraq33a	LCs	5	Ukraine W94452	LCs	5
Iraq34	LCs	5	Ukraine W94508	LCs	5
Iraq42	LCs	5	USSR W94433	LCs	5
Iraq43	LCs	5	USSR W94455	LCs	5
Iraq45	LCs	5	Varna14	LCs	5
Iraq50	LCs	5	Varna25	LCs	5
Iraq55	LCs	5	W139a	LCs	5
Iraq57	LCs	5	W194	LCs	5
Kanata	MCs	5	WB951110(Iran)	LCs	5
Karlgarin	MCs	5	WB951309(Iran)	LCs	5
Len	MCs	5	WB951332(Iran)	LCs	5
Miankhanzai	LCs	5	WB951353(Iran)	LCs	5
Molera	MCs	5	WB951472(Iran)	LCs	5
Morocco14	LCs	5	WB952384(Iran)	LCs	5
Morocco5	LCs	5	WB952452(Iran)	LCs	5
Navarre31	LCs	5	WB952670(Iran)	LCs	5
Navarre40	LCs	5	WB952672(Iran)	LCs	5
Neepawa	MCs	5	WB952676(Iran)	LCs	5

WB952712(Iran)	LCs	5	Brennan	MCs	8
WB952730(Iran)	LCs	5	Buck Pucara	MCs	8
WB952953(Iran)	LCs	5	C148	MCs	8
WB953075(Iran)	LCs	5	C240	MCs	8
WB953153(Iran)	LCs	5	C680	MCs	8
WB953374(Iran)	LCs	5	Calidad	MCs	8
<b>Genotype ID</b>	<b>Pop</b>	<b>Structure</b>	<b>Genotype ID</b>	<b>Pop</b>	<b>Structure</b>
WW2449	BLs	5	CPAN 3004	MCs	8
Wyuna	MCs	5	DHWX 1741	MCs	8
Zhongyou 9507	MCs	5	Diamondbird	MCs	8
Zigulovskaja	MCs	5	DI153-2	MCs	8
ACC340	LCs	6	Dollarbird	MCs	8
India115	MCs	6	Drysdale-1	MCs	8
NW100a	LCs	6	Drysdale	MCs	8
NW107a	LCs	6	EGA-Wedgetail	MCs	8
NW10a	LCs	6	Egypt129	LCs	8
NW33a	LCs	6	Egypt130	LCs	8
NW36a	LCs	6	Gamtoos	MCs	8
NW38a	LCs	6	Georgia W57149	LCs	8
NW39a	LCs	6	Glenlea	MCs	8
NW44a	LCs	6	Gordon	MCs	8
NW45a	LCs	6	H100	MCs	8
NW46a	LCs	6	H152	LCs	8
NW48a	LCs	6	H231a	LCs	8
NW49a	LCs	6	H26	MCs	8
NW56a	LCs	6	H45	MCs	8
NW61a	LCs	6	H45	MCs	8
NW62a	LCs	6	H540	LCs	8
NW64a	LCs	6	H760	LCs	8
NW6a	LCs	6	H816	LCs	8
NW72a	LCs	6	Hartog	MCs	8
NW79a	LCs	6	Hazera895	MCs	8
NW7a	LCs	6	HD2329	MCs	8
NW85a	LCs	6	HRZ2	MCs	8
NW86a	LCs	6	HRZ5	MCs	8
NW87a	LCs	6	HUW234	MCs	8
NW8a	LCs	6	Idaho377s	MCs	8
NW99b	LCs	6	India33	LCs	8
NW9a	LCs	6	India51	LCs	8
Goldmark	MCs	7	Inia F66	MCs	8
Kulin	MCs	7	Iraq31a	LCs	8
Machete	MCs	7	Iraq33	LCs	8
Raj3077	MCs	7	J54	MCs	8
Roblin	MCs	7	Kalannie	MCs	8
WH542	MCs	7	Kalyansona	MCs	8
WW2463	MCs	7	Kariega	MCs	8
AMC66	LCs	8	Klasic	MCs	8
Amery	MCs	8	Kleinchamaco	MCs	8
AUS232721	MCs	8	Lada	MCs	8
AUS30590	MCs	8	Leichhardt	MCs	8
AUS30590-1	MCs	8	Limpopo	MCs	8
AUS30598	MCs	8	M1696	BLs	8
B403	BLs	8	M5908	BLs	8
B403c	BLs	8	M5708	BLs	8
Benecubbin	MCs	8	Milan	MCs	8
Borlaug	MCs	8	Naphal	MCs	8
Navarre71	LCs	8	Cook	MCs	9



Nobel	MCs	8	Cunningham	MCs	9
Pandas	MCs	8	EGA HUME	MCs	9
Pastor	MCs	8	Giles	MCs	9
Pbw343	MCs	8	Gutha	MCs	9
Persia101	LCs	8	Houtman	MCs	9
PFAU	MCs	8	J1	MCs	9
<b>Genotype ID</b>	<b>Pop</b>	<b>Structure</b>	<b>Genotype ID</b>	<b>Pop</b>	<b>Structure</b>
Pinnacle	MCs	8	Janz	MCs	9
Pitic62	MCs	8	Janz	MCs	9
Printa Super	MCs	8	JM87222	MCs	9
QT8733 (Glover)	MCs	8	Lang	MCs	9
Reeves	MCs	8	Lang	MCs	9
Rowan	MCs	8	Lorikeet	MCs	9
Sapphire	MCs	8	Lorikeet	MCs	9
Siette Ceros10684	MCs	8	Petrie	MCs	9
Siette Cerros	MCs	8	QT7208	BLs	9
Slavonija	MCs	8	Quarrion	MCs	9
Sonora64	MCs	8	Rosella	MCs	9
Sparc65	MCs	8	Snipe	MCs	9
Sparc66	MCs	8	Spica	MCs	9
Sst16	MCs	8	ST43	MCs	9
Sunbrook	MCs	8	Strzelecki	MCs	9
T4	MCs	8	Sun124A	BLs	9
Tunis10	LCs	8	Sun325A	BLs	9
UP2338	MCs	8	Sun325B	BLs	9
VH302	BLs	8	Sun325C	BLs	9
VI157	BLs	8	Sun325K	BLs	9
VI161	BLs	8	Sun326AE	BLs	9
VI164	BLs	8	Sunbri	MCs	9
VI341*31	BLs	8	Sunco	MCs	9
Volcanidd-1	MCs	8	Sunsoft 98	MCs	9
Warigal	MCs	8	Sunstate	MCs	9
Weaver	MCs	8	Swift	MCs	9
Westbred906	MCs	8	Thornbill	MCs	9
Westonia	MCs	8	TI80122	MCs	9
Westonia-1	MCs	8	VI236	BLs	9
WW10384	BLs	8	VI250	BLs	9
WW11324	BLs	8	VI369	BLs	9
WW11325	BLs	8	VK237R	BLs	9
WW2148	BLs	8	VI125	BLs	9
WW4716	BLs	8	Whistler	BLs	9
WW4717	BLs	8	WW11288	BLs	9
Wyalkatchem	MCs	8	WW11289	BLs	9
Yecora	MCs	8	WW11320	BLs	9
Arnhem	MCs	9	WW15	BLs	9
AUS232722	MCs	9	WW15	BLs	9
AUS30549	MCs	9	WW1842	BLs	9
AUS30556	MCs	9	WW2501	BLs	9
Batavia	MCs	9	WW2528	BLs	9
Bowerbird	MCs	9	WW2529	BLs	9
CD87	BLs	9	WW2557	BLs	9
Chara	MCs	9	WW2656	BLs	9
Chara	MCs	9	WW2673	BLs	9
Condor	MCs	9	WW2680	BLs	9
Condor	MCs	9	WW2688	BLs	9
WW2772	BLs	9	Chinese Spring	MCs	Unidentified
WW2783	BLs	9	Gamenya	MCs	Unidentified

WW3194	BLs	9	H472	LCs	Unidentified
WW3324	BLs	9	Hrz4	MCs	Unidentified
WW3516	BLs	9	Lee	MCs	Unidentified
WW3864	BLs	9	Merav	MCs	Unidentified
WW3870	BLs	9	Seville27	LCs	Unidentified
WW3947	BLs	9	Tunis23	LCs	Unidentified
<b>Genotype ID</b>	<b>Pop</b>	<b>Structure</b>	<b>Genotype ID</b>	<b>Pop</b>	<b>Structure</b>
WW3948	BLs	9	WW3518	BLs	Unidentified
WW4244	BLs	9	WW3860	BLs	Unidentified
WW4263	BLs	9	WW8526	BLs	Unidentified
WW4719	BLs	9	AUS30583	MCs	Unidentified
WW4721	BLs	9			
WW5211	BLs	9			
WW5230	BLs	9			
WW5306	BLs	9			
WW5736	BLs	9			
WW6107	BLs	9			
WW8745	BLs	9			
Wyalkatchem	MCs	9			
Wylah	MCs	9			
Baxter	MCs	10			
WW3542	BLs	10			
WW3543	BLs	10			
WW3863	BLs	10			
AMC47	LCs	11			
AUS30547	MCs	11			
Banks	MCs	11			
China28	LCs	11			
Currawong	MCs	11			
H860	LCs	11			
Iraq30	LCs	11			
Jinan16	MCs	11			
Knudson	MCs	11			
Krichauff	MCs	11			
Kutunga	MCs	11			
Lowan	MCs	11			
Matong	MCs	11			
Mckenzie	MCs	11			
Mec	MCs	11			
Nanda 2419	MCs	11			
Penjamo 62	MCs	11			
Persia 87	LCs	11			
WW278416	BLs	11			
WW27847	BLs	11			
WW3014	BLs	11			
WW3050	BLs	11			
WW3517	BLs	11			
WW725	BLs	11			
Greece 25	LCs	12			
Morocco 9	LCs	12			
Persia 6	LCs	12			
Tunis 27	LCs	12			
Alter	MCs	Unid			
Buck Atlantico	MCs	Unid			

**Structure Data parameters**

Set 1 - Admixture model, allele frequencies correlated

Set 2 - Admixture model, allele frequencies independent

Set 3 - No admixture, allele frequencies correlated

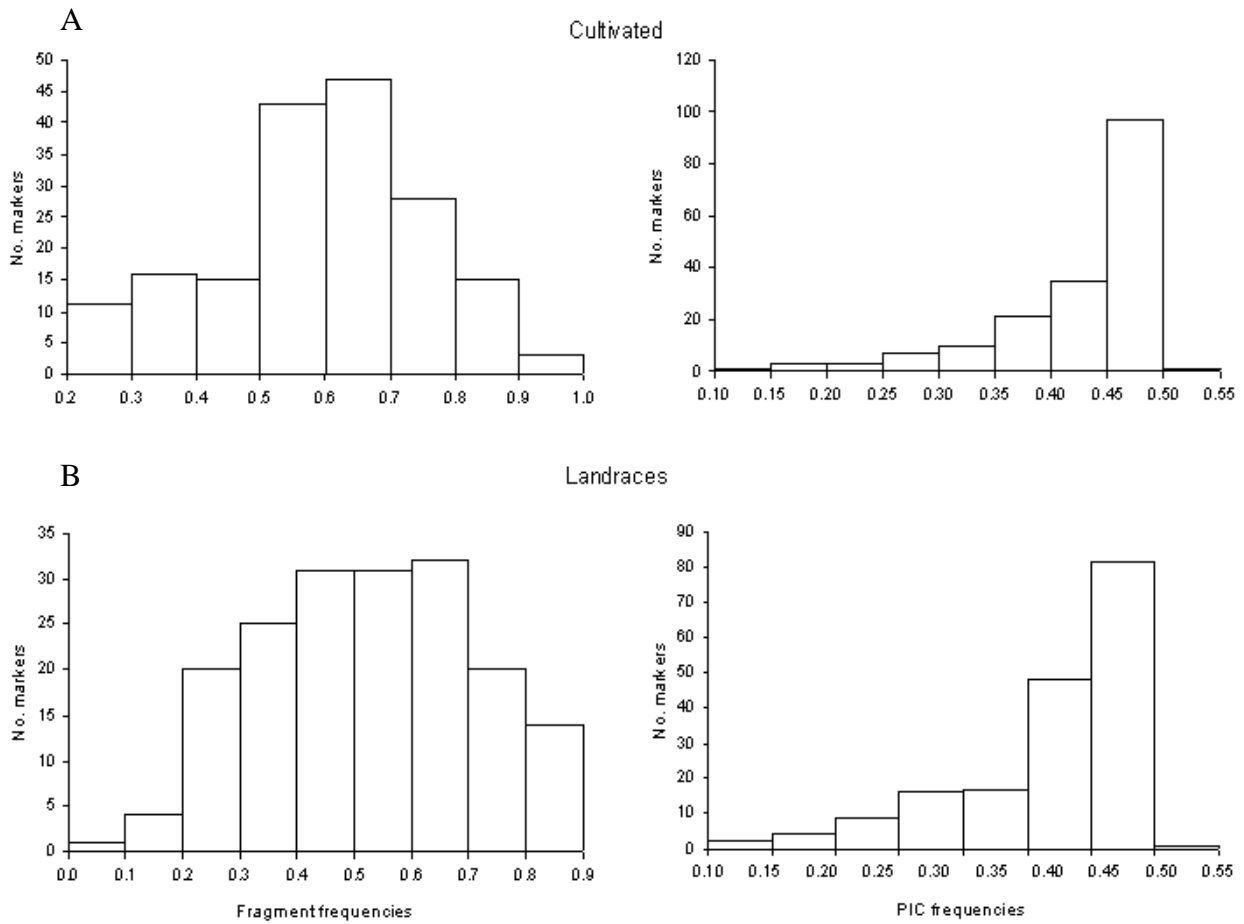
Set 5 - No admixture, allele frequencies independent

For each set, no prior "population" information was used. Each set was performed with  $K$  (number of assumed groups) of 3, 4 and 5. A burnin period of 20000 was performed prior to 50000 iterations of the model.

**Simulation summary**

Set	K	Ln P(D)	Var[LnP(D)]	$\hat{\alpha}$	Fst1	Fst2	Fst3	Fst4
1	Fst5							
	3	-98046.2	1061.2	0.0774	0.6435	0.2014	0.4479	
	4	-95236.8	1626.4	0.0602	0.1841	0.7060	0.2935	0.4158
	5	-92842.5	1995.6	0.0817	0.3065	0.2648	0.4374	0.3540
	0.7497							
2	3	-98072.1	1067.7	0.0737				
	4	-95304.9	1753.1	0.0606				
	5	-92790.6	1955.2	0.0859				
3	3	-99153.8	448.5	-	0.3490	0.2435	0.3206	
	4	-96430.1	643.3	-	0.1915	0.3955	0.1069	0.3883
	5	-94783.3	630.5	-	0.3725	0.1439	0.3954	0.1949
	0.7393							
5	3	-99455.1	422.8					
	4	-96379.7	532.0					
	5	-94779.1	731.					

ESM 2. Comparison of fragment frequencies of DArT markers and polymorphism information content (PIC) indices between modern cultivars (including advanced breeding lines: A) and landrace cultivars (B) of wheat. PIC for DArT markers was calculated according to De Rick *et al.* (2001).



ESM 3. Neighbour Joining phenograms of a subset of modern and traditional landrace cultivars of wheat based on the 178 DArT data markers. Details of the ID are given in ESM 1. Phenograms were drawn using Phylip program (<http://evolution.genetics.washington.edu/phylip.html>).

