

Supplemental Table S1 Information of the 707 wheat accessions assessed in the present study.

Accession No.	Landrace name	Origin	Geographic distribution [†]	Altitude (m)	East longitude (°)	Northern Latitude (°)	BLUP of 8 agronomic traits [‡]							
							FD	FLL	FLW	PDL	SH	SL	TN	PH
AS660683	Chongyanghongmai	Hubei	YTS	-	119.18	36.75	162.99	19.8	1.56	23.45	1.82	11.05	15.19	148.02
AS660689	Huangshuibai	Zhejiang	YTS	-	-	-	-	-	-	-	-	-	-	-
AS660739	Chaoanxiaomai	Guangdong	SAS	-	119.18	36.75	153.48	21.84	1.58	23.71	2.11	9.43	10.38	123.7
AS660789	Baituzitou	Shangdong	Y&H	-	-	-	173.45	20.41	1.14	24.3	1.38	9.59	14.6	136.8
AS660889	Kashibaipi	Xinjiang	XJ	58	119.18	36.43	161.72	21.84	1.79	22.43	2.11	12.86	13.6	135.39
AS660891	Chinese Spring	Sichuan	SWAS	65	116.22	40.22	157.29	24.21	1.6	29.17	2.26	10.06	13.77	143.19
AS661005	Baixiaomai	Beijing	NW	5	116.92	38.93	165.85	20.07	1.41	26.69	1.09	10.38	10.38	142.19
AS661006	Baimangmai	Beijing	NW	46	114.50	36.58	164.89	21.14	1.41	26.25	1.09	9.09	10.92	135.96
AS661007	Guanghulutou	Haidian, Beijing	NW	-	115.97	39.48	172.82	26.1	1.41	21.86	1.09	11.49	12.96	135.72
AS661009	Tumai	Tongxian, Beijing	NW	16	116.80	37.65	164.26	19.29	1.28	23.1	1.09	8.66	12.7	139.78
AS661010	Wuhuatou	Tongxian, Beijing	NW	750	111.78	37.25	168.38	17.44	1.21	18.5	1.09	10.23	11.52	141.62
AS661011	Hongmanghong	Shunyi, Beijing	NS	-	110.45	34.88	164.89	23.2	1.36	23.47	1.09	10.53	13.52	137.26
AS661012	Henanbai	Fangshan Zhoukoudian, Beijing	NW	42	122.03	37.18	168.06	19.59	1.36	18.87	1.09	8.18	11.65	134.3
AS661013	Baimang	Tongxian, Beijing	NW	60	116.80	35.77	174.72	24.17	1.38	25.21	1.09	10.59	12.8	135.01
AS661016	Daqingmang	Junliangcheng, Tianjin	NW	28	120.20	36.03	166.48	18.86	1.32	23.47	1.09	9.65	12.28	135.51
AS661017	Hongmangbai	Jinghai, Tianjin	NW	66	117.52	36.72	164.89	19.32	1.41	25.75	1.09	10.16	12.31	143.73
AS661018	Baihulutou	Ninghe, Tianjin	NW	34	116.25	36.33	167.11	19.13	1.36	22.99	1.09	8.35	11.54	130.84
AS661019	Xiaobaimang	Wuyi, Hebei	Y&H	184	111.50	33.13	162.99	18.29	1.36	24.17	1.09	9.57	10.54	147.74
AS661021	Youzimai	Zaoqiang, Hebei	Y&H	42	115.07	33.38	165.53	19.34	1.49	24.04	1.09	8.3	12.12	135.02
AS661023	Wuhuatou	Xianxian, Hebei	Y&H	62	114.02	33.40	167.43	17.39	1.32	24.34	1.09	8.96	11.99	138.45
AS661024	Baipibai	Tangshan, Hebei	NW	217	111.50	33.30	164.26	21.91	1.41	24.47	1.09	7.75	13.57	131.01
AS661027	Xiaomaimang	Shulu, Hebei	Y&H	803	110.07	36.58	171.55	23.83	1.38	16.48	1.09	11.06	17.41	142.34
AS661028	Baimai39F	Zhengding, Hebei	NW	320	109.37	32.85	156.97	17.47	1.66	19.63	1.24	10.21	9.7	122.45
AS661030	Gongxianmai	Jinxian, Hebei	Y&H	800	109.50	35.25	166.8	20.64	1.32	22.45	1.09	9.49	12.05	139.94
AS661033	Yulinbai	Baixiang, Hebei	Y&H	445	129.00	42.55	161.09	17.97	1.34	18.65	1.09	7.15	11.34	115.8
AS661034	Daheshangtou	Handan, Hebei	Y&H	-	113.87	40.87	165.21	22.31	1.49	26.86	1.09	6.98	14.09	130.23
AS661035	Baikal	Anci, Hebei	NW	2100	103.25	36.75	167.43	19.55	1.39	22.58	1.09	8.26	11.34	141.09
AS661037	Dabaimai	Xingtang, Hebei	Y&H	2312	97.55	39.80	165.21	22.86	1.36	24.82	1.38	9.37	12.57	145.1
AS661038	Dabailing	Xinle, Hebei	Y&H	2835	102.27	35.10	165.53	21.32	1.38	24.93	1.09	10.03	14.19	146.35
AS661039	Zijingbai	Zhengding, Hebei	NW	3	120.63	31.15	164.26	18.93	1.39	27.99	1.09	8.6	11.76	145.04
AS661041	Xiaobaipi	Jinxian, Hebei	Y&H	5	120.27	31.55	163.94	22.48	1.36	26.1	1.09	9.93	12.54	146.66
AS661042	Liulengmai	Jinxian, Hebei	Y&H	6	119.80	31.37	167.75	21.79	1.32	24.06	1.09	9.9	13.77	141.51
AS661046	Dongguangtou	Tangshan, Hebei	NW	9	118.83	32.35	-	-	-	-	-	-	-	-
AS661053	Baiqingtinghong	Baoding, Hebei	NW	5	120.23	32.08	170.28	21.93	1.32	25.86	1.09	10.72	12.76	138.63
AS661054	Daqitou	Baoding, Hebei	NW	4	119.83	34.00	170.92	24.21	1.52	22.23	1.09	9.25	12.02	136.6
AS661056	Tutoubai	Zhuoxian, Hebei	NW	33	118.75	34.52	164.58	18.03	1.21	22.49	1.09	9.83	12.34	140.77
AS661062	Baixiaomai	Cangxian, Hebei	Y&H	4	121.38	31.62	175.04	23.3	1.41	24.17	1.09	10.01	14.15	148.04
AS661065	Dabaimang	Qingxian, Hebei	NW	9	120.13	30.18	166.8	19.79	1.43	24.45	1.09	9.79	12.2	144.92
AS661066	Chunqiumaizi	Qingxian, Hebei	NW	-	119.20	29.37	166.48	19.33	1.24	22.14	1.09	7.98	15.87	131.99
AS661067	Xiaohongmang	Qingxian, Hebei	NW	5	121.15	30.05	152.85	18.15	2.05	15.11	2.55	9.67	9.84	103.74
AS661069	Hongtutou	Mengcun, Hebei	Y&H	60	119.92	28.45	168.38	19.31	1.67	18.11	1.38	10.65	13.25	122.27
AS661071	Hongmangbai	Jiaohu, Hebei	Y&H	95	118.52	28.88	166.48	21.98	1.38	30.04	1.09	9.82	12.89	145.01
AS661072	Hongmangmai	Zaoqiang, Hebei	Y&H	151	120.07	28.65	168.06	21.42	1.45	20.04	1.09	10.28	13.89	147.77
AS661073	Baimangmai	Jixian, Hebei	Y&H	598	113.68	25.57	165.21	21.2	1.41	27.99	1.09	9.96	12.67	137.35
AS661074	Guchengxiaomai	Gucheng, Hebei	Y&H	4	113.20	23.37	165.85	22.53	1.3	27.45	1.09	10.3	11.89	146.82
AS661075	Gaochan1Hao	Ningjin, Hebei	Y&H	635	108.13	32.08	168.06	21.2	1.38	21.21	1.09	8.52	11.21	130.58
AS661076	Honghulubaimai	Xingtai, Hebei	Y&H	338	104.52	28.43	164.58	19.96	1.24	24.3	1.09	9.95	10.67	140.65
AS661078	Dahongmang	Xingtai, Hebei	Y&H	1788	102.25	26.67	162.99	20.02	1.23	24.82	1.09	9.72	13.36	141.58
AS661079	Baikelai	Ningjin, Hebei	Y&H	375	105.70	29.72	165.21	22.36	1.45	26.73	1.09	10.35	12.73	140.41
AS661080	Baihulutou	Guangzong, Hebei	Y&H	161	108.90	30.97	164.89	22.21	1.38	29.97	1.09	9.63	13.02	138.76
AS661081	Sumai	Xiaoyi, Shanxi	NW	293	106.28	30.35	161.41	19.51	1.52	22.3	1.67	12.09	11.15	134.24
AS661083	Heshangtou	Zuoquan, Shanxi	NW	310	105.07	29.58	164.58	23.88	1.47	22.89	1.09	9.7	12.72	124.7
AS661094	Dabaimai	Pingding, Shanxi	NW	667	107.88	28.52	172.82	20.63	1.36	14.82	1.09	8.86	15.02	130.64
AS661096	Tuxiaomai	Lingshi, Shanxi	NW	1450	105.22	24.20	167.11	20.5	1.24	23.49	1.09	8.67	15.12	139.31
AS661097	Xiaomangmai	Lishi, Shanxi	NW	140	127.42	46.12	166.48	21.96	1.41	23.65	1.09	8.03	11.86	147.01
AS661099	Dadongxiaomai	Fenyang, Shanxi	NW	15	119.38	25.72	162.68	19.76	1.34	25.3	1.09	9.36	12.22	147.8
AS661102	Baimangmai	Pingshun, Shanxi	NW	8	117.38	37.77	163.94	18.43	1.19	23.63	1.09	9	11.26	141.85
AS661103	Zhuganqing	Gaoping, Shanxi	NW	200	110.82	32.85	162.04	16.84	1.43	10.78	1.24	8.48	10.38	118.55
AS661104	Baimanghong	Gaoping, Shanxi	NW	-	114.28	29.88	167.43	20.91	1.38	24.15	1.09	9.61	13.96	131.89
AS661107	Baiguandong	Hongdong, Shanxi	NW	310	111.58	27.07	158.55	18.55	1.39	21.19	1.09	8.15	11.67	126.38
AS661108	Huolishao	Hongdong, Shanxi	NW	1025	105.62	25.95	164.89	18.38	1.21	25.15	1.09	8.31	12.47	141.29
AS661109	Mangmai	Hongdong, Shanxi	NW	1340	100.97	22.78	168.7	20.64	1.38	23.49	1.24	10.1	14.23	137.46
AS661110	Baixianmai	Anyi, Shanxi	NW	570	109.15	32.43	166.48	17.94	1.19	21.04	1.09	9.12	15.38	135.96
AS661111	Baimangmai	Wanrong, Shanxi	NW	423	108.78	34.60	163.31	20.89	1.32	24.15	1.38	9.18	10.38	136.06
AS661112	Youmangshangeda	Jieyu, Shanxi	NW	320	109.37	32.85	158.24	17.89	1.39	20.08	1.09	7.46	12.25	126.98
AS661114	Hongbi	Jieyu, Shanxi	NW	2100	103.25	36.75	161.41	20.3	1.41	24.36	1.09	10.11	9.99	134.71
AS661115	Yangzhongsanyuehuang	Linyi, Shanxi	NW	-	98.10	36.30	160.14	16.4	1.26	15.45	1.53	8.18	13.56	117.25
AS661116	Baishanmai	Linyi, Shanxi	NW	-	97.18	31.15	161.41	16.6	1.21	21.17	1.38	9.57	14.93	132.7
AS661117	Louguding	Jinan, Shandong	Y&H	-	91.95	27.98	160.14	14.21	1.34	18.06	1.53	9.7	8.99	117.59
AS661118	Qimai	Longkou, Shandong	Y&H	-	94.38	29.57	174.4	19.99	1.66	26.6	1.24	12.39	11.02	139.03
AS661119	Jinbaoyu	Yixian, Shandong	Y&H	-	91.37	29.67	168.06	17.32	1.32	26.06	1.09	10.09	13.44	147.83
AS661120	Banmangmai	Boshan, Shandong	Y&H	-	89.72	28.58	166.8	17.97	1.43	23.91	1.09	8.64	12.54	145.86
AS661122	Zijielumai	Jimo, Shandong	Y&H	-	87.07	28.62	168.06	18.82	1.39	24.84	1.09	9.16	10.52	146.33
AS661123	Bodongqing	Jimo, Shandong	Y&H	-	89.62	28.92	177.26	22.4	1.47	36.79	1.09	9.66	12.64	158.34
AS661124	Hongkangbai	Rongcheng, Shandong	Y&H	2255	100.85	27.30	175.99	24.6	1.34	23.41	1.09	10.15	14.22	146.45
AS661125	Biansui	Wendeng, Shandong	Y&H	-	91.78	29.22	176.94	22.49	1.38	31.36	1.09	10.97	13.47	145.65
AS661126	Hongmangxiaomai	Wendeng, Shandong	Y&H	-	91.67	29.05	167.11	17.9	1.54	22.84	1.09	9.66	11.02	148.58
AS661127	Baiguangtou	Mouping, Shandong	Y&H	30	121.03	36.78	176.94	22.34	1.39	28.41	1.09	9.87	13.18	140.47
AS661128	Laohongtuxiaomai	Haiyang, Shandong	Y&H	135	120.85	37.30	166.16	18.53	1.26	24.56	1.09	10.49	13.06	141.63
AS661129	Xiaogongxian	Qixia, Shandong	Y&H	-	-	-	175.04	22.36	1.32	26.91	1.09	8.89	18.11	144.91
AS661130	Hongmangmai	Weixian, Shandong	Y&H	-	-	-	164.58	20.69	1.47	27.1	1.09	9.04	13.54	148.87
AS661131	Xiaohongmang	Weixian, Shandong	Y&H	55	119.92	36.75	164.58	20.3						

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Accession No.	Landrace name	Origin	Geographic distribution [†]	Altitude (m)	East longitude (°)	Northern Latitude (°)	BLUP of 8 agronomic traits [‡]							
							FD	FLL	FLW	PDL	SH	SL	TN	PH
AS661201	Xiaofoshou	Jiyuan, Henan	Y&H	49	115.12	35.90	162.68	18.33	1.62	24.26	1.24	9.07	11.67	135.29
AS661202	Benyouzimai	Qingfeng, Henan	Y&H	400	113.38	34.53	161.09	16.36	1.32	18.82	1.38	8.2	8.94	125.17
AS661203	Baitiaoyu	Mixian, Henan	Y&H	49	115.80	34.45	161.72	18.52	1.54	29.25	1.09	10.83	12.18	141.88
AS661204	Benhulutou	Shangqiu, Henan	Y&H	62	115.13	34.65	165.53	16.37	1.39	21	1.09	8.44	11.49	128.5
AS661205	Wuhuatou	Minquan, Henan	Y&H	24	115.75	37.50	165.85	17.81	1.41	24.8	1.09	9.51	11.15	143.78
AS661206	Baimangbai	Shenqiu, Henan	Y&H	45	114.85	33.72	161.41	18.4	1.66	21.82	1.24	7.61	11.57	139.92
AS661207	Tutoumai	Huaiyang, Henan	Y&H	268	112.43	34.65	162.04	19.53	1.3	29.93	1.09	8.98	11.54	147.28
AS661208	Laochushanbao	Luoyang, Henan	Y&H	406	110.87	34.52	164.89	17.41	1.75	22.36	1.09	9.04	12.41	148.16
AS661209	Lingbao925	Lingbao, Henan	Y&H	397	111.18	34.77	162.68	18.66	1.45	26.69	1.09	8.68	11.15	141.26
AS661210	Gedatou	Shanxian, Henan	Y&H	397	111.18	34.77	162.36	18.8	1.54	20.69	1.09	9.28	10.76	135.95
AS661211	Sanyuehuang	Shanxian, Henan	Y&H	249	112.15	34.72	159.51	16.98	1.1	22.95	1.09	8.52	12.67	137.89
AS661212	Gedasuihongmai	Xinan, Henan	Y&H	95	114.05	32.80	162.99	17.67	1.54	21.15	1.09	7.51	9.73	130.1
AS661215	Baimai	Queshan, Henan	Y&H	95	114.05	32.80	163.31	23.43	1.43	28.1	1.09	9.5	17.82	128.01
AS661216	Baimangcao	Queshan, Henan	Y&H	65	114.02	33.15	161.72	19	1.3	24.21	1.09	10.09	12.75	148.4
AS661217	Dalihong	Suiping, Henan	Y&H	13	116.12	38.18	162.68	17.93	1.38	25.47	1.09	10.42	12.73	152.84
AS661219	Hongmanghong	Xiping, Henan	Y&H	73	114.27	33.27	166.16	20.93	1.34	26.36	1.24	10.02	14.48	149.46
AS661220	Youzitou	Shangcai, Henan	Y&H	73	114.27	33.27	165.21	18.55	1.54	23.15	1.24	7.42	11.21	146.42
AS661221	Zihuatou	Shangcai, Henan	Y&H	49	114.35	33.00	164.58	19.51	1.51	26.69	1.24	9.77	14.48	139.72
AS661222	Benmai	Runan, Henan	Y&H	46	114.98	32.73	162.68	17.45	1.26	25.8	1.09	9.97	14.77	151.48
AS661223	Baisuibai	Pingyu, Henan	Y&H	158	113.00	33.27	166.48	17.78	1.32	24.06	1.09	9.4	13.15	144.18
AS661224	Qumangmai	Fangcheng, Henan	Y&H	158	113.00	33.27	167.11	18.83	1.58	21.82	1.09	11.87	11.02	145.32
AS661225	Dongmangmai	Fangcheng, Henan	Y&H	92	112.40	32.52	156.97	17.36	1.43	18.52	1.09	10.6	11.44	134.47
AS661226	Xiaobaimai	Xinye, Henan	YTS	92	112.40	32.52	162.04	18.93	1.36	25.28	1.09	10.37	12.7	144.69
AS661227	Liangganbai	Xinye, Henan	YTS	184	111.50	33.13	168.7	20.51	1.47	18.5	1.24	11.59	13.8	143.41
AS661228	Zaobanyue	Xichuan, Henan	Y&H	50	118.15	39.70	156.02	18.18	1.62	27.12	1.97	10.15	10.18	144.6
AS661229	Baicantiao	Xixia, Henan	Y&H	170	111.85	33.05	161.09	15.3	1.45	26.78	1.38	9.26	10.76	136.34
AS661230	Zhuaziya	Neixiang, Henan	Y&H	170	111.85	33.05	164.58	15.8	1.54	25.82	1.38	10.72	11.47	155.07
AS661231	Baiheshangtou	Neixiang, Henan	Y&H	170	111.85	33.05	158.87	18.29	1.3	25.89	1.09	11.51	10.21	146.12
AS661232	Hongquanmang	Neixiang, Henan	Y&H	170	111.85	33.05	165.53	20.29	1.77	21.58	1.09	10.69	11.28	153.08
AS661233	Yerenmao	Neixiang, Henan	Y&H	77	114.07	32.12	161.72	21.99	1.64	26.62	1.67	11.08	9.67	147.05
AS661234	Xiaozihong	Xinyang, Henan	Y&H	52	115.68	32.18	165.85	20.45	1.52	21.13	1.09	10.37	14.57	141.2
AS661236	Hongmangcao	Gushi, Henan	YTS	52	115.68	32.18	162.68	16.63	1.26	28.97	1.09	11.13	12.12	152.07
AS661237	Huomai	Gushi, Henan	YTS	147	113.32	32.72	162.99	19.16	1.49	26.1	1.09	11.03	12.76	156.4
AS661239	Baihuomai	Miyang, Henan	Y&H	861	110.17	37.77	155.7	18.41	1.6	26.84	1.97	10.03	10.63	143.54
AS661241	Changmangbaike	Mizhi, Shanxi	NW	que	115.22	37.92	159.82	22.66	1.77	21.97	2.4	11.99	10.25	128.78
AS661243	Shihuiyaoahuomai	Yanchang, Shanxi	NW	1068	109.32	36.88	175.67	21.35	1.39	25.08	1.09	10.31	14.8	142.81
AS661244	Baitumai	Ansai, Shanxi	NW	1284	108.17	36.93	169.97	21.41	1.3	25.54	1.09	10.66	15.02	144.24
AS661246	Laomai	Wuqi, Shanxi	NW	571	110.57	34.55	162.36	18.46	1.47	19.56	1.38	8.98	11.99	139.97
AS661249	Baimazhamai	Tongguan, Shanxi	NW	500	109.58	34.95	162.36	17.62	1.36	21.69	1.09	8.7	11.83	143.66
AS661250	Siqiangxiaomai	Pucheng, Shanxi	NW	450	109.17	34.75	163.63	17.33	1.49	22.91	1.24	7.98	11.44	141.61
AS661251	Nvdonghong	Fuping, Shanxi	NW	570	110.30	33.67	162.04	18.55	1.23	23.93	1.24	9.15	14.25	144.15
AS661252	Dapushanba	Danfeng, Shanxi	Y&H	705	109.95	33.92	162.68	14.76	1.64	21.71	1.24	9.82	11.89	151.81
AS661253	Liulengmai	Luonan, Shanxi	Y&H	705	109.95	33.92	175.67	22.6	1.49	21.54	1.09	11.46	12.86	147.87
AS661254	Daqimai	Shangxian, Shanxi	Y&H	960	106.52	33.92	162.68	17.17	1.6	21.69	1.24	8.27	10.99	146.17
AS661256	Gouweibabaimai	Fengxian, Shanxi	Y&H	70	114.58	38.15	174.72	24.72	1.49	22.65	1.09	12.51	15.22	137.68
AS661257	Lengshanmai	Xunyang, Shanxi	SWAS	537	106.93	33.00	166.16	21.81	1.58	15.41	1.09	11.49	11.51	150.53
AS661258	Yudongmai	Nanzheng, Shanxi	Y&H	500	109.58	34.95	163.94	16.72	1.54	19.54	1.24	11.1	11.99	150.35
AS661259	Laobaitiaozai	Pucheng, Shanxi	NW	que	108.83	34.25	157.6	19.14	1.26	25.04	1.67	10.17	12.57	146.35
AS661260	Yangmai	Xian, Shanxi	NW	773	110.08	36.87	159.82	18.7	1.62	23.06	1.09	10.04	13.38	137.11
AS661262	Huangwumanglaomai	Yanchuan, Shanxi	NW	830	109.27	35.58	162.99	19.21	1.38	22.95	1.09	10.33	11.99	144.02
AS661263	Sichuanbai	Huangling, Shanxi	NW	830	109.27	35.58	166.8	17.77	1.24	21.41	1.09	7.93	15.41	131.53
AS661264	Siyuehuang	Huangling, Shanxi	NW	1198	107.80	35.22	167.43	20	1.26	26.47	1.09	9.18	13.09	140.78
AS661265	Wuzimai	Changwu, Shanxi	NW	423	108.78	34.60	162.36	18.22	1.21	17.13	1.09	8.02	11.12	141.65
AS661266	Donghuangmai	Sanyuan, Shanxi	NW	358	109.77	34.52	163.63	16.68	1.1	21.63	1.09	7.91	13.57	135.22
AS661267	Baitiaomai	Huaxian, Shanxi	NW	44	115.03	38.03	159.82	15.99	1.17	21.65	1.09	8.46	13.28	143.24
AS661268	Honglanmai	Baishui, Shanxi	NW	690	109.92	35.18	162.36	16.83	1.32	23.41	1.38	8.36	12.22	148.15
AS661270	Laotiaozimai	Chengcheng, Shanxi	NW	131	126.10	47.60	162.99	17.3	1.23	19.89	1.09	8.08	10.96	134.98
AS661274	Yangbaimai	Baiquan, Heilongjiang	NES	225	125.22	49.17	169.65	24.47	1.8	17.8	2.26	12.76	11.76	131.92
AS661275	Guangtou	Nenjiang, Heilongjiang	NES	280	130.28	45.30	166.8	23.92	1.52	33.71	2.26	13.57	12.67	157.73
AS661277	Changsuibaimai	Linkou, Heilongjiang	NES	154	124.83	47.18	166.8	21.74	1.49	28.41	1.97	13.24	14.25	146.5
AS661278	Yangmai	Lalin, Heilongjiang	NES	66	131.98	47.25	174.4	23.19	1.49	27.56	1.97	14	14.48	151.41
AS661279	Youmangbaifu	Fujin, Heilongjiang	NES	120	128.83	45.83	168.06	24.88	1.79	26.21	2.26	14.38	11.86	147.45
AS661280	Fangzhengbendimai	Fangzheng, Heilongjiang	NES	164	126.60	46.00	158.55	14.8	1.71	13.91	1.82	11.67	11.46	107.33
AS661281	Xiaohongmang	Hulan, Heilongjiang	NES	360	128.92	43.12	161.72	18.49	1.43	18.58	1.09	9.76	11.8	135.74
AS661282	Zaoyangmai	Antu, Jilin	NES	35	114.67	37.48	156.97	25.12	1.6	28.65	2.26	13.08	11.8	137.76
AS661283	Daqingmang	Helong, Jilin	NES	218	126.47	43.95	170.28	18.37	1.26	23.34	1.09	10.26	13.09	137.39
AS661284	Xuemai	Jilin	NES	-	121.23	38.82	164.26	21.14	1.3	27.52	1.09	9.39	10.21	148.23
AS661286	Dabaili	Lvda, Liaoning	NW	36	121.95	39.40	160.77	23.83	1.75	26.02	2.4	12.63	13.41	139.41
AS661287	Xinjinyoumang	Xinjin, Liaoning	NW	-	121.70	39.08	166.48	19.71	1.3	23.17	1.09	10.04	14.02	144.58
AS661289	Xiaoyehongmai	Liaodong	NW	-	111.42	41.12	164.58	19.37	1.41	21.41	1.09	9.44	13.8	137.03
AS661290	Shishoumai	Wuchuan, Neimenggu	NS	-	113.15	41.03	164.26	21.25	1.51	17.69	2.4	11.67	15.28	135.36
AS661293	Dahongpao	Jining, Neimenggu	NS	-	113.15	41.03	163.94	20.16	1.49	16.78	2.26	11.71	11.91	138.67
AS661295	Mangmai	Jining, Neimenggu	NS	-	113.17	40.45	162.04	18.55	1.49	18.41	2.26	12.17	11.21	142.81
AS661297	Xiaoriqixiaomai	Fengzhen, Neimenggugu	NS	-	113.17	40.45	158.55	20.87	1.38	21.41	2.84	11.95	9.63	132.77
AS661298	Dahongpao	Fengzhen, Neimenggugu	NS	65	116.22	40.22	166.16	21.53	1.67	19.43	2.26	11.47	11.41	140.79
AS661302	Xiaohongmai	Saxian, Neimenggu	NS	-	113.87	40.87	172.19	20.77	1.77	17.15	2.26	12.29	11.73	143.04
AS661303	Baimangmai	Saxian, Neimenggu	NS	-	111.12	40.75	149.68	18.58	1.38	24.28	2.84	10.27	11.7	125.1
AS661305	Dahongmai	Huhehaoteshi, Neimenggugu	NS	-	106.95	40.33	166.48	20.78	1.51	22.17	1.67	11.98	14.06	144.91
AS661306	Xiaobaisui	Dengkou, Neimenggugu	NS	1877	104.47	34.85	164.89	21.98	1.56	24.34	2.26	12.85	12.54	140.4
AS661310	Lvjiankou	Zhangxian, Gansu	NWS	2315	104.02	34.43	162.99	18.68	1.47	20.45	2.26	11.92	11.25</	

Supplemental Table S1 Information of the 707 wheat accessions assessed in the present study.

Accession No.	Landrace name	Origin	Geographic distribution [†]	Altitude (m)	East longitude (°)	Northern Latitude (°)	BLUP of 8 agronomic traits [‡]							
							FD	FLL	FLW	PDL	SH	SL	TN	PH
AS661398	Guangdezao	Liyang, Jiangsu	YTS	8	119.58	31.98	156.02	17.89	1.43	28.36	1.24	11.8	11.02	149.4
AS661400	Luogengqing	Danyang, Jiangsu	YTS	8	119.58	31.98	163.63	20.6	1.39	28.78	1.53	11.37	11.57	154.76
AS661401	Balangtou	Danyang, Jiangsu	YTS	8	119.58	31.98	157.6	18.98	1.51	30.43	1.82	10.68	12.28	153.27
AS661402	Zaobaimangmai	Danyang, Jiangsu	YTS	4	119.40	32.20	158.55	18.3	1.49	25.1	1.82	12.66	11.21	156.4
AS661404	Chixiaomai	Zhenjiang, Jiangsu	YTS	4	119.82	32.27	160.46	22.73	1.54	34.51	2.11	13.48	10.67	157.1
AS661405	Yanglazi	Yangzhong, Jiangsu	YTS	4	119.82	32.27	163.63	18.91	1.51	24.32	2.11	10.28	10.21	145.74
AS661406	Hongxiaomai	Yangzhong, Jiangsu	YTS	8	118.63	32.05	158.55	19.88	1.45	26.71	1.53	12.04	10.76	155.21
AS661408	Ziganzi	Jiangpu, Jiangsu	YTS	50	118.15	39.70	161.72	21.52	1.67	25.19	1.67	8.91	11.47	147.11
AS661409	Xiaohongtou	Liuhu, Jiangsu	YTS	2	121.65	31.80	161.41	18.03	1.39	28.56	1.38	10.9	9.47	145.63
AS661411	Changqibaikae	Qidong, Jiangsu	YTS	4	121.15	31.83	159.51	18.16	1.32	29.01	1.67	11.2	11.31	151.31
AS661412	Luopangtou	Haimen, Jiangsu	YTS	2	120.85	32.02	159.82	19.1	1.58	26.71	1.53	9.19	12.44	140.44
AS661413	Youmangsilengtou	Nantong, Jiangsu	YTS	2	120.85	32.02	160.14	19.75	1.3	28.51	1.67	11.62	11.8	157.02
AS661414	Daoshuibai	Nantong, Jiangsu	YTS	2	120.85	32.02	157.92	18.6	1.47	27.02	1.97	11.78	9.96	154.09
AS661415	Changsuibaikae	Nantong, Jiangsu	YTS	2	120.85	32.02	159.19	20.09	1.79	25.17	2.26	8.84	11.02	141.5
AS661416	Baichaoyu	Nantong, Jiangsu	YTS	2	120.85	32.02	157.92	17.68	1.39	26.23	1.53	10.4	10.54	138.58
AS661417	Hongkechangmang	Nantong, Jiangsu	YTS	2	120.85	32.02	161.41	20.47	1.43	25.15	1.38	12.35	11.83	150.64
AS661418	Baijiaozai	Nantong, Jiangsu	YTS	4	121.18	32.18	165.21	21.28	1.49	26.65	1.67	11.46	15.19	154.45
AS661419	Zaowutian	Rudong, Jiangsu	YTS	35	115.52	38.85	157.92	18.71	1.66	25.91	2.26	9.27	11.15	143.08
AS661420	Caizhuang	Jingjiang, Jiangsu	YTS	5	119.17	32.28	162.04	21.67	1.84	20.82	1.97	9.96	11.6	146.37
AS661421	Qingmangzi	Yizheng, Jiangsu	YTS	6	119.43	32.40	157.29	18.78	1.51	24.65	1.97	13.49	12.22	160.41
AS661423	Huaqixiaomai	Hanjiang, Jiangsu	YTS	6	119.43	32.40	153.48	21.73	2.01	27.8	1.67	13.32	9.44	149.56
AS661425	Manguazi	Hanjiang, Jiangsu	YTS	4	119.87	32.97	159.82	18.79	1.62	23.95	1.97	8.96	10.63	143.8
AS661426	Dahuangpi	Xinghua, Jiangsu	YTS	5	119.42	32.78	159.51	17.5	1.45	29.58	1.82	10.58	10.28	152.3
AS661427	Wumangmai	Gaoyou, Jiangsu	YTS	5	119.42	32.78	159.51	19.09	1.34	28.97	1.82	11.47	11.15	152.51
AS661428	Baimangzi	Gaoyou, Jiangsu	YTS	6	119.30	33.23	155.07	19.54	1.86	26.17	1.53	12.36	10.96	147.46
AS661430	Dahongpi	Baoying, Jiangsu	YTS	5	120.45	33.20	163.31	17.96	1.26	25.25	1.09	8.41	11.54	147.05
AS661431	Meixiuhuang	Dafeng, Jiangsu	YTS	2	119.80	33.47	155.38	20.24	1.95	27.47	1.67	13.03	10.7	155.62
AS661434	Yuhuazi	Jianhu, Jiangsu	YTS	35	115.52	38.85	163.31	17.41	1.43	26.97	1.24	9.82	11.05	147.11
AS661435	Zuantoubaikae	Binhai, Jiangsu	Y&H	33	118.75	34.52	160.46	18.71	1.41	28.93	1.09	10.04	11.93	151.19
AS661436	Hongmai	Donghai, Jiangsu	Y&H	35	116.85	34.73	157.92	16.66	1.1	22.19	1.24	9.5	12.38	148.63
AS661439	Sanyuehuang	Peixian, Jiangsu	Y&H	35	116.85	34.73	162.04	19.04	1.34	26.45	1.09	9.55	13.31	144.08
AS661440	Xiaoli hong	Peixian, Jiangsu	Y&H	35	116.85	34.73	163.31	18.23	1.36	27.88	1.09	9.11	13.64	150.52
AS661441	Youzimai	Peixian, Jiangsu	Y&H	58	117.22	34.23	162.36	17.56	1.52	29.78	1.82	8.91	10.52	137.14
AS661442	Tutoumai(Jia)	Tongshan, Jiangsu	Y&H	58	117.22	34.23	167.75	18.33	1.66	23.02	1.09	10.01	14.57	148.78
AS661443	Baiyouzi	Tongshan, Jiangsu	Y&H	58	117.22	34.23	163.31	17.23	1.3	22.93	1.09	7.39	10.54	140.13
AS661444	Baisuibai	Tongshan, Jiangsu	Y&H	21	117.75	33.90	161.72	19.99	1.49	21.8	1.97	10.08	10.31	130.94
AS661445	Baisui hong	Suining, Jiangsu	YTS	22	117.95	34.30	156.97	18.44	1.32	24.65	1.09	9.81	10.15	130.32
AS661446	Hongshimai	Pixian, Jiangsu	Y&H	46	116.28	39.98	161.09	19.39	1.71	30.21	1.82	9.64	11.44	149.95
AS661447	Xiaohongmai	Donghai, Jiangsu	Y&H	15	118.72	33.70	162.36	18.6	1.28	21.28	1.24	9.05	12.67	144.9
AS661448	Xiaoyuhua	Siyang, Jiangsu	YTS	4	119.25	34.38	164.58	18.08	1.3	25.52	1.09	10.25	12.34	147.69
AS661449	Daliuleng	Guanyun, Jiangsu	Y&H	4	119.25	34.38	164.89	18.86	1.43	25.32	1.24	9.11	11.86	144.84
AS661450	Dayangxiaomai	Guanyun, Jiangsu	Y&H	10	119.07	33.67	163.94	23.66	2.14	32.93	2.26	14.33	11.54	154.91
AS661451	Baiheshangtou	Huaiyin, Jiangsu	YTS	7	119.17	33.53	162.36	19.02	1.41	29.71	1.09	12.97	11.99	159.98
AS661452	Shunshui hong	Huaian, Jiangsu	YTS	7	119.27	33.78	153.8	19.32	1.38	25.54	1.53	11.39	12.02	139.31
AS661453	Xiaoyuhua	Lianshui, Jiangsu	YTS	4	121.23	31.00	163.94	19.64	1.3	21.5	1.09	10.52	12.34	146.92
AS661454	Putao mai	Songjiang, Shanghai	YTS	4	121.12	31.15	161.41	18.27	1.51	20.63	1.97	7.59	10.8	138.06
AS661455	Baijiaomai	Qingpu, Shanghai	YTS	5	121.25	31.38	161.09	18.31	1.64	26.25	1.82	9.43	13.23	150.15
AS661458	Zhangsi hong	Jiading, Shanghai	YTS	10	116.92	38.33	157.6	18.02	1.66	23.76	1.82	10.47	10.67	152.68
AS661459	Waiguoyazuitou	Chongming, Shanghai	YTS	160	118.58	30.08	156.97	21.14	1.73	26.36	2.11	9.16	9.81	142.01
AS661460	Huxumai	Jixi, Anhui	YTS	193	118.53	30.28	159.82	19.74	1.47	22.21	1.82	9.29	10.31	138.22
AS661461	Wugongmai	Jingde, Anhui	YTS	23	116.68	30.13	160.46	21.39	1.52	23.78	2.26	9.4	10.31	133.35
AS661462	Jiangxizao	Wangjiang, Anhui	YTS	39	116.28	30.43	158.87	20.82	1.41	34.01	1.09	14.63	10.67	171.75
AS661463	Wugongbian	Taihu, Anhui	YTS	14	117.85	30.65	156.02	20.7	1.66	26.45	1.67	12.42	10.68	142.94
AS661465	Heshangtou	Qingyang, Anhui	YTS	10	118.37	31.72	163.31	19.13	1.62	23.1	2.11	10.69	12.38	147.12
AS661469	Daheshangtou	Hexian, Anhui	YTS	26	117.55	33.53	158.55	19.7	1.52	28.32	1.97	9.88	9.47	159.63
AS661470	Hongmai	Lingbi, Anhui	YTS	38	115.35	33.27	156.02	21.44	1.38	30.14	1.53	11.38	13.28	153.3
AS661472	Feixisanyuehuang	Jieshou, Anhui	YTS	7	116.83	38.58	159.51	20.59	1.49	21.47	1.24	10.44	10.05	149.6
AS661473	Dongjiaqiaoxiaomai	Hangzhou, Zhejiang	YTS	9	120.13	30.18	153.17	24.72	1.71	34.56	2.84	14.45	10.44	147.88
AS661474	Shangbaosanyuehuang	Hangzhou, Zhejiang	YTS	9	120.13	30.18	156.97	21.01	1.66	27.32	1.82	11.03	9.57	136.34
AS661475	Shangsasongputou	Hangzhou, Zhejiang	YTS	9	120.13	30.18	162.04	19.25	1.58	26.95	2.26	9.35	10.92	149.33
AS661476	Linpingyangmai	Hangzhou, Zhejiang	YTS	7	120.28	30.42	159.82	21.78	1.51	26.15	1.97	12.23	11.86	156.36
AS661477	Baixu	Chongde, Zhejiang	YTS	7	119.93	30.05	161.72	21.73	1.73	23.95	2.26	8.38	9.99	146.62
AS661478	Hongkema gongzhong	Fuyang, Zhejiang	YTS	7	119.93	30.05	155.38	23.08	1.77	25.71	2.11	11.28	10.76	135.91
AS661479	Baikeguangtou	Fuyang, Zhejiang	YTS	7	119.93	30.05	156.65	19.85	1.6	27.15	2.11	11.35	10.44	155.37
AS661480	Honglizitou	Fuyang, Zhejiang	YTS	7	119.93	30.05	159.19	20.61	1.62	24.91	1.97	10.82	11.12	145.31
AS661481	Xumai	Fuyang, Zhejiang	YTS	7	119.93	30.05	160.46	19.43	1.64	27.19	1.82	8.83	12.04	135.66
AS661482	Huoshao mai	Fuyang, Zhejiang	YTS	7	116.83	38.58	160.77	20.59	1.58	24.3	1.97	8.01	10.34	138.21
AS661483	Hongkewugong	Shouchang, Zhejiang	YTS	-	119.42	30.18	161.72	18.75	1.58	22.89	2.11	10.21	12.78	159.22
AS661484	Guangmai	Yucian, Zhejiang	YTS	-	119.42	30.18	159.19	17.56	1.84	24.78	1.97	9.37	10.15	135.61
AS661485	Fangpu	Xiaofeng, Zhejiang	YTS	25	119.68	29.82	158.55	20.77	1.99	25.28	1.82	8.81	12.67	144.08
AS661488	Tiedingmai	Tonglu, Zhejiang	YTS	112	119.03	29.62	159.82	19.95	1.56	26.3	1.97	11.6	11.47	151.66
AS661490	Liulengmaomai	Chunan, Zhejiang	YTS	-	120.10	30.87	159.51	18.8	1.75	21.97	2.11	9.37	9.92	138.14
AS661492	Puzhumai	Wuxing, Zhejiang	YTS	3	122.10	30.02	161.72	21.19	1.64	20.87	2.11	6.9	13.22	136.4
AS661493	Baixuxiaomai	Dinghai, Zhejiang	YTS	2	122.22	30.23	164.26	21.38	1.52	24.76	1.97	13.72	10.83	148.53
AS661494	Wumangmai	Daishan, Zhejiang	YTS	5	121.87	29.48	161.72	17.57	1.49	22.41	1.53	12.16	9.31	146.36
AS661495	Maofangtou	Xiangshan, Zhejiang	YTS	5	121.87	29.48	159.19	23.4	1.79	24.93	2.11	10.88	10.76	147.6
AS661496	Huashupu	Xiangshan, Zhejiang	YTS	7	116.83	38.58	161.09	21.22	1.66	25.06	2.11	9.1	11.02	144.54
AS661497	Baitengkousui	Yuyao, Zhejiang	YTS	5	121.15	30.05	159.82	20.11	1.82	24.56	2.4	12.56	9.7	150.15
AS661498	Tiezuantou	Yuyao, Zhejiang	YTS	5	121.15	30.05	159.82	18.29	1.43	22.02	2.11	11.31	11.05	141.02
AS661499	Guangtoumai	Yuyao, Zhejiang	YTS	6	120.58	30.00	162.04	19.23	1.45	23.73	2.26	9.36	12.83	150.2
AS661500	Laolaibai	Shaoxing, Zhejiang	YTS	6	120.58	30.00	166.8	22.28	1.66	25.12				

Supplemental Table S1 Information of the 707 wheat accessions assessed in the present study.

Accession No.	Landrace name	Origin	Geographic distribution [†]	Altitude (m)	East longitude (°)	Northern Latitude (°)	BLUP of 8 agronomic traits [‡]							
							FD	FLL	FLW	PDL	SH	SL	TN	PH
AS661562	Baikexiaomai	Lufeng, Guangdong	SAS	80	116.68	24.35	148.73	23.98	1.94	25.8	2.69	11.19	11.31	129.79
AS661563	Zaoxiaomai	Dapu, Guangdong	SAS	10	116.17	23.30	152.85	19.69	1.82	27.17	2.84	10.73	10.44	135.54
AS661564	Puningxiaomai	Puning, Guangdong	SAS	10	116.17	23.30	160.46	20.37	1.71	25.47	1.24	12.15	11.15	153.05
AS661565	Wuxuxiaomai	Puning, Guangdong	SAS	49	109.62	23.12	152.85	22.85	1.69	27.8	2.11	12.65	13.18	146.06
AS661566	Zhangmuxiaomai	Guixian, Guangxi	SAS	4352	110.08	23.40	151.9	23.13	1.73	27.62	2.84	10.92	10.54	137.64
AS661567	Guipingxiaomai	Guiping, Guangxi	SAS	103	110.63	24.63	155.38	22.43	1.88	29.1	2.26	12.43	11.31	144.14
AS661569	Guangtoumai	Pingle, Guangxi	SAS	373	106.77	31.85	160.77	20.02	1.56	25.02	1.53	10.15	10.76	142.19
AS661571	Sanyuehuang	Bazhong, Sichuan	SWAS	453	107.85	31.08	157.6	21.83	1.66	25.34	1.97	10.3	11.83	134.66
AS661573	Baimaizi	Kaijiang, Sichuan	SWAS	24	116.65	39.90	160.77	23.48	1.8	29.6	2.26	11.33	10.73	153.34
AS661574	Honghuamaizhong	Wanyuan, Sichuan	SWAS	255	106.97	30.25	160.46	21.38	1.79	24.47	2.26	9.14	11.09	142.36
AS661575	Guangtoumai	Quxian, Sichuan	SWAS	287	104.62	28.77	159.51	23.25	1.86	22.45	2.11	10.13	11.73	143.39
AS661580	Dongxumai	Yibin, Sichuan	SWAS	287	104.62	28.77	161.09	23	2.12	27.23	2.26	9.8	12.05	152.04
AS661581	Zhudongmai	Yibin, Sichuan	SWAS	287	104.62	28.77	160.46	23.42	1.86	25.08	1.67	9.57	11.18	145.11
AS661582	Wuyangmai	Yibin, Sichuan	SWAS	276	104.92	28.58	155.7	27.05	1.88	26.71	1.97	11.44	10.99	131.49
AS661583	Huangmaizi	Changning, Sichuan	SWAS	245	105.45	28.90	156.65	21.15	1.92	22.3	2.26	10.21	10.44	139.76
AS661584	Yuzuiweimai	Luxian, Sichuan	SWAS	245	105.45	28.90	161.41	18.78	1.71	21.17	1.82	8.46	12.31	139.72
AS661585	Dahuangmai	Luxian, Sichuan	SWAS	245	105.45	28.90	160.46	22.61	1.67	26.39	2.26	9.63	13.3	140.32
AS661586	Youtiaomai	Luxian, Sichuan	SWAS	259	105.07	28.73	160.14	23.48	1.69	28.82	2.26	10.16	12.64	143.38
AS661587	Dahonghua	Jiangan, Sichuan	SWAS	27	114.37	37.35	156.34	21.29	1.66	21.06	2.26	10.94	11.47	134.61
AS661588	Nanximai	Gaoxian, Sichuan	SWAS	338	104.52	28.43	158.24	22.13	1.6	26.65	1.53	10.95	12.18	140.79
AS661589	Guangtoumai	Gaoxian, Sichuan	SWAS	338	104.52	28.43	156.97	21.67	1.52	23.86	1.97	9.77	12.52	134.5
AS661590	Dongmaidong	Qingfu, Sichuan	SWAS	425	104.50	28.17	162.04	23.09	1.58	24.58	2.26	7.77	12.86	135.31
AS661592	Zaohonghua	Yunlian, Sichuan	SWAS	237	105.37	28.77	156.65	24.85	1.6	21.6	1.97	10.74	11.12	141.63
AS661593	Zaohuangmai	Naxi, Sichuan	SWAS	226	105.83	28.80	154.12	22.25	1.64	26.32	2.55	10.18	11.02	141.46
AS661594	Yizaixiaomai	Hejiang, Sichuan	SWAS	431	105.02	30.27	157.6	20.22	1.67	26.73	2.11	10.11	10.57	142.71
AS661596	Hongtiaomai	Leyu, Sichuan	SWAS	322	104.65	29.52	158.55	22.2	1.54	23.91	1.97	10.36	12.44	138.64
AS661597	Guangtou	Weiyuan, Sichuan	SWAS	414	103.83	30.05	152.21	21.67	1.54	25.71	2.11	9.81	10.63	126.71
AS661598	Guangtoumai	Meishan, Sichuan	SWAS	1384	102.18	27.42	155.38	23.21	1.75	24.6	2.26	10.83	12.31	129.81
AS661599	Yupi	Dechang, Sichuan	SWAS	27	114.37	37.35	148.41	24.73	2.01	17.82	2.26	10.83	8.12	103.89
AS661600	Baimai	Huili, Sichuan	SWAS	233	106.63	30.47	156.65	20.82	1.82	29.23	2.11	8.73	12.12	140.03
AS661602	Hongxumai	Guangan, Sichuan	SWAS	575	106.40	31.52	161.41	18.27	1.45	18.43	1.82	9.22	10.12	130.4
AS661604	Doumai	Yilong, Sichuan	SWAS	530	104.73	31.78	155.38	19.95	1.67	23.99	2.11	9.65	11.67	146.42
AS661605	Lushanmai	Jiangyou, Sichuan	SWAS	475	105.15	31.65	161.09	21.95	1.66	27.65	2.11	10.9	10.86	142.69
AS661606	Langmai	Zitong, Sichuan	SWAS	478	105.58	30.50	164.58	22.72	1.73	22	2.11	11.23	13.47	143.22
AS661609	Tuotoumai	Suining, Sichuan	SWAS	395	105.70	30.77	156.65	25.37	1.73	19.73	1.97	10.48	11.38	138.45
AS661610	Honghuaguangrou	Pengxi, Sichuan	SWAS	330	105.55	30.85	159.19	23.17	1.88	26.19	2.11	9.34	11.44	136.49
AS661611	Wulangxiexiaomai	Shehong, Sichuan	SWAS	430	104.67	31.03	156.34	22.95	1.8	24.86	2.26	10.53	10.28	136.99
AS661612	Changxuxiaomai	Zhongjiang, Sichuan	SWAS	378	105.08	31.08	156.97	21.92	1.67	21.76	1.82	11.97	11.21	135.1
AS661613	Qingquanxiaomai	Santai, Sichuan	SWAS	32	114.93	37.60	148.73	26.02	1.99	27.71	2.84	12.83	10.05	125.84
AS661615	Yuweimai	Dazu, Sichuan	SWAS	218	106.25	30.00	160.14	24.27	1.54	22.19	2.26	11.01	13.09	145.87
AS661616	Hechuanmai	Hechuan, Sichuan	SWAS	494	103.92	30.57	156.02	23.38	1.62	30.67	2.4	11.3	10.38	145.97
AS661617	Huayangxiaomai	Shuangliu, Sichuan	SWAS	494	103.92	30.57	159.51	23.57	1.6	21.69	1.97	11.1	13.09	146.05
AS661618	Wumangmai	Shuangliu, Sichuan	SWAS	504	103.48	30.42	164.58	23.59	1.92	28.21	1.67	12.38	10.89	152.35
AS661619	Huanghuaxiaomai	Qionglai, Sichuan	SWAS	457	103.82	30.42	164.26	20.61	2.03	27.65	2.11	10.4	10.92	145.07
AS661620	Guangguangtou	Xinjin, Sichuan	SWAS	448	104.43	30.85	161.72	23.49	1.64	25.93	2.11	10.63	12.09	139.83
AS661621	Danaoke	Jintang, Sichuan	SWAS	150	107.70	29.85	160.77	19.16	1.66	22	1.82	10.49	10.8	146.67
AS661622	Yangmai	Fengdong, Sichuan	SWAS	664	108.77	28.83	162.36	23.74	1.64	22.82	2.26	12.27	11.99	145.5
AS661625	Hongkejiang	Youyang, Sichuan	SWAS	350	108.98	28.45	156.34	23.66	1.75	24.1	2.26	11.43	10.12	142.08
AS661626	Baikejiang	Xiushan, Sichuan	SWAS	30	115.13	37.05	164.58	24.41	1.47	30.1	1.38	13.21	11.6	152.98
AS661627	Bazhouxiaomai	Yunyang, Sichuan	SWAS	214	109.63	31.40	162.68	24.79	1.8	22.76	2.26	8.94	14.25	142.25
AS661629	Honghuamai	Wuxi, Sichuan	SWAS	209	106.45	29.83	162.04	24.84	1.88	25.69	2.26	11.56	11.12	143.7
AS661630	Chikezhuomai	Beibei, Sichuan	SWAS	209	106.45	29.83	162.36	21.4	1.47	24.02	1.82	8.72	11.63	139.67
AS661631	Beibeixiaomai	Beibei, Sichuan	SWAS	200	106.52	29.38	162.36	23.97	1.34	20.47	1.97	9.5	11.31	132.1
AS661633	Huoshaoмай	Baxian, Sichuan	SWAS	2450	101.97	30.05	160.46	23.49	1.52	26.99	1.97	9.62	10.7	137.49
AS661634	Hongmangmaizi	Yidong, Sichuan	Q&T	275	106.10	30.78	157.6	21.89	1.58	30.99	2.26	10.46	10.15	141.24
AS661636	Dongmai	Nanchong, Sichuan	SWAS	275	106.10	30.78	157.29	19.99	1.75	23.86	1.97	10.12	11.02	138.98
AS661637	Zaodongmai	Nanchong, Sichuan	SWAS	233	106.63	30.47	155.7	22.55	1.79	26.17	2.11	9.71	10.5	141.38
AS661639	Hongkekemaizi	Guangan, Sichuan	SWAS	320	106.42	31.03	159.82	24.17	1.52	22.63	1.97	7.76	10.1	130
AS661640	Heshangmai	Pengan, Sichuan	SWAS	761	111.77	37.13	158.55	19.77	1.43	23.13	1.53	9.25	9.76	136.16
AS661641	Hongpimai	Wusheng, Sichuan	SWAS	326	105.88	30.98	158.87	22.2	1.47	24.58	2.11	9.38	13.06	139.81
AS661642	Yicuomao	Xichong, Sichuan	SWAS	326	105.88	30.98	155.38	26.9	1.67	30.49	2.26	11.26	10.15	135.48
AS661643	Baixiaomai	Xichong, Sichuan	SWAS	363	105.97	31.58	160.14	25.3	1.84	30.91	1.82	10.46	9.47	139.25
AS661644	Fangmai	Langzhong, Sichuan	SWAS	363	105.97	31.58	153.17	20.18	1.84	21.67	2.4	8.98	13.59	127.6
AS661645	Baidongmai	Langzhong, Sichuan	SWAS	287	104.62	28.77	162.36	23.46	1.71	20.95	2.11	10.48	14.51	135.51
AS661647	Laolaihong	Yibin, Sichuan	SWAS	587	102.98	29.98	154.75	19.48	1.77	17.97	2.11	8.49	11.31	106.78
AS661648	Baihuamai	Yaan, Sichuan	SWAS	328	106.55	31.07	150.63	21.82	1.99	26.69	2.4	8.81	8.28	118.66
AS661652	Sanyuehuang	Yingshan, Sichuan	SWAS	424	104.13	30.00	161.72	21.05	1.71	24.69	1.53	10.85	11.38	145.65
AS661654	Honghuaxuxumai	Renshou, Sichuan	SWAS	328	103.80	29.18	156.65	18.57	1.64	19.89	1.97	9.57	8.99	118.52
AS661655	Baimaidong	Jianwei, Sichuan	SWAS	1120	113.37	37.07	154.75	20.21	1.88	32.08	1.53	13.14	9.44	151.24
AS661656	Hongkebaidongmai	Neijiang, Sichuan	SWAS	350	105.90	29.37	157.29	23.34	1.86	23.28	2.26	10.27	11.3	136.83
AS661657	Yuqiumai	Yongchuan, Sichuan	SWAS	453	107.80	30.68	157.29	19.34	1.66	26.99	1.82	8.93	10.54	149.22
AS661658	Baikexususanyuehuang	Liangping, Sichuan	SWAS	453	107.85	31.08	159.19	21.36	1.54	24.67	2.26	10.32	12.22	138.85
AS661661	Paidengmai	Kaijiang, Sichuan	SWAS	1368	105.47	25.12	154.12	18.92	1.73	18.82	2.11	10.85	11.57	114.22
AS661662	Yumai	Anlong, Guizhou	SWAS	1250	106.60	26.85	157.6	21.01	1.71	29.23	1.97	12.6	10.18	143.7
AS661663	Gaoganhongmai	Xiuwen, Guizhou	SWAS	1235	106.97	27.07	155.07	22.42	2.08	21.67	2.26	11.94	8.57	112.93
AS661664	Dahongmai	Kaiyang, Guizhou	SWAS	760	107.52	26.27	157.6	19.98	1.58	31.95	1.38	13.59	9.99	145.86
AS661665	Yuqiumai	Dongyun, Guizhou	SWAS	1085	106.98	26.45	160.14	19.69	1.69	32.01	1.38	13.49	9.73	149.97
AS661666	Xizhanmai	Longli, Guizhou	SWAS	667	107.88	28.52	159.51	20.41	1.73	27.97	1.67	12.74	10.34	149.56
AS661667	Caoxie pian	Wuchuan, Guizhou	SWAS	723	113.63	37.80	155.38	25.67	1.66	28.93	2.26	13.79	9.28	133.32
AS661668	Huimai	Wuchuan, Guizhou	SWAS	1240	104.90	25.08	149.36	26.51	2.08	14.71	2.4	11.99		

Supplemental Table S1 Information of the 707 wheat accessions assessed in the present study.

Accession No.	Landrace name	Origin	Geographic distribution [†]	Altitude (m)	East longitude (°)	Northern Latitude (°)	BLUP of 8 agronomic traits [‡]							
							FD	FLL	FLW	PDL	SH	SL	TN	PH
AS661738	Niqiuchuan	Yichang, Hubei	YTS	900	112.92	35.78	162.04	19.7	1.49	20.6	1.38	11.68	11.38	147.05
AS661739	Zhuganqing	Yunxian, Hubei	YTS	29	115.20	29.83	155.38	18.76	1.94	27.04	1.24	12.61	10.44	155.19
AS661740	Guanyuhong	Yangxin, Hubei	YTS	450	109.68	32.32	159.82	17.91	1.45	23.54	1.24	11.79	10.34	135.55
AS661742	Hongmang	Zhuxi, Hubei	YTS	330	111.25	31.87	156.34	17.84	1.75	21.93	1.53	10.52	8.02	126.12
AS661744	Hongmangzi	Baokang, Hubei	YTS	20	115.65	30.20	167.43	19.71	1.56	19.17	1.67	9.34	13.09	133.53
AS661745	Hongxu	Guangji, Hubei	YTS	93	111.78	30.83	162.04	18.33	1.86	25.47	1.97	10.41	9.92	151.38
AS661746	Xiaoganmai	Dangyang, Hubei	YTS	307	109.68	32.32	160.77	20.78	1.52	25.41	2.26	13.96	12.31	155.9
AS661747	Caoxieban	Zhushan, Hubei	YTS	45	115.42	30.23	158.55	15.82	1.47	21.08	2.11	10.12	10.8	145.7
AS661748	Peishanbai	Qichun, Hubei	YTS	60	114.87	30.45	161.09	18.49	1.62	21.47	1.82	10.92	10.18	138.93
AS661749	Yangmai	Huanggang, Hubei	YTS	110	112.75	32.15	155.07	21.52	2.18	22.95	1.82	12.17	9.46	104.64
AS661750	Yuanzhui	Zaoyang, Hubei	YTS	900	112.92	35.78	150.95	28.84	2.2	10.56	1.67	13.24	7.58	92.58
AS661751	Tiezimai	Xianning, Hubei	YTS	151	110.68	31.00	155.07	17.43	1.52	22.73	1.97	10.44	13.91	140.58
AS661753	Gaoshanxiaomai	Zigui, Hubei	YTS	307	109.68	32.32	159.51	18.95	1.43	25.97	1.97	12.78	10.57	153.57
AS661754	Quannang	Zhushan, Hubei	YTS	330	111.25	31.87	160.14	21.05	1.8	28.04	1.09	11.57	9.6	152.83
AS661755	Quanmangxiaomai	Baokang, Hubei	YTS	47	115.17	30.45	162.68	16.48	1.47	22.04	1.24	10.21	10.12	141.62
AS661756	Xishuibagutao	Xishui, Hubei	YTS	68	115.40	30.78	156.97	21.99	1.56	29.34	1.53	12.28	10.57	151.84
AS661757	Zimai	Luotian, Hubei	YTS	200	110.82	32.85	156.65	19.69	1.54	26.39	1.67	11.64	11.57	147.48
AS661758	Pushanba	Yunxian, Hubei	YTS	58	114.00	29.50	166.48	17.37	1.84	21.5	1.67	9.86	10.99	142.97
AS661759	Wugongmai	Chongyang, Hubei	YTS	-	113.38	31.72	155.07	19.06	1.45	21.43	1.38	10.72	12.22	140.66
AS661760	Wugongxu	Suixian, Hubei	YTS	58	114.00	29.50	151.26	22.77	1.84	22.95	1.97	12.83	11.89	124.94
AS661761	Jiyubao	Chongyang, Hubei	YTS	447	111.67	36.25	160.14	18.94	1.51	17.71	1.82	7.08	10.73	123.8
AS661762	Baikeheshangmai	Dongkou, Hunan	YTS	5	116.98	23.68	159.82	19.84	1.36	27.8	1.67	10.76	9.99	149.05
AS661763	Guangtoumai	Raoping, Guangdong	SAS	-	122.03	46.07	149.36	21.1	1.95	28.32	2.69	10.76	9.6	125.93
AS661764	Bendixiaomai	Xingan, Guangxi	SAS	3000	98.83	31.22	161.09	18.46	1.51	26.86	1.97	11.19	10.34	145.14
AS661768	Baiyuxiaomai	Baiyu, Sichuan	Q&T	255	106.97	30.25	173.77	23.14	1.73	17.08	2.26	13.45	13.25	132.03
AS661771	Tuodongmai	Quxian, Sichuan	SWAS	1680	102.57	26.63	162.68	19.63	1.69	23.91	1.38	10.1	10.18	131.24
AS661773	Guangtouxiaomai	Huidong, Sichuan	SWAS	270	107.77	29.32	162.68	26.86	1.82	25.52	2.26	11.79	12.12	142.7
AS661774	Guangtouxiaomai	Wulong, Sichuan	SWAS	3080	100.32	30.93	157.29	23.06	1.62	26.04	2.55	10.46	8.86	142.11
AS661775	Gaoshanzaoshuxiaomai	Xinlong, Sichuan	Q&T	2640	101.02	30.03	169.02	23.74	1.49	14.91	2.11	13.84	13.38	113.31
AS661777	Zhuonixiaomai	Yajiang, Sichuan	SWAS	4200	98.10	32.98	174.72	22.16	1.82	19.82	2.26	12.46	16.32	131.34
AS661778	Ranriwumangmai	Shiqu, Sichuan	Q&T	447	111.67	36.25	162.36	21.92	1.69	18.6	2.26	11.63	16.87	114.71
AS661779	Qianqianmai	Guanling, Guizhou	SWAS	1247	106.47	26.57	166.8	22.79	1.56	25.91	1.82	11.25	13.65	146.26
AS661780	Wuhuaxiaomai	Qingzhen, Guizhou	SWAS	1587	99.90	24.60	160.46	24.82	2.78	18.82	1.67	14.83	10.8	126.2
AS661781	Daheimai	Fengqing, Yunnan	SWAS	1700	99.60	24.83	163.63	20.89	2.31	22.36	2.26	9.12	10.6	129.29
AS661782	Guangyiwuyuemai-8	Changning, Yunnan	SWAS	1580	99.25	24.03	174.09	20.18	1.75	25.65	1.97	8.76	18.4	152.02
AS661783	Wumulongxiaobaimai	Yongde, Yunnan	SWAS	1684	102.43	23.37	163.94	19.09	1.47	26.69	2.11	9.43	11.05	136.15
AS661784	Bendixiaomai	Honghe, Yunnan	SWAS	1889	102.58	24.60	155.7	19.85	1.79	22.91	2.4	9.63	10.15	135.09
AS661785	Bendiyoumangxiaomai	Jinning, Yunnan	SWAS	1434	103.43	24.40	160.14	19.33	1.38	23.54	2.26	11.79	10.63	133.23
AS661786	Bendizimai	Mill, Yunnan	SWAS	1587	99.90	24.60	161.09	23.32	1.66	25.1	1.97	13.24	12.7	145.01
AS661790	Youmanghuakemai	Fengqing, Yunnan	SWAS	2340	99.28	27.17	161.41	16.03	1.97	25.21	2.26	9.96	9.7	136.63
AS661791	Guangtoubaikemai	Weixi, Yunnan	SWAS	447	111.67	36.25	172.82	20.12	1.58	23.86	1.97	11.36	12.25	140.95
AS661792	Guangtoumai	Simao, Yunnan	SWAS	913	100.72	23.33	165.85	23.26	2.01	28.95	2.11	13.03	11.54	143.65
AS661793	Guangtoumai-2	Jinggu, Yunnan	SWAS	1587	99.90	24.60	162.36	20.05	1.88	26.49	2.4	11.18	11.44	132.93
AS661794	Honggangguangtoumai	Fengqing, Yunnan	SWAS	1715	100.30	25.22	162.36	22.66	1.8	26.08	2.26	11.39	10.8	146.67
AS661795	Huakemai	Weishan, Yunnan	SWAS	1587	99.90	24.60	168.06	19.89	1.52	26.08	1.82	10.47	12.86	139.45
AS661796	Ruankemai	Fengqing, Yunnan	SWAS	1684	102.50	25.22	162.68	18.94	1.82	25.97	1.82	9.46	11.41	140.78
AS661798	Chunmai	Fumin, Yunnan	SWAS	1123	109.50	35.82	150.63	27.21	1.77	26.65	2.26	9.49	12.64	115.98
AS661800	Sanyuehuang	Luochuan, Shanxi	NW	460	109.35	32.38	161.41	19.67	1.3	23.13	1.24	10.98	12.31	129.09
AS661803	Xiaosanyuehuang	Pingli, Shanxi	YTS	419	108.60	34.10	156.65	18.68	1.73	16.56	2.26	10.81	10.25	113.46
AS661804	Xiaohongmai	Huxian, Shanxi	NW	934	110.13	34.08	160.77	20.96	1.79	17.84	2.26	7.21	10.67	119.62
AS661806	Shanyangxue	Luonan, Shanxi	NW	-	112.25	36.17	162.04	19.2	1.28	23.84	1.09	10.18	10.6	137.73
AS661807	Makouxi	Zhenan, Shanxi	YTS	705	109.95	33.92	163.31	17.25	1.56	20.5	1.82	8.73	11.6	147.55
AS661809	Changmanghong	Shangxian, Shanxi	Y&H	-	108.03	35.03	160.77	21.51	1.64	24.95	1.09	12.06	9.25	152
AS661810	Changsuimai	Binxian, Shanxi	NW	570	110.30	33.67	163.63	19.52	1.36	23.45	1.09	9.34	9.21	127.1
AS661812	Shisanmai	Danfeng, Shanxi	Y&H	820	109.00	33.67	162.68	16.94	1.58	15.02	1.67	9.31	12.44	147.4
AS661814	Bailanmai	Zuoshui, Shanxi	Y&H	705	109.95	33.92	161.09	17.79	1.41	19.89	1.09	8.66	12.28	130.29
AS661815	Baiximai	Shangxian, Shanxi	Y&H	820	107.98	33.53	176.94	18.91	1.38	20.45	1.09	9.19	14.83	134.82
AS661817	Baiyudongmai	Foping, Shanxi	Y&H	684	109.87	33.52	174.09	20.05	1.51	23.3	1.09	11.5	13.96	139.57
AS661819	Baiyanglazi	Shanyang, Shanxi	Y&H	320	109.37	32.85	162.68	16.71	1.71	18.04	1.53	7.71	10.41	140.82
AS661822	Baiyanglazi	Xunyang, Shanxi	SWAS	470	110.85	33.50	167.11	15.21	1.66	19.63	1.24	8.26	11.93	143.92
AS661823	Baiwugongcao	Shangnan, Shanxi	Y&H	590	110.83	35.42	162.99	17	1.81	22.6	1.38	11.18	13.67	151.01
AS661824	Baijiantiao	Sanyuan, Shanxi	NW	1123	109.50	35.82	163.94	19.07	1.34	26.04	1.09	8.74	15.82	140.76
AS661825	Baisuihonglibeidimai	Luochuan, Shanxi	NW	642	106.13	33.33	172.19	20.83	1.1	26.23	1.09	9.53	13.35	130.92
AS661827	Lanhuamai	Zhenan, Shanxi	YTS	450	108.90	32.30	164.26	18.07	1.45	21.5	1.38	7.62	12.89	131.09
AS661831	Laoxianmai	Langao, Shanxi	YTS	934	110.13	34.08	158.87	19.69	1.86	24.19	1.53	9.4	11.7	136.67
AS661832	Laomanmai	Luonan, Shanxi	NW	934	110.13	34.08	162.68	14.33	1.32	17.37	1.09	7.59	10.41	144.78
AS661833	Huitoucao	Luonan, Shanxi	NW	423	108.78	34.60	158.55	15.39	1.38	22.39	1.09	9.57	10.47	143.9
AS661837	Hongdatou	Sanyuan, Shanxi	NW	320	109.37	32.85	162.04	18.09	1.56	23.36	1.09	10.16	13.6	148.53
AS661839	Honghuamai	Xunyang, Shanxi	SWAS	934	110.13	34.08	170.28	20.93	1.41	17.56	1.09	11.61	10.54	133.75
AS661842	Hongxingliu	Xunyang, Shanxi	SWAS	450	108.90	32.30	166.48	19.62	1.47	23.08	2.11	11.32	15.67	146.28
AS661843	Hongxumai	Langao, Shanxi	YTS	320	109.37	32.85	162.36	19.41	1.49	23.04	1.09	11.79	10.86	131.51
AS661845	Yugongdiao	Xunyang, Shanxi	SWAS	250	109.03	32.72	157.92	19.53	1.52	26.34	2.26	11.32	8.44	131.03
AS661846	Shanxibai	Ankang, Shanxi	YTS	510	108.93	34.15	169.02	20.68	1.56	17.06	1.24	10.71	14.35	140.92
AS661847	Yangxiaomai	Changan, Shanxi	NW	800	106.25	32.83	156.97	18.24	1.32	21.41	1.09	8.65	10.08	128.96
AS661848	Canlaomai	Ningqiang, Shanxi	SWAS	934	110.13	34.08	170.92	20.58	1.71	15.87	1.53	11.49	15.22	134.25
AS661850	Cantiaomai	Luonan, Shanxi	NW	684	109.87	33.52	165.85	18.86	1.6	22.49	1.24	10.68	12.86	155.6
AS661851	Hulutou	Shanyang, Shanxi	Y&H	322	110.12	32.82	162.99	18.02	1.73	23.99	1.24	8.54	10.92	146.45
AS661853	Pushanba	Baihe, Shanxi	YTS	820	109.00	33.67	169.33	23.19	1.47	18.78	1.67	11.09	12.93	134.53
AS661855	Deguolan	Zuoshui, Shanxi	Y&H	39	116.60	40.13	163.63	20.36	1.88	24.65	1.97	10.98	11.25	124.23
AS661856	Dabaimai	Yongdeng, Gansu	NWS	1454	100.17	39.1								

Supplemental Table S1 Information of the 707 wheat accessions assessed in the present study.

Accession No.	Landrace name	Origin	Geographic distribution [†]	Atitude (m)	East longitude (°)	Northern Latitude (°)	BLUP of 8 agronomic traits [‡]							
							FD	FLL	FLW	PDL	SH	SL	TN	PH
AS661945	Quxiaijizhuo	Lazi, Xizang	Q&T	-	91.12	29.68	169.33	20.31	1.75	15.95	1.67	9.76	15.15	115.08
AS661948	Qubongmai	Lasachengguanqu, Xizang	Q&T	-	97.62	30.62	175.36	19.97	1.84	17.63	2.26	11.24	10.21	123.56
AS661951	Tuanjiejizhuo	Chaya, Xizang	Q&T	-	92.47	28.43	169.33	18.57	1.82	14.17	2.11	9.36	14.09	119.93
AS661955	Xingrongchunmai	Longzi, Xizang	Q&T	-	96.97	30.05	158.24	21.63	1.69	19.8	2.26	9.93	10.86	130.05
AS661956	Hongxiaomai	Basu, Xizang	Q&T	-	91.78	29.22	165.53	17.25	1.62	18.6	2.26	11.56	15.09	114.7
AS661957	Hongheshangtou	Naidong, Xizang	Q&T	-	96.97	30.05	173.14	19.05	1.62	19.19	2.55	12.4	15.96	132.41
AS661961	Suzhuozhuoma	Basu, Xizang	Q&T	-	88.93	27.48	164.26	20.22	1.84	18.84	2.4	12.44	12.31	134.9
AS661962	Gangjijizhuo	Yadong, Xizang	Q&T	-	95.63	29.90	159.51	17.92	1.79	27.43	2.26	11.4	11.28	136.29
AS661963	Tumaomai	Bomi, Xizang	Q&T	201	117.85	36.48	174.09	19.37	1.8	18.47	2.11	9.31	10.86	126.42
AS661964	Shagangchun	Kangma, Xizang	Q&T	-	92.60	29.15	-	-	-	-	-	-	-	-
AS661966	Longnanchangmang	Jiacha, Xizang	Q&T	-	94.38	29.57	172.19	19.61	1.51	19.13	2.26	10.97	10.25	133.15
AS661967	Linzhizaxiaomai	Linzhi, Xizang	Q&T	-	94.05	29.20	159.19	20.55	2.1	20.87	2.26	8.86	11.09	126
AS661969	Jieguozharenbusu	Milin, Xizang	Q&T	-	91.95	27.98	174.09	17.11	1.88	21.13	2.11	10.86	12.18	134.16
AS661970	Nianzhadongxiaomai	Cuona, Xizang	Q&T	-	97.62	30.62	169.33	19.37	1.79	18.15	2.26	7.27	11.67	139.55
AS661975	Xuelongzhuo	Chaya, Xizang	Q&T	-	95.63	29.90	170.6	18.87	1.39	13.5	2.26	8.16	15.54	97.98
AS661976	Bomizamai-5	Bomi, Xizang	Q&T	-	91.78	29.22	155.38	19.11	1.69	27.28	1.67	11.19	10.6	128.26
AS661977	Zedangmaoying	Naidong, Xizang	Q&T	-	91.78	29.22	152.53	19.24	1.95	18.41	2.55	9.41	13.46	108.37
AS661978	Zedangzaxiaomai	Naidong, Xizang	Q&T	-	97.62	30.62	169.65	18.7	1.67	16.08	2.26	9.87	13.28	112.07
AS661979	Zongshamai	Chaya, Xizang	Q&T	26	120.45	36.38	169.65	16.86	1.77	10.87	2.11	11.19	12.28	118.94
AS661980	Dingrichangmang	Dingri, Xizang	Q&T	-	87.80	28.35	153.8	19.86	1.52	22.84	1.53	9.94	10.83	125.27
AS661981	Dingjiechun	Dingjie, Xizang	Q&T	-	89.05	29.67	163.31	20.28	1.49	20.43	1.97	10.99	11.05	142.27
AS661983	Chunxiaomai	Nanmulin, Xizang	Q&T	-	85.97	28.17	155.38	22.53	2.18	24.23	2.11	12.23	10.7	119.59
AS661986	Nielamuwumang	Nielamu, Xizang	Q&T	-	93.18	29.07	163.94	16.32	1.64	16.87	1.38	9.28	12.89	103.78
AS661988	Langxiangongzhuo	Langxian, Xizang	Q&T	-	94.38	29.57	166.48	17.51	1.47	18.11	1.38	6.87	13.38	117.48
AS661995	Lulangbaimai	Linzhi, Xizang	Q&T	-	91.95	27.98	165.53	20.74	1.47	16.3	2.11	11.2	11.8	122.14
AS661997	Cuonabaimai	Cuona, Xizang	Q&T	-	94.05	29.20	176.31	18.89	1.66	18.41	2.26	13.01	13.12	125.41
AS661998	Deyangzamai	Milin, Xizang	Q&T	-	91.12	29.68	170.28	21.76	1.56	23.97	1.53	10.04	11.54	123.73
AS662001	Cangmai-169	Lasa, Xizang	Q&T	-	87.17	29.23	157.29	20.83	1.51	25.58	1.97	10.38	10.96	126.79
AS662003	Wumangxiaomai	Angren, Xizang	Q&T	26	120.45	36.38	159.82	19.33	1.62	20.63	2.26	9.55	16.25	111.4
AS662005	Baiyingwumangxiaomai	Jiangzi, Xizang	Q&T	-	87.07	28.62	166.16	19.01	1.64	18.45	2.26	11.12	13.52	112.24
AS662007	Quxiaxiaomai	Dingri, Xizang	Q&T	-	87.17	29.23	146.51	17.98	1.38	22.13	2.11	8.61	10.41	112.3
AS662010	Zhuntangyuzhuo	Angren, Xizang	Q&T	40	116.57	34.68	155.07	22.21	1.8	20.34	1.97	11.57	11.02	125.58
AS662012	Xiaohongmang	Fengxian, Jiangsu	Y&H	34	117.23	34.27	166.48	19.95	1.39	24.69	1.09	9.67	11.57	137.56
AS662013	Honghulutoubaimai	Xuzhou, Jiangsu	Y&H	920	110.45	31.10	166.16	17.32	1.41	21.15	1.09	9.38	14.02	130.09
AS662014	Sanyuehuang	Shennongjia, Hubei	YTS	307	109.68	32.32	150.63	22.18	2.07	22.91	2.4	10.41	8.47	110.06
AS662016	Hongmanglijianmai	Zhushan, Hubei	YTS	450	109.68	32.32	166.16	18.13	1.71	22.63	1.09	9.19	12.18	152.48
AS662017	Heshangtou	Zhuxi, Hubei	YTS	450	109.68	32.32	156.34	23.64	2.05	21.8	2.26	12.12	10.12	118.76
AS662018	Nanjingzao	Zhuxi, Hubei	YTS	307	109.68	32.32	152.53	23.73	2.12	24.52	2.11	11.11	9.25	107.8
AS662019	Tiegancao	Zhushan, Hubei	YTS	15	122.40	37.17	152.47	19.79	1.8	21.36	2.11	11.25	8.83	113.91
AS662020	Molengmai	Ninglang, Yunnan	SWAS	1483	104.32	24.98	152.85	21.42	1.97	25.39	2.69	11.84	9.96	123.02
AS662021	Dongmangmai	Luoping, Yunnan	SWAS	-	97.18	31.15	159.19	19.11	1.75	22.45	1.67	9.85	10.13	136.18
AS662022	Shenggexiaomai	Changdong, Xizang	Q&T	-	88.93	27.48	163.94	19.21	1.77	20.3	2.26	11.74	13.93	134.66
AS662026	Xiakangbu	Yadong, Xizang	Q&T	-	87.07	28.62	163.94	22.22	1.82	16.41	2.26	12.93	11.63	121.6
AS662028	Zhaxigangzhuo	Dingri, Xizang	Q&T	-	94.38	29.57	153.48	16.31	1.51	23.3	1.24	10.66	11.73	115.32
AS662030	Baimadianzhuo	Linzhi, Xizang	Q&T	-	94.38	29.57	172.82	18.19	1.3	22.47	1.67	11.59	12.86	136.14
AS662031	Jirizhuo	Linzhi, Xizang	Q&T	-	91.78	29.85	175.04	18.52	1.73	19.89	2.26	13.3	12.15	137.68
AS662033	Jigupizhuo	Mozhugongka, Xizang	Q&T	-	97.62	30.62	-	-	-	-	-	-	-	-
AS662034	Dadangzhuo	Chaya, Xizang	Q&T	-	91.12	29.68	173.14	22.27	1.58	13.93	2.26	13.46	14.48	113.42
AS662036	Yangridasui	Lasa, Xizang	Q&T	54	116.00	39.70	177.89	20.06	1.56	17.8	2.55	9.46	11.8	126.37
AS662037	Jiangdangtutuo	Naidong, Xizang	Q&T	-	97.48	28.65	166.16	20.98	1.94	20.41	2.26	10.35	12.25	136.12
AS662038	Gongjizhuo	Chayu, Xizang	Q&T	-	97.48	28.65	158.87	23.81	1.71	27.6	2.11	14.98	9.76	130.12
AS662039	Shamabizhuo	Chayu, Xizang	Q&T	-	94.38	29.57	169.02	19.41	1.6	18.13	2.11	8.49	12.96	141.75
AS662041	Layuedasui	Linzhi, Xizang	Q&T	-	95.63	29.90	173.77	22.74	1.79	27.28	1.24	13.7	13.33	138.96
AS662042	Yigongzhuo	Bomi, Xizang	Q&T	-	95.63	29.90	173.77	19.96	1.6	21.23	2.26	10.05	15.9	142.36
AS662043	Bomidongqu	Bomi, Xizang	Q&T	-	97.48	28.65	160.46	18.21	1.43	28.08	1.97	11.5	10.41	151.87
AS662046	Sangjiubizhuo	Chayu, Xizang	Q&T	-	91.37	29.67	174.72	21.21	1.79	17.93	1.09	9.82	13.59	125.83
AS662049	Tajizhuo	Dazi, Xizang	Q&T	-	89.67	29.33	170.28	22.99	1.71	15.28	2.26	9.55	15.51	113.37
AS662050	Pumanghongmai	Pumang, Xizang	Q&T	-	90.08	29.48	169.65	21.79	1.62	15.41	2.26	12.44	11.63	119.65
AS662052	Tarongzhuo	Nimu, Xizang	Q&T	42	122.03	37.18	158.87	18.14	1.64	22.47	2.4	10.42	11.6	136.65
AS662053	Fanshenzhuo	Qiongjie, Xizang	Q&T	1739	104.63	35.00	172.5	21	2.07	17.26	2.26	12.31	9.96	118.69
AS662055	Huomaizi	Longxi, Gansu	NWS	1420	105.18	34.18	160.77	15.98	1.39	13.28	1.09	9.48	10.41	107.2
AS662056	Baiyumai	Lixian, Gansu	SWAS	1567	105.28	34.00	161.41	18.39	1.47	15.02	1.24	8.49	13.51	137.17
AS662057	Baizaomai	Xihe, Gansu	SWAS	1495	104.88	34.73	169.97	21.56	1.51	23.67	1.09	11.65	19.85	143.27
AS662059	Laobaimai	Wushan, Gansu	NWS	1420	105.18	34.18	166.16	22	1.64	22.26	2.26	11.73	12.28	140.47
AS662061	Youmangyangmai	Lixian, Gansu	SWAS	957	105.72	33.75	162.04	18.82	1.64	20.17	1.24	7.67	11.93	127.69
AS662067	Huomai	Lingwu, Ningxia	NWS	1183	105.67	37.48	163.94	21.93	1.79	24.32	2.26	11.6	11.7	143
AS662068	Hongtuzi	Huinong, Ningxia	NWS	10	121.60	37.40	169.33	20.4	1.54	17.63	2.26	13.02	14.15	132.64

[†] Geographic distribution of the tested landrace accessions. The ten Chinese agro-ecological zones includes: NW (Northern Winter Wheat Zone), Y&H (Yellow and Huai River Valleys Facultative Wheat Zone), YTS (Middle and Low Yangtze Valleys Autumn-Sown Spring Wheat Zone), SAS (Southern Autumn-Sown Spring Wheat Zone), SWAS (Southwestern Autumn-Sown Spring Wheat Zone), NES (Northeastern Spring Wheat Zone), NS (Northern Spring Wheat Zone), NWS (Northwestern Spring Wheat Zone), Q&T (Qinghai-Tibetan Plateau Spring-Winter Wheat Zone), and XJ (Xinjiang Winter-Spring Wheat Zone).

[‡] BLUP of 8 agronomic traits were obtained from a previous report (Liu, Y., Lin, Y., Gao, S., Li, Z., Ma, J., and Deng, M., et al. (2017). A genome-wide association study of 23 agronomic traits in Chinese wheat landraces. Plant J. 91:861–873.). "-", data unavailable