

**Table S1.** Details of the associations and candidate genes detected in SNP- and Haplotype-based GWAS for the traits of Female/Male Flowering time (FF and MF, respectively) and Anthesis–Silking Interval (ASI) measured in inbred lines of tropical maize in two locations (Cambira and Sabaudia).

Trait	Marker Type	Marker	Site	Chr	Position	p-value	PV%	BIN	Gene ID
FF	HAPLO	HChr1B296	C	1	5700560-5700599	1x10 <sup>-4</sup>	5.8%	1.01	-
FF	HAPLO	HChr3B4481	C	3	195855645-196072390	6x10 <sup>-5</sup>	6.4%	3.07	AC215860.3_FG005, GRMZM2G452529, GRMZM2G452602, GRMZM2G394973, GRMZM2G394979, GRMZM2G095084, GRMZM2G105827, GRMZM2G405722, GRMZM2G105863
FF	HAPLO	HChr5B1434	C	5	19144526-19144565	6x10 <sup>-6</sup>	11.3%	5.03	GRMZM2G074898
FF	HAPLO	HChr6B444	C	6	33144046-33144063	2x10 <sup>-4</sup>	5.6%	6.01	-
FF	HAPLO	HChr6B2634	C	6	149632662-149632710	1x10 <sup>-4</sup>	5.9%	6.05	-
FF	HAPLO	HChr7B4106	C	7	173192895-173192901	9x10 <sup>-6</sup>	6.4%	7.05	GRMZM2G149040
FF	HAPLO	HChr8B960	C	8	25255081-25255885	2x10 <sup>-4</sup>	7.8%	8.03	-
FF	HAPLO	HChr8B961	C	8	25255915-25291858	1x10 <sup>-4</sup>	7.7%	8.03	-
FF	HAPLO	HChr8B2348	C	8	137161389-137164401	2x10 <sup>-4</sup>	5.7%	8.05	GRMZM2G351813, GRMZM2G351796
FF	HAPLO	HChr9B2937	C	9	141567271-141568437	7x10 <sup>-5</sup>	6.1%	9.06	GRMZM2G180539
FF	HAPLO	HChr9B2943	C	9	141786325-141789645	6x10 <sup>-6</sup>	17.0%	9.06	-
FF	HAPLO	HChr3B3430	S	3	173130247-173130271	5x10 <sup>-5</sup>	8.6%	3.06	-
FF	HAPLO	HChr3B4555	S	3	199609864-199609873	1x10 <sup>-4</sup>	6.3%	3.07	-
FF	HAPLO	HChr9B3470	S	9	152254172-152254189	1x10 <sup>-4</sup>	6.5%	9.07	GRMZM2G358931
FF	SNP	S2_110828233	C	2	110828233	2x10 <sup>-5</sup>	5.7%	2.05	GRMZM2G433912, GRMZM2G433927
FF	SNP	S2_243989901	C	2	243989901	1x10 <sup>-5</sup>	6.1%	2.1	-
FF	SNP	S3_383255	C	3	383255	3x10 <sup>-5</sup>	5.6%	3	GRMZM2G383240
FF	SNP	S6_155078868	C	6	155078868	2x10 <sup>-5</sup>	5.9%	6.06	GRMZM2G145670, GRMZM2G145668
FF	SNP	S7_18795074	C	7	18795074	3x10 <sup>-5</sup>	5.6%	7.02	-

FF	SNP	S7_18795075	C	7	18795075	3x10 <sup>-5</sup>	5.6%	7.02	-
FF	SNP	S7_173192895	C	7	173192895	1x10 <sup>-5</sup>	6.3%	7.05	-
FF	SNP	S7_173192901	C	7	173192901	1x10 <sup>-5</sup>	6.3%	7.05	-
FF	SNP	S8_25254594	C	8	25254594	1x10 <sup>-5</sup>	6.2%	8.03	-
FF	SNP	S9_141567271	C	9	141567271	2x10 <sup>-5</sup>	5.7%	9.06	-
FF	SNP	S2_14924919	S	2	14924919	2x10 <sup>-5</sup>	6.6%	2.02	-
FF	SNP	S3_53249405	S	3	53249405	4x10 <sup>-6</sup>	7.6%	3.04	GRMZM2G108245
FF	SNP	S5_15734151	S	5	15734151	1x10 <sup>-6</sup>	8.8%	5.03	AC197122.3_FG003
FF	SNP	S5_199354625	S	5	199354625	1x10 <sup>-5</sup>	7.0%	5.06	-
FF	SNP	S5_220035046	S	5	220035046	1x10 <sup>-7</sup>	10.1%	5.09	-
FF	SNP	S6_136612880	S	6	136612880	2x10 <sup>-5</sup>	6.5%	6.05	GRMZM2G176995
FF	SNP	S6_159100882	S	6	159100882	9x10 <sup>-6</sup>	7.0%	6.06	-
MF	HAPLO	HChr2B163	C	2	2058558- 2058559	2x10 <sup>-5</sup>	5.9%	2.01	GRMZM2G040513, GRMZM2G508373, GRMZM2G508378, GRMZM2G508382, GRMZM2G508383, GRMZM2G508386
MF	HAPLO	HChr4B2525	C	4	169784106- 169784201	1x10 <sup>-4</sup>	4.6%	4.06	-
MF	HAPLO	HChr7B822	C	7	21930346- 21930371	1x10 <sup>-4</sup>	5.9%	7.02	GRMZM2G399090
MF	HAPLO	HChr8B960	C	8	25255081- 25255885	1x10 <sup>-4</sup>	7.8%	8.03	-
MF	HAPLO	HChr8B961	C	8	25255915- 25291858	2x10 <sup>-4</sup>	7.1%	8.03	-
MF	HAPLO	HChr9B2937	C	9	141567271- 141568437	1x10 <sup>-5</sup>	7.4%	9.06	GRMZM2G180539
MF	HAPLO	HChr9B2943	C	9	141786325- 141789645	1x10 <sup>-4</sup>	13.0%	9.06	-
MF	HAPLO	HChr1B1930	S	1	40098787- 40099894	6x10 <sup>-5</sup>	6.8%	1.03	-
MF	HAPLO	HChr1B6984	S	1	273002190- 273002223	9x10 <sup>-5</sup>	6.6%	1.1	GRMZM2G027059
MF	HAPLO	HChr4B81	S	4	1716333- 1716337	8x10 <sup>-5</sup>	6.9%	4.01	AC193450.3_FG003
MF	HAPLO	HChr4B1083	S	4	37276130- 37276144	9x10 <sup>-5</sup>	6.6%	4.05	-
MF	HAPLO	HChr4B1116	S	4	38448457- 38448480	2x10 <sup>-4</sup>	5.0%	4.05	-
MF	HAPLO	HChr4B1127	S	4	38703250- 38703306	7x10 <sup>-5</sup>	5.5%	4.05	-
MF	HAPLO	HChr5B2303	S	5	61807507- 61807676	5x10 <sup>-5</sup>	6.9%	5.03	-
MF	HAPLO	HChr7B747	S	7	18795074- 18795075	5x10 <sup>-5</sup>	5.8%	7.02	-

MF	HAPLO	HChr7B1941	S	7	129359483-129359504	1x10 <sup>-4</sup>	6.5%	7.03	-
MF	HAPLO	HChr7B3990	S	7	173192895-173192901	2x10 <sup>-5</sup>	6.4%	7.05	-
MF	HAPLO	HChr8B2080	S	8	127681717-127681724	2x10 <sup>-5</sup>	6.6%	8.05	-
MF	HAPLO	HChr9B295	S	9	9424411-9424433	2x10 <sup>-4</sup>	6.0%	9.01	-
MF	SNP	S2_2058558	C	2	2058558	2x10 <sup>-5</sup>	5.9%	2.01	GRMZM2G040513, GRMZM2G508373, GRMZM2G508378, GRMZM2G508382, GRMZM2G508383, GRMZM2G508386
MF	SNP	S2_2058559	C	2	2058559	2x10 <sup>-5</sup>	5.9%	2.01	GRMZM2G040513, GRMZM2G508373, GRMZM2G508378, GRMZM2G508382, GRMZM2G508383, GRMZM2G508386
MF	SNP	S8_25254594	C	8	25254594	3x10 <sup>-5</sup>	5.7%	8.03	-
MF	SNP	S9_141567271	C	9	141567271	7x10 <sup>-6</sup>	6.4%	9.06	GRMZM2G180539
MF	SNP	S9_143018654	C	9	143018654	2x10 <sup>-5</sup>	5.8%	9.06	-
MF	SNP	S3_6927467	S	3	6927467	2x10 <sup>-5</sup>	6.5%	3.02	GRMZM2G582236, GRMZM2G166646
MF	SNP	S3_188282435	S	3	188282435	1x10 <sup>-5</sup>	6.9%	3.06	-
MF	SNP	S3_188282437	S	3	188282437	1x10 <sup>-5</sup>	6.9%	3.06	-
MF	SNP	S5_220035046	S	5	220035046	1x10 <sup>-6</sup>	8.5%	5.09	-
MF	SNP	S6_9189800	S	6	9189800	1x10 <sup>-5</sup>	6.8%	6.01	GRMZM2G066293
MF	SNP	S6_136612880	S	6	136612880	2x10 <sup>-5</sup>	6.5%	6.05	GRMZM2G176995
ASI	HAPLO	HChr1B6409	C	1	251925038-251925041	7x10 <sup>-6</sup>	7.8%	1.09	-
ASI	HAPLO	HChr3B2296	C	3	124141907-124142464	4x10 <sup>-5</sup>	7.3%	3.04	-
ASI	HAPLO	HChr8B4259	C	8	175594539-175594540	3x10 <sup>-5</sup>	5.6%	8.09	-
ASI	HAPLO	HChr10B352	C	10	6072687-6072700	7x10 <sup>-5</sup>	6.3%	10.02	GRMZM5G805685
ASI	HAPLO	HChr2B846	S	2	9591340-9591358	1x10 <sup>-4</sup>	5.2%	2.02	GRMZM2G089294, GRMZM2G089282
ASI	HAPLO	HChr2B1267	S	2	15133087-15133122	1x10 <sup>-4</sup>	5.4%	2.03	AC186904.4_FG006, GRMZM2G513218, GRMZM2G050262
ASI	HAPLO	HChr5B2742	S	5	82139555-82139874	4x10 <sup>-5</sup>	9.5%	5.04	GRMZM2G024882, GRMZM2G493589
ASI	HAPLO	HChr7B262	S	7	5058537-5058542	8x10 <sup>-5</sup>	5.5%	7.01	-

ASI	HAPLO	HChr7B3437	S	7	165508550- 165508562	2x10 <sup>-4</sup>	5.1%	7.04	GRMZM5G898768, GRMZM2G114461
ASI	HAPLO	HChr8B2891	S	8	156195448- 156195452	3x10 <sup>-6</sup>	7.9%	8.06	-
ASI	HAPLO	HChr9B2743	S	9	139752134- 139752292	6x10 <sup>-5</sup>	7.2%	9.06	-
ASI	SNP	S1_12442924	C	1	12442924	2x10 <sup>-5</sup>	6.0%	1.02	GRMZM2G453001
ASI	SNP	S1_252773206	C	1	252773206	3x10 <sup>-5</sup>	5.7%	1.09	-
ASI	SNP	S3_181601047	C	3	181601047	1x10 <sup>-5</sup>	6.2%	3.06	GRMZM2G536613, GRMZM5G871592
ASI	SNP	S5_183599722	C	5	183599722	3x10 <sup>-5</sup>	5.7%	5.05	-
ASI	SNP	S6_151596272	C	6	151596272	2x10 <sup>-5</sup>	5.8%	6.05	-
ASI	SNP	S7_8341449	C	7	8341449	2x10 <sup>-5</sup>	5.8%	7.01	-
ASI	SNP	S8_175594539	C	8	175594539	3x10 <sup>-5</sup>	5.6%	8.09	-
ASI	SNP	S8_175594540	C	8	175594540	3x10 <sup>-5</sup>	5.6%	8.09	-
ASI	SNP	S1_271949118	S	1	271949118	1x10 <sup>-5</sup>	6.7%	1.1	GRMZM2G068846
ASI	SNP	S1_272219591	S	1	272219591	2x10 <sup>-7</sup>	9.9%	1.1	-
ASI	SNP	S3_234343045	S	3	234343045	1x10 <sup>-5</sup>	6.7%	3.1	-
ASI	SNP	S3_234343074	S	3	234343074	2x10 <sup>-5</sup>	6.6%	3.1	-
ASI	SNP	S8_156195448	S	8	156195448	2x10 <sup>-6</sup>	8.2%	8.06	-
ASI	SNP	S8_156195449	S	8	156195449	2x10 <sup>-6</sup>	8.2%	8.06	-
ASI	SNP	S8_156195452	S	8	156195452	2x10 <sup>-6</sup>	8.2%	8.06	-
ASI	SNP	S9_139752134	S	9	139752134	2x10 <sup>-5</sup>	6.6%	9.07	-
ASI	SNP	S10_137651780	S	10	137651780	2x10 <sup>-5</sup>	6.5%	10.06	GRMZM2G455171

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Marker Type corresponds to the markers used in GWAS, Haplotype blocks (HAPLO) or SNP; Site indicates the location Cambira (C) or Sabaudia (S); Chr and Position corresponds to the chromosome number and position in base pairs of markers within chromosome, respectively; PV% percentage of the phenotype variation explained by the marker; ; BIN is an interval on the genetic map, which includes all loci between a core marker of leftmost or top to the next core marker rightmost or bottom.