

Appendix A The Bi-Parental QTL related to flowering time and maturity²⁾

QTL Name	LG(GmComposite2003)	Start(cM)	End(cM)
First flower 1-1	C	323.15	340.25
First flower 1-2	C2	122.8	124.8
First flower 1-3	C2	123	125
First flower 2-1	L1	77.4	84.1
First flower 2-2	L14	12.9	42.1
First flower 2-3	L15	22.7	41.1
First flower 3-1	U9	37.6	39.9
First flower 3-2	U11	53.55	63.65
First flower 3-3	U14	18.75	23.45
First flower 3-4	U1c	83.05	85.55
First flower 4-1	C2	107.3	109.3
First flower 4-2	M	16.5	18.5
First flower 4-3	L	83	85
First flower 4-4	L	109.2	111.2
First flower 5-1	C2	140.2	142.2
First flower 5-2	L	114.4	116
First flower 5-3	L	135.9	137.9
First flower 6-1	M	36.1	38.1
First flower 6-2	M	55.2	57.2
First flower 6-3	L	88.9	90.9
First flower 7-1	C2.2	25.5	32.5
First flower 7-2	Cba25	5	10
First flower 7-3	Cba16	7	15
First flower 8-1	C2	115.2	117.2

First flower 8-2	O	141.3	143.3
First flower 8-3	L	143.6	145.6
First flower 8-4	B1	81.9	83.9
First flower 9-1	C2	112.10004	123.6
First flower 9-2	G	35.5	37.5
First flower 9-3	J	43	63
First flower 10-1	C2	112.1	123.6
First flower 10-2	G	54.5	65.6
First flower 11-1	B1	45.38	47.38
First flower 11-2	B1	58.1	60.1
First flower 11-3	C2	115.2	116.72
First flower 11-4	F	2.63	4.63
First flower 12-1	C2	115.2	116.72
First flower 12-2	C2	112.4	114.4
First flower 12-3	E	36.29	38.29
First flower 12-4	No Positional Data		
First flower 12-5	No Positional Data		
First flower 12-6	No Positional Data		
First flower 12-7	No Positional Data		
First flower 12-8	No Positional Data		
First flower 13-1	A2	53.91	55.91
First flower 13-2	D1b	69.65	71.65
First flower 13-3	D1b	71.88	73.88
First flower 13-4	D1b	75.32	77.32
First flower 13-5	D1b	75.59	77.59
First flower 13-6	D1b	71.57	73.57

First flower 13-7	J	38.18	40.18
First flower 13-8	J	77.57	79.57
First flower 13-9	L	92.88	94.88
First flower 13-10	O	56.02	58.02
First flower 15-1	D1b	87.19	92.91
First flower 15-2	L	45.22	59.22
First flower 16-1	D1a	39.86	55.86
First flower 16-2	D1b	51.61	59.41
First flower 16-3	I	34.16	48.16
First flower 16-4	L	92.88	150.48
First flower 18-1	C2	112.95	114.95
First flower 18-2	C2	106.58	108.58
First flower 19-1	No Positional Data		
First flower 19-2	No Positional Data		
First flower 20-1	C2	111	118
First flower 20-2	L	94	101
First flower 20-3	I	32	41
First flower 21-1	B2	86.58	88.58
First flower 21-2	I	49.11	51.11
First flower 21-3	K	41.38	43.38
First flower 21-4	G	3.53	5.53
First flower 21-5	No Positional Data		
First flower 22-1	C1	122.79	131.4
First flower 22-2	C2	111.34	115.5
First flower 22-3	L	77.23	89.73

First flower 22-4	No Positional Data		
First flower 23-1	C2	109.205	115.48
First flower 24-1	D1b	73.34	87.19
First flower 24-2	K	32.95	54.97
First flower 24-3	L	61.34	87.41
First flower 24-4	O	106.02	119.5
First flower 25-1	F	3.04	44.41
First flower 25-2	H	27.63	46.95
First flower 25-3	I	36.93	58.82
First flower 25-4	L	61.34	71.44
First flower 26-1	C2	95.9	97.9
First flower 26-2	C2	102.2	104.2
First flower 26-3	C2	99.47	101.47
First flower 26-4	C2	99.9	101.9
First flower 26-5	C2	104.4	106.4
First flower 26-6	C2	106.58	108.58
First flower 26-7	C2	106.58	108.58
First flower 26-8	C2	108.8	110.8
First flower 26-9	C2	108.97	110.97
First flower 26-10	C2	112.7	114.7
First flower 26-11	C2	111.2	113.9
First flower 26-12	C2	108.9	110.9
First flower 26-13	C2	112.6	114.6
First flower 26-14	C2	111.8	113.8
First flower 26-15	C2	112.38	114.28
First flower 26-16	C2	112.7	114.7

First flower 26-17	C2	111.3	113.3
First flower 26-18	C2	112.95	114.95
First flower 27-1	No Positional Data		
Pod maturity 1-1	C	47.7	67.05
Pod maturity 1-2	D	44.9	49.9
Pod maturity 1-3	C	323.15	340.25
Pod maturity 1-4	C2	122.8	124.8
Pod maturity 1-5	C2	123	125
Pod maturity 2-1	L14	12.9	42.1
Pod maturity 3-1	L14	27.5	45.05
Pod maturity 3-2	M	39.35	41.35
Pod maturity 3-3	L1	72.9	80.75
Pod maturity 4-1	U9	43.55	44.85
Pod maturity 4-2	U11	53.55	63.65
Pod maturity 4-3	U14	18.75	23.45
Pod maturity 5-1	K	58.32	60.32
Pod maturity 5-2	K	30.75	32.75
Pod maturity 5-3	K	51	59.32
Pod maturity 5-4	K	31.75	38.9
Pod maturity 6-1	B1.2	0	13.1
Pod maturity 6-2	B1.2	13.1	43.1
Pod maturity 6-3	C1.2	0	18.9
Pod maturity 6-4	C1.2	73.45	91.05
Pod maturity 6-5	C1.2	54.25	73.45
Pod maturity 6-6	C1.2	91.05	105.9

Pod maturity 6-7	L	55.6	68.65
Pod maturity 6-8	GA1_26	35.6	65.3
Pod maturity 7-1	U11	53.55	63.65
Pod maturity 7-2	U7	67.55	72.95
Pod maturity 8-1	C2	107.3	109.3
Pod maturity 8-2	M	16.5	18.5
Pod maturity 8-3	L	86.1	88.1
Pod maturity 8-4	L	109.2	111.2
Pod maturity 8-5	C1	55.5	57.5
Pod maturity 9-1	J	-1	1
Pod maturity 9-2	L	114.4	116
Pod maturity 9-3	L	135.9	137.9
Pod maturity 10-1	C2	112.7	114.7
Pod maturity 10-2	M	36.1	38.1
Pod maturity 10-3	M	55.2	57.2
Pod maturity 10-4	L	88.9	90.9
Pod maturity 11-1	I	6.1	8.1
Pod maturity 12-1	I	2.7	4.7
Pod maturity 13-1	A2	155.5	157.4
Pod maturity 13-2	D1a+Q	39.7	41.7
Pod maturity 13-3	C2	45.9	47.9
Pod maturity 13-4	C2	111.3	113.3
Pod maturity 13-5	F	4.4	6.4
Pod maturity 13-6	L	88.7	90.7
Pod maturity 13-7	M	32.6	34.6
Pod maturity 13-8	O	147	149

Pod maturity 14-1	L	53.57	55.37
Pod maturity 14-2	O	99.38	101.38
Pod maturity 14-3	C2	111.84	113.84
Pod maturity 14-4	M	32.47	34.47
Pod maturity 15-1	M	33.47	50.09
Pod maturity 15-2	O	100.37	106.02
Pod maturity 15-3	C2	112.45	112.83
Pod maturity 15-4	L	54.57	59.52
Pod maturity 16-1	A1	25.42	26.42
Pod maturity 16-2	G	42.38	44.38
Pod maturity 16-3	K	42.35	44.35
Pod maturity 16-4	N	52.25	54.25
Pod maturity 17-1	B1	32.5	46.38
Pod maturity 17-2	B1	46.38	59.1
Pod maturity 17-3	B1	58.91	59.1
Pod maturity 17-4	C2	115.2	116.71
Pod maturity 17-5	F	2.63	4.63
Pod maturity 17-6	G	93.83	95.83
Pod maturity 17-7	No Positional Data		
Pod maturity 17-8	No Positional Data		
Pod maturity 17-9	No Positional Data		
Pod maturity 17-10	No Positional Data		
Pod maturity 17-11	No Positional Data		
Pod maturity 17-12	No Positional Data		
Pod maturity 17-13	G	93.83	95.83
Pod maturity 18-1	B1	58.91	73.76

Pod maturity 18-2	B1	53.41	59.1
Pod maturity 18-3	C1	75.23	77.23
Pod maturity 18-4	M	18.58	40.35
Pod maturity 18-5	No Positional Data		
Pod maturity 18-6	No Positional Data		
Pod maturity 18-7	No Positional Data		
Pod maturity 18-8	No Positional Data		
Pod maturity 18-9	No Positional Data		
Pod maturity 18-10	No Positional Data		
Pod maturity 18-11	No Positional Data		
Pod maturity 19-1	D1b	45.61	47.61
Pod maturity 19-2	D2	104.44	106.44
Pod maturity 19-3	N	33.65	35.65
Pod maturity 19-4	B2	72.2	74.2
Pod maturity 19-5	C2	11.19	13.19
Pod maturity 19-6	J	11.41	13.41
Pod maturity 19-7	O	81.08	83.08
Pod maturity 19-8	G	95.57	97.57
Pod maturity 20-1	F	76.69	78.69
Pod maturity 20-2	N	36.98	38.98
Pod maturity 21-1	C2	112.83	126.23
Pod maturity 21-2	No Positional Data		
Pod maturity 21-3	No Positional Data		
Pod maturity 21-4	No Positional Data		
Pod maturity 22-1	A2	53.91	55.91
Pod maturity 22-2	B1	99.87	101.87

Pod maturity 22-3	C2	120.6	122.6
Pod maturity 22-4	D1b	36.07	38.07
Pod maturity 22-5	F	2.35	4.35
Pod maturity 22-6	G	3.53	5.53
Pod maturity 22-7	O	4.44	6.44
Pod maturity 22-8	F	1.35	3.35
Pod maturity 22-9	G	3.53	5.53
Pod maturity 22-10	No Positional Data		
Pod maturity 23-1	I	85.73	87.73
Pod maturity 24-1	B2	70.33	87.33
Pod maturity 24-2	F	41.47	50.77
Pod maturity 24-3	L	0	11.12
Pod maturity 24-4	L	64.09	78.79
Pod maturity 24-5	I	18.15	36.4
Pod maturity 24-6	B1	21.99	32.5
Pod maturity 24-7	M	65.79	74.52
Pod maturity 24-8	I	52.11	58.07
Pod maturity 24-9	O	49.7	71.09
Pod maturity 24-10	L	68.26	92
Pod maturity 24-11	B2	66.23	78.83
Pod maturity 25-1	C2	112.95	114.95
Pod maturity 25-2	C2	106.58	108.58
Pod maturity 26-1	C2	26.65	44.66
Pod maturity 26-2	H	46.95	53.34
Pod maturity 26-3	O	106.02	112.16
Pod maturity 27-1	C1	5.37	12.67

Pod maturity 27-2	K	80.48	82.48
Pod maturity 27-3	B2	82.59	84.59
Pod maturity 27-4	D2	78.13	80.73
Pod maturity 27-5	G	93.5	106.5
Pod maturity 27-6	N	91.55	93.55
Pod maturity 27-7	E	70.3	72.3
Pod maturity 27-8	G	93.99	107.99
Pod maturity 28-1	D1b	74	76
Pod maturity 28-2	C1	73.45	75.45
Pod maturity 28-3	C2	106.58	108.58
Pod maturity 28-4	C2	112.95	114.95
Pod maturity 28-5	K	107.19	109.19
Pod maturity 28-6	O	38.92	40.92
Pod maturity 29-1	C1	5.37	12.67
Pod maturity 29-2	K	80.48	82.48
Pod maturity 29-3	B2	82.59	84.59
Pod maturity 29-4	D2	78.13	80.73
Pod maturity 29-5	G	93.5	106.5
Pod maturity 29-6	N	91.55	93.55
Pod maturity 29-7	E	70.3	72.3
Pod maturity 29-8	G	93.99	107.99
Pod maturity 30-1	H	81.04	89.51
Pod maturity 31-1	A1	30.13	38.13
Pod maturity 31-2	E	44.4	46.4
Pod maturity 31-3	H	88.08	90.08
Pod maturity 31-4	I	81.77	83.77

Pod maturity 32-1	C1	78.65	92.98
Pod maturity 32-2	C2	112.83	113.95
Pod maturity 32-3	O	112.6	119.5
Pod maturity 33-1	C1	78.65	92.98
Pod maturity 33-2	C2	112.83	113.95
Pod maturity 33-3	O	112.16	119.5
Pod maturity 34-1	C2	91.8	107.58
Pod maturity 34-2	C2	113.95	117.45
Pod maturity 34-3	C2	117.45	121.26
Pod maturity 34-4	E	12.92	19.7
Pod maturity 34-5	G	52.93	62.16
Pod maturity 34-6	M	103.98	130.75
Pod maturity 34-7	G	63	94.4
Pod maturity 35-1	B1	53.96	81.07
Pod maturity 35-2	H	31.79	48.3
Pod maturity 35-3	C1	122.75	124.75
Pod maturity 36-1	No Positional Data		
Pod maturity 37-1	A1	30.13	32.13
Pod maturity 37-2	E	44.4	46.4
Pod maturity 37-3	H	88.08	90.08
Pod maturity 37-4	I	81.77	83.77

²⁾ Data are from <http://soybase.org/>. First flower is beginning flower. Pod maturity is beginning maturity.

Appendix B The GWAS QTL related to flowering time and maturity³⁾

GWAS QTL name	Associated locus	p-value	Candidate gene	Chromosome	Linkage Group
First flower 2-g1	ss715580093	4.50E-05	Glyma01g37980	Gm01	D1a
First flower 2-g2	ss715582789	1.90E-04	Glyma02g05580	Gm02	D1b
First flower 2-g3	ss715595388	1.50E-07	Glyma06g08270	Gm06	C2
First flower 2-g4	ss715593623	3.20E-05	Glyma06g20310	Gm06	C2
First flower 2-g5	ss715594028	4.40E-05		Gm06	C2
First flower 2-g6	ss715598422	7.10E-05		Gm07	M
First flower 2-g7	ss715598611	1.70E-04	Glyma07g08890, Glyma07g08831	Gm07	M
First flower 2-g8	ss715595840	4.30E-05		Gm07	M
First flower 2-g9	ss715597834	2.10E-04		Gm07	M
First flower 2-g10	ss715599973	3.60E-05		Gm08	A2
First flower 2-g11	ss715602265	4.80E-05	Glyma08g44640, Glyma08g44650	Gm08	A2
First flower 2-g12	ss715602298	5.60E-06		Gm08	A2
First flower 2-g13	ss715602313	5.20E-05	Glyma08g45680	Gm08	A2
First flower 2-g14	ss715604771	5.40E-05		Gm09	K
First flower 2-g15	ss715605256	1.90E-04		Gm09	K
First flower 2-g16	ss715605368	2.10E-05	Glyma09g07980	Gm09	K
First flower 2-g17	ss715609022	2.00E-04	Glyma11g02230	Gm11	B1
First flower 2-g18	ss715609443	2.10E-06	Glyma11g20470	Gm11	B1
First flower 2-g19	ss715616244	8.50E-05	Glyma13g38975	Gm13	F
First flower 2-g20	ss715618211	9.20E-05		Gm14	B2
First flower 2-g21	ss715619036	2.80E-05	Glyma14g36221	Gm14	B2
First flower 2-g22	ss715630848	1.30E-05		Gm18	G
First flower 2-g23	ss715632359	1.40E-06		Gm18	G
First flower 2-g24	ss715635043	6.90E-05		Gm19	L

First flower 2-g25	ss715637153	3.70E-05	Glyma20g00440	Gm20	I
First flower 2-g26.1	ss715637021	1.60E-06	Glyma20g16880	Gm20	I
First flower 2-g26.2	ss715637130	5.50E-08		Gm20	I
First flower 2-g26.3	ss715637162	5.50E-08		Gm20	I
First flower 2-g26.4	ss715637211	9.10E-08		Gm20	I
First flower 2-g26.5	ss715637240	9.70E-08	Glyma20g21082	Gm20	I
First flower 2-g27	ss715638945	5.60E-05	LOC100812369	Gm20	I
First flower 3-g1	Satt408	8.51E-03		Gm01	D1a
First flower 3-g2	Satt521	1.20E-03		Gm03	N
First flower 3-g3	Satt322	5.89E-03		Gm06	C2
First flower 3-g4	Satt636	8.71E-03		Gm07	M
First flower 3-g5	Satt150	1.00E-02		Gm07	M
First flower 3-g6	Satt417	9.12E-03		Gm09	K
First flower 3-g7	Satt405	8.32E-03		Gm16	J
First flower 3-g8	Satt285	9.12E-03		Gm16	J
First flower 3-g9	scct010	1.00E-03		Gm18	G
First flower 3-g10	Satt564	9.12E-04		Gm18	G
First flower 3-g11	Satt614	8.32E-03		Gm20	I
First flower 4-g1	ss715580441		Glyma01g41590, Glyma01g41850, Glyma01g42230	Gm01	D1a
First flower 4-g2	ss715580458		Glyma01g42110	Gm01	D1a
First flower 4-g3	ss715580930		Glyma02g12220	Gm02	D1b
First flower 4-g4	ss715581063		Glyma02g13401, Glyma02g13420	Gm02	D1b
First flower 4-g5	ss715581544			Gm02	D1b
First flower 4-g6	Sat135			Gm02	D1b
First flower 4-g7	ss715584359		Glyma03g01540	Gm03	N
First flower 4-g8	ss715586851		Glyma03g05180	Gm03	N

First flower 4-g9	ss715585486	Glyma03g28740	Gm03	N
First flower 4-g10	ss715585735	Glyma03g30340, Glyma03g30460, Glyma03g30910	Gm03	N
First flower 4-g11	ss715588549	Glyma04g06240	Gm04	C1
First flower 4-g12	ss715587914	Glyma04g33270, Glyma04g33410, Glyma04g33110	Gm04	C1
First flower 4-g13	ss715588277	Glyma04g36450, Glyma04g36620, Glyma04g36630	Gm04	C1
First flower 4-g14	ss715588716	Glyma04g40090, Glyma04g40150, Glyma04g40640	Gm04	C1
First flower 4-g15	ss715592433	Glyma05g00880	Gm05	A1
First flower 4-g16	ss715590043	Glyma05g02220	Gm05	A1
First flower 4-g17	ss715590291	Glyma05g21880, Glyma05g21790	Gm05	A1
First flower 4-g18	ss715591655	Glyma05g34280, Glyma05g34030	Gm05	A1
First flower 4-g19	ss715591933	Glyma05g36400, Glyma05g36560	Gm05	A1
First flower 4-g20	ss715593870	Glyma06g02990	Gm06	C2
First flower 4-g21	ss715593923	Glyma06g02990	Gm06	C2
First flower 4-g22	Satt422		Gm06	C2
First flower 4-g23	ss715597129	Glyma07g04290	Gm07	M
First flower 4-g24	ss715599242	Glyma08g15610	Gm08	A2
First flower 4-g25	ss715601867	Glyma08g40860	Gm08	A2
First flower 4-g26	ss715603345		Gm09	K
First flower 4-g27	ss715603362		Gm09	K
First flower 4-g28	ss715604272	Glyma09g33340, Glyma09g33350	Gm09	K
First flower 4-g29	ss715604703	Glyma09g37810, Glyma09g38370	Gm09	K
First flower 4-g30	ss715605907	Glyma10g02840	Gm10	O
First flower 4-g31	ss715608856	Glyma11g01640, Glyma11g01700, Glyma11g02060, Glyma11g02140	Gm11	B1
First flower 4-g32	ss715610661	Glyma11g05550, Glyma11g05720	Gm11	B1
First flower 4-g33	ss715610738	Glyma11g06480, Glyma11g06300	Gm11	B1

First flower 4-g34	ss715610817	Glyma11g06840, Glyma11g12460	Gm11	B1
First flower 4-g35	ss715611002	Glyma11g09280, Glyma11g09400	Gm11	B1
First flower 4-g36	ss715611047		Gm11	B1
First flower 4-g37	Satt197	Glyma11g12460	Gm11	B1
First flower 4-g38	ss715608789	Glyma11g15504	Gm11	B1
First flower 4-g39	ss715608852	Glyma11g14920, Glyma11g15650, Glyma11g15760, Glyma11g16050	Gm11	B1
First flower 4-g40	ss715609355	Glyma11g19830	Gm11	B1
First flower 4-g41	ss715609441	Glyma11g20220	Gm11	B1
First flower 4-g42	ss715609629	Glyma11g20420, Glyma11g20240	Gm11	B1
First flower 4-g43	ss715609985	Glyma11g31940	Gm11	B1
First flower 4-g44	ss715610038	Glyma11g31940	Gm11	B1
First flower 4-g45	ss715610231	Glyma11g34250	Gm11	B1
First flower 4-g46	ss715613207	Glyma12g07926, Glyma12g08290	Gm12	H
First flower 4-g47	ss715613581		Gm12	H
First flower 4-g48	ss715611482		Gm12	H
First flower 4-g49	ss715611521		Gm12	H
First flower 4-g50	Satt586	Glyma13g09980	Gm13	F
First flower 4-g51	ss715614149	Glyma13g19910	Gm13	F
First flower 4-g52	ss715616199	Glyma13g38140, Glyma13g3825	Gm13	F
First flower 4-g53	ss715619864	Glyma14g09231, Glyma14g09340	Gm14	B2
First flower 4-g54	ss715618957		Gm14	B2
First flower 4-g55	ss715619034	Glyma14g36100, Glyma14g36150	Gm14	B2
First flower 4-g56	ss715619529	Glyma14g40450	Gm14	B2
First flower 4-g57	ss715620467	Glyma15g02030, Glyma15g02040	Gm15	E
First flower 4-g58	ss715620540		Gm15	E
First flower 4-g59	ss715621397		Gm15	E

First flower 4-g60	ss715621702		Gm15	E
First flower 4-g61	Satt452		Gm15	E
First flower 4-g62	ss715621994		Gm15	E
First flower 4-g63	ss715625240		Gm16	J
First flower 4-g64	SSRFT	Glyma16g26660, Glyma16g26690	Gm16	J
First flower 4-g65	ss715624371		Gm16	J
First flower 4-g66	ss715624819	Glyma16g32540, Glyma16g32550, Glyma16g32610	Gm16	J
First flower 4-g67	ss715627222	Glyma17g33480	Gm17	D2
First flower 4-g68	ss715627791	Glyma17g37580	Gm17	D2
First flower 4-g69	ss715630568	Glyma18g05916, Glyma18g05963	Gm18	G
First flower 4-g70	ss715630327		Gm18	G
First flower 4-g71	ss715630399		Gm18	G
First flower 4-g72	Satt564	Glyma18g39740, Glyma18g3977	Gm18	G
First flower 4-g73	ss715631834		Gm18	G
First flower 4-g74	ss715636097	Glyma19g05170	Gm19	L
First flower 4-g75	ss715634291	Glyma19g28250	Gm19	L
First flower 4-g76	ss715634905	Glyma19g31720, Glyma19g31960	Gm19	L
First flower 4-g77	Sat113	Glyma19g34740, Glyma19g34550	Gm19	L
First flower 4-g78	Satt664	Glyma19g39460	Gm19	L
First flower 4-g79	ss715635619	Glyma19g40090, Glyma19g40630	Gm19	L
First flower 4-g80	Satt229	Glyma19g40630, Glyma19g40640, Glyma19g40980	Gm19	L
First flower 4-g81	ss715635705	Glyma19g40970, Glyma19g41210, Glyma19g4126	Gm19	L
First flower 4-g82	ss715635983	Glyma19g44310, Glyma19g44670	Gm19	L
First flower 4-g83	Satt571	Glyma20g01610, Glyma20g01760	Gm20	I
First flower 4-g84	ss715638062	Glyma20g03988	Gm20	I

First flower 4-g85	ss715637988		Glyma20g28670, Glyma20g29210, Glyma20g29250	Gm20	I
First flower 4-g86	ss715638506		Glyma20g35020, Glyma20g35220	Gm20	I
First flower 4-g87	ss715638616		Glyma20g35910	Gm20	I
First flower 5-g1.1	Chr10_447318 93	1.41E-14		Gm10	O
First flower 5-g1.2	Chr10_453107 98	1.41E-14		Gm10	O
First flower 5-g1.3	Chr10_454651 89	1.41E-14		Gm10	O
First flower 5-g2	Chr11_250331 66	7.41E-09		Gm11	B1
First flower 5-g3	Chr19_431834 81	1.20E-07		Gm19	L
First flower 5-g4.1	Chr02_101820 71	6.31E-09		Gm02	D1b
First flower 5-g4.2	Chr02_102864 40	6.31E-09		Gm02	D1b
First flower 5-g5.1	Chr02_123161 10	1.00E-08		Gm02	D1b
First flower 5-g5.2	Chr02_124089 88	1.00E-08		Gm02	D1b
First flower 5-g6	Chr03_391977 6	2.34E-07		Gm03	N
First flower 5-g7.1	Chr06_200572 04	1.02E-07		Gm06	C2
First flower 5-g7.2	Chr06_200970 64	1.02E-07		Gm06	C2
First flower 5-g7.3	Chr06_202975 43	1.02E-07		Gm06	C2
First flower 5-g8.1	Chr09_455945 06	1.45E-07		Gm09	K
First flower 5-g8.2	Chr09_456325 66	1.45E-07		Gm09	K
First flower 5-g9	Chr11_108207 46	2.19E-07		Gm11	B1
First flower 5-g10.1	Chr12_547550 3	1.17E-08		Gm12	H
First flower 5-g10.2	Chr12_550477 3	1.17E-08		Gm12	H
First flower 5-g10.3	Chr12_552992 6	1.17E-08		Gm12	H

First flower 5-g11	Chr14_473469 21	2.09E-07	Gm14	B2
First flower 5-g12.1	Chr18_572690 28	1.41E-08	Gm18	G
First flower 5-g12.2	Chr18_572693 74	1.41E-08	Gm18	G
First flower 5-g12.3	Chr18_572720 16	1.41E-08	Gm18	G
First flower 5-g13	Chr20_342565 61	2.14E-07	Gm20	I
First flower 5-g14.1	Chr05_400125 87	1.23E-07	Gm05	A1
First flower 5-g14.2	Chr05_400163 23	1.23E-07	Gm05	A1
First flower 5-g15.1	Chr10_447109 44	2.82E-14	Gm10	O
First flower 5-g15.2	Chr10_453107 98	2.82E-14	Gm10	O
First flower 5-g15.3	Chr10_454651 89	2.82E-14	Gm10	O
First flower 5-g16.1	Chr11_249625 16	3.72E-10	Gm11	B1
First flower 5-g16.2	Chr11_250331 66	3.72E-10	Gm11	B1
First flower 5-g16.3	Chr11_250552 97	3.72E-10	Gm11	B1
First flower 5-g17	Chr19_431834 81	7.24E-08	Gm19	L
First flower 5-g18	Chr01_289302 4	4.17E-08	Gm01	D1a
First flower 5-g19.1	Chr02_981570 7	1.45E-08	Gm02	D1b
First flower 5-g19.2	Chr02_101820 71	1.45E-08	Gm02	D1b
First flower 5-g19.3	Chr02_102864 40	1.45E-08	Gm02	D1b
First flower 5-g20.1	Chr02_123161 10	1.48E-07	Gm02	D1b
First flower 5-g20.2	Chr02_124081 15	1.48E-07	Gm02	D1b
First flower 5-g21	Chr03_391977 6	6.92E-08	Gm03	N
First flower 5-g22.1	Chr03_513980 1	2.14E-07	Gm03	N

First flower 5-g22.2	Chr03_514626 2	2.14E-07	Gm03	N
First flower 5-g23.1	Chr06_191780 35	7.08E-08	Gm06	C2
First flower 5-g23.2	Chr06_200970 64	7.08E-08	Gm06	C2
First flower 5-g23.3	Chr06_202994 54	7.08E-08	Gm06	C2
First flower 5-g24.1	Chr11_108207 46	1.32E-08	Gm11	B1
First flower 5-g24.2	Chr11_108361 70	1.32E-08	Gm11	B1
First flower 5-g25.1	Chr11_317186 86	2.45E-08	Gm11	B1
First flower 5-g25.2	Chr11_317305 16	2.45E-08	Gm11	B1
First flower 5-g25.3	Chr11_317310 24	2.45E-08	Gm11	B1
First flower 5-g26.1	Chr12_547550 3	5.89E-09	Gm12	H
First flower 5-g26.2	Chr12_550477 3	5.89E-09	Gm12	H
First flower 5-g26.3	Chr12_552992 6	5.89E-09	Gm12	H
First flower 5-g27.1	Chr13_374788 51	1.74E-07	Gm13	F
First flower 5-g27.2	Chr13_374984 90	1.74E-07	Gm13	F
First flower 5-g28	Chr14_127444 42	1.78E-07	Gm14	B2
First flower 5-g29.1	Chr15_131333 51	1.00E-08	Gm15	E
First flower 5-g29.2	Chr15_131609 07	1.00E-08	Gm15	E
First flower 5-g29.3	Chr15_131609 63	1.00E-08	Gm15	E
First flower 5-g30.1	Chr17_223381 5	1.38E-07	Gm17	D2
First flower 5-g30.2	Chr17_223947 0	1.38E-07	Gm17	D2
First flower 5-g30.3	Chr17_223954 3	1.38E-07	Gm17	D2
First flower 5-g31.1	Chr18_572693 74	5.62E-08	Gm18	G

First flower 5-g31.2	Chr18_572720 16	5.62E-08		Gm18	G
First flower 5-g32	Chr20_342565 61	2.00E-07		Gm20	I
First flower 6-g1	Satt335			Gm13	F
First flower 6-g2	Satt150			Gm07	M
First flower 6-g3	BE806308			Gm11	B1
First flower 6-g4	Satt440			Gm20	I
First flower 6-g5	Satt564			Gm18	G
First flower 6-g6	Satt443			Gm17	D2
First flower 6-g7	Satt102			Gm20	I
First flower 6-g8	Satt445			Gm10	O
First flower 6-g9	Satt387			Gm03	N
First flower 6-g10	Satt308			Gm07	M
First flower 6-g11	Satt489			Gm06	C2
First flower 6-g12	Satt307			Gm06	C2
First flower 6-g13	Satt216			Gm02	D1b
First flower 6-g14	BE475343			Gm02	D1b
First flower 6-g15	Satt467			Gm14	B2
First flower 6-g16	Satt567			Gm07	M
First flower 6-g17	BE806387			Gm13	F
First flower 6-g18	Satt538			Gm08	A2
First flower 7-g1	ss715580093	4.50E-05	Glyma01g37980	Gm01	D1a
First flower 7-g2	ss715582789	1.90E-04	Glyma02g05580	Gm02	D1b
First flower 7-g3	ss715595388	1.50E-07	Glyma06g08270	Gm06	C2
First flower 7-g4	ss715593623	3.20E-05	Glyma06g20310	Gm06	C2
First flower 7-g5	ss715594028	4.40E-05		Gm06	C2
First flower 7-g6	ss715598422	7.10E-05		Gm07	M

First flower 7-g7	ss715598611	1.70E-04	Glyma07g08890, Glyma07g08831	Gm07	M
First flower 7-g8	ss715595840	4.30E-05		Gm07	M
First flower 7-g9	ss715597834	2.10E-04		Gm07	M
First flower 7-g10	ss715599973	3.60E-05		Gm08	A2
First flower 7-g11	ss715602265	4.80E-05	Glyma08g44640, Glyma08g44650	Gm08	A2
First flower 7-g12	ss715602298	5.60E-06		Gm08	A2
First flower 7-g13	ss715602313	5.20E-05	Glyma08g45680	Gm08	A2
First flower 7-g14	ss715604771	5.40E-05		Gm09	K
First flower 7-g15	ss715605256	1.90E-04		Gm09	K
First flower 7-g16	ss715605368	2.10E-05	Glyma09g07980	Gm09	K
First flower 7-g17	ss715609022	2.00E-04	Glyma11g02230	Gm11	B1
First flower 7-g18	ss715609443	2.10E-06	Glyma11g20470	Gm11	B1
First flower 7-g19	ss715616244	8.50E-05	Glyma13g38975	Gm13	F
First flower 7-g20	ss715618221	9.20E-05		Gm14	B2
First flower 7-g21	ss715619036	2.80E-05	Glyma14g36221	Gm14	B2
First flower 7-g22	ss715630848	1.30E-05		Gm18	G
First flower 7-g23	ss715632359	1.40E-06		Gm18	G
First flower 7-g24	ss715635043	6.90E-05		Gm19	L
First flower 7-g25	ss715637153	3.70E-05	Glyma20g00440	Gm20	I
First flower 7-g26	ss715637021	1.60E-06	Glyma20g16880	Gm20	I
First flower 7-g27	ss715637130	5.50E-08		Gm20	I
First flower 7-g28	ss715637162	5.50E-08		Gm20	I
First flower 7-g29	ss715637211	9.10E-08		Gm20	I
First flower 7-g30	ss715637240	9.70E-08	Glyma20g21082	Gm20	I
First flower 7-g31	ss715638945	5.60E-05	LOC100812369	Gm20	I
First flower 8-g1	Gm05:3131408			Gm05	A1

First flower 8-g2	ss715590833			Gm05	A1
First flower 8-g3.1	Gm06:1991955 1			Gm06	C2
First flower 8-g3.2	Gm06:2026384 8			Gm06	C2
First flower 8-g4	ss715603528			Gm09	K
First flower 8-g5.1	ss715607557			Gm10	O
First flower 8-g5.2	ss715607586			Gm10	O
First flower 8-g6.1	ss715622345			Gm15	E
First flower 8-g6.2	ss715622784			Gm15	E
R8 full maturity 2-g1	ss715608733	5.20E-06	Glyma11g14150		
R8 full maturity 2-g2	ss715623784	2.50E-06	Glyma16g02840		
R8 full maturity 2-g3	ss715623939	4.30E-06			
R8 full maturity 2-g4	ss715624268	3.80E-06	Glyma16g03580		
R8 full maturity 2-g5	ss715635425	7.60E-06	Dt1		
R8 full maturity 2-g6	ss715635754	1.10E-05			
R8 full maturity 3-g1	Satt408	1.00E-02		Gm01	D1a
R8 full maturity 3-g2	Satt641	7.94E-03		Gm03	N
R8 full maturity 3-g3	Satt521	2.45E-06		Gm03	N
R8 full maturity 3-g4	Sat_304	6.03E-03		Gm03	N
R8 full maturity 3-g5	Satt718	5.89E-03		Gm04	C1
R8 full maturity 3-g6	sctt010	2.51E-04		Gm18	G
R8 full maturity 3-g7	Satt564	4.79E-03		Gm18	G
R8 full maturity 3-g8	Satt614	4.57E-03		Gm20	I
R8 full maturity 4-g1	FB47468838	2.19E-06			
R8 full maturity 5-g1	Chr05_418544 22	1.35E-07		Gm05	A1
R8 full maturity 5-g2.1	Chr10_445874 41	2.82E-15		Gm10	O

R8 full maturity 5-g2.2	Chr10_453107 98	2.82E-15		Gm10	O
R8 full maturity 5-g2.3	Chr10_455486 20	2.82E-15		Gm10	O
R8 full maturity 5-g3	Chr06_467426 23	1.95E-07		Gm06	C2
R8 full maturity 5-g4.1	Chr16_274958 98	4.07E-08		Gm16	J
R8 full maturity 5-g4.2	Chr16_279542 20	4.07E-08		Gm16	J
R8 full maturity 5-g4.3	Chr16_279567 42	4.07E-08		Gm16	J
R8 full maturity 8-g1	AW310961			Gm16	J
R8 full maturity 8-g10	Satt307			Gm06	C2
R8 full maturity 8-g11	Satt335			Gm13	F
R8 full maturity 8-g12	BE806308			Gm11	B1
R8 full maturity 8-g13	Satt440			Gm20	I
R8 full maturity 8-g14	Satt387			Gm03	N
R8 full maturity 8-g15	Satt445			Gm10	O
R8 full maturity 8-g16	Satt489			Gm06	C2
R8 full maturity 8-g2	Sat_312			Gm06	C2
R8 full maturity 8-g3	Satt434			Gm12	H
R8 full maturity 8-g4	Satt286			Gm06	C2
R8 full maturity 8-g5	Satt496			Gm20	I
R8 full maturity 8-g6	Satt046			Gm09	K
R8 full maturity 8-g7	AW132402			Gm08	A2
R8 full maturity 8-g8	Sat_174			Gm20	I
R8 full maturity 8-g9	BE475343			Gm02	D1b
R8 full maturity 9-g1	ss715608733	5.20E-06	Glyma11g14150		
R8 full maturity 9-g2	ss715623784	2.50E-06	Glyma16g02840		
R8 full maturity 9-g3	ss715623939	4.30E-06			

R8 full maturity 9-g4	ss715624268	3.80E-06	Glyma16g03580		
R8 full maturity 9-g5	ss715635425	7.60E-06		Dt1	
R8 full maturity 9-g6	ss715635754	1.10E-05			
R8 full maturity 10-g1	Gm03:3860282 4			Gm03	N
R8 full maturity 10-g2.1	ss715590242			Gm05	A1
R8 full maturity 10-g2.2	ss715589992			Gm05	A1
R8 full maturity 10-g3.1	Gm06:1138638 8			Gm06	C2
R8 full maturity 10-g3.2	Gm06:2026384 8			Gm06	C2
R8 full maturity 10-g4.1	ss715607007			Gm10	O
R8 full maturity 10-g4.2	ss715607569			Gm10	O
R8 full maturity 10-g5.1	Gm13:1522660 3			Gm13	F
R8 full maturity 10-g5.2	Gm13:1527811 6			Gm13	F
R8 full maturity 10-g6.1	ss715614738			Gm13	F
R8 full maturity 10-g6.2	ss715615119			Gm13	F
R8 full maturity 10-g7.1	ss715615139			Gm13	F
R8 full maturity 10-g7.2	ss715615249			Gm13	F
R8 full maturity 10-g8	ss715624676			Gm16	J
R8 full maturity 10-g9.1	ss715627810			Gm17	D2
R8 full maturity 10-g9.2	ss715627813			Gm17	D2

³⁾ Data are from <http://soybase.org/>. First flower is beginning flower.