

Table 1 405 SSR markers information

ID	SSR loci	Linkage group	Locus	Alleles	Mean	Mean	Mean	
1	Sat_137	A1	0	4	0.66418	0.53367	2.1574	1.797
2	Sat_217	A1	3.542	3	0.57144		1.8961	
3	sat_265	A1	14.369	3	0.35661		1.0721	
4	Sat_368	A1	17.162	4	0.35701		1.299	
5	Sat_385	A1	26.42	3	0.38775		1.3884	
6	Satt050	A1	27.784	6	0.67954		2.7902	
7	satt073	A1	28.955	3	0.38016		0.1711	
8	satt155	A1	30.926	7	0.68273		2.7379	
9	Satt174	A1	31.074	4	0.44371		1.5653	
10	Satt211	A1	31.144	4	0.61364		2.132	
11	Satt225	A1	32.675	3	0.58976		1.9004	
12	Satt236	A1	33.275	3	0.52467		1.7418	
13	Satt276	A1	33.971	5	0.71037		2.3672	
14	Satt300	A1	46.454	4	0.48873		1.7056	
15	Satt364	A1	88.577	4	0.57794		1.87	
16	Satt382	A1	93.229	5	0.72226		2.3757	
17	Satt449	A1	95.16	4	0.57655		1.9277	
18	Satt591	A1	95.962	3	0.22013		0.862	
19	Satt684	A1	101.565	4	0.43609		1.5191	
20	Satt619	A1	69.206	5	0.69007		2.4609	
21	Sat_040	A2	9.143	3	0.17585	0.48137	0.7249	1.77202
22	Sat_294	A2	14.991	5	0.72385		2.3817	
23	Sat_377	A2	36.77	2	0.0454		0.2368	
								Continued Table 1
ID	SSR loci	Linkage group	Locus	Alleles	Mean	Mean	Mean	
24	sat_382	A2	51.505	3	0.42453		1.4788	
25	Sat_392	A2	54.917	3	0.52444		1.7439	
26	Satt133	A2	90.84	3	0.51973		1.739	
27	Satt177	A2	96.974	4	0.51995		1.8375	
28	Satt187	A2	106.29	4	0.67053		2.3479	
29	Satt209	A2	107.051	4	0.65051		2.3934	
30	Satt228	A2	108.782	3	0.31845		1.1712	
31	Satt333	A2	116.407	4	0.39054		1.4367	
32	Satt377	A2	116.64	4	0.43849		1.1407	
33	Satt378	A2	116.731	6	0.75217		3.3464	
34	Satt390	A2	118.639	6	0.75541		3.4549	
35	Satt409	A2	119.59	4	0.66436		2.2407	
36	Satt437	A2	125.382	4	0.44867		1.5887	
37	satt470	A2	128.441	2	0.01492		0.089	
38	satt508	A2	131.97	4	0.45731		1.3902	
39	Satt525	A2	145.565	2	0.37221		1.3752	
40	Satt538	A2	154.114	3	0.42782		1.5213	
41	Satt632	A2	159.63	6	0.63027		2.3245	
42	Sct_067	A2	165.73	5	0.66473		2.5837	
43	Sat_123	B1	32.51	4	0.65731	0.52652	2.4664	1.80566
44	Sat_247	B1	36.479	3	0.34423		1.2626	
45	sat_364	B1	37.799	4	0.5958		2.0016	

46	Satt197	B1	46.393	4	0.66539		2.2601	
47	Satt251	B1	49.731	4	0.60214		2.1245	
48	Satt444	B1	73.767	3	0.12438		0.5307	
49	Satt453	B1	78.127	3	0.55079		1.8088	
50	Satt484	B1	84.249	4	0.61994		2.266	
51	Satt509	B1	85.916	3	0.13033		0.5132	
52	satt597	B1	100.877	4	0.4742		1.0236	
53	satt638	B1	118.531	6	0.41666		0.5452	
54	Sct_026	B1	123.962	4	0.63851		2.5354	
55	Satt583	B1	84.189	8	0.82014		4.1355	
56	Sat_177	B2	6.047	5	0.63974	0.48972	2.427	1.68146
57	Sat_189	B2	7.843	5	0.50208		1.8369	
58	Sat_264	B2	12.558	6	0.74193		2.5932	
59	Satt020	B2	17.774	3	0.34415		1.1858	
60	Satt063	B2	27.632	6	0.5446		1.911	
61	Satt066	B2	55.198	6	0.4091		1.5201	
62	Satt070	B2	65.555	3	0.4945		1.6703	
63	Satt126	B2	70.56	5	0.51031		1.4147	
64	Satt168	B2	72.127	4	0.3981		1.4298	
65	Satt304	B2	72.808	3	0.30559		1.0782	
66	Satt467	B2	72.918	3	0.14433		0.5047	
67	Satt474	B2	73.213	4	0.5756		1.8524	
68	Satt534	B2	75.346	5	0.69325		2.2851	
69	Satt556	B2	78.844	4	0.51182		1.7937	

Continued Table 1

ID	SSR loci	Linkage group	Locus	Alleles		Mean		Mean
70	Satt560	B2	87.592	3	0.29027		1.077	
71	Satt577	B2	93.488	5	0.75295		2.5198	
72	Satt687	B2	97.924	6	0.55295		1.6956	
73	Satt726	B2	100.548	3	0.58308		1.8882	
74	SCT_094	B2	113.614	4	0.53694		1.8539	
75	Sat_009	B2	78.661	3	0.34816		1.2615	
76	Sct_064	B2	89.307	4	0.40459		0.3976	
77	Sat_042	C1	0	4	0.49936	0.45782	1.7251	1.74335
78	Sat_331	C1	9.02	5	0.73141		3.1082	
79	Satt136	C1	10.336	4	0.49529		1.2304	
80	Satt161	C1	24.106	5	0.53724		1.932	
81	satt164	C1	26.353	6	0.72674		3.0401	
82	Satt180	C1	65.078	6	0.76578		3.456	
83	Satt190	C1	67.025	5	0.57877		1.971	
84	Satt194	C1	73.324	3	0.43655		1.5533	
85	Satt361	C1	73.393	2	0.1501		0.6042	
86	Satt396	C1	73.788	7	0.5673		2.0189	
87	Satt399	C1	75.105	3	0.16995		0.6916	
88	Satt565	C1	75.52	3	0.45954		1.6044	
89	Satt578	C1	76.228	4	0.59683		2.0092	
90	Satt607	C1	82.506	3	0.40206		1.4497	
91	Satt718	C1	125.742	3	0.40073		1.409	
92	Sct_186	C1	127.774	2	0.32579		1.1998	

93	SOYGPATR	C1	132.458	3	0.52258		1.7564	
94	AW277661	C1	74.79	3	0.14836		0.621	
95	Sat_252	C2	4.223	4	0.67703	0.50503	2.1905	1.78045
96	AW734043	C2	26.649	4	0.57751		2.0119	
97	GmAC7L	C2	30.467	3	0.34065		1.2401	
98	Sat_062	C2	30.801	7	0.72902		2.7081	
99	Sat_076	C2	40.298	7	0.65605		2.3387	
100	Sat_213	C2	42.365	4	0.53636		1.866	
101	Sat_246	C2	44.662	3	0.34486		1.0976	
102	Sat_263	C2	45.757	4	0.44933		1.6095	
103	Sat_402	C2	69.665	5	0.72106		2.3724	
104	satt079	C2	75.431	3	0.40888		1.4982	
105	Satt100	C2	82.23	6	0.77417		2.5837	
106	Satt202	C2	89.305	3	0.43812		1.5599	
107	Satt227	C2	90.93	4	0.36553		1.3433	
108	Satt277	C2	91.805	4	0.53812		1.8298	
109	Satt281	C2	97.829	5	0.73145		2.9852	
110	Satt286	C2	99.181	4	0.5609		1.9134	
111	Satt289	C2	101.754	4	0.59767		2.149	
112	satt291	C2	103.328	6	0.52538		1.6086	
113	Satt305	C2	107.592	3	0.12689		0.5473	
114	Satt307	C2	111.682	5	0.55333		1.918	
115	Satt316	C2	112.189	3	0.481		1.6699	

Continued Table 1

ID	SSR loci	Linkage group	Locus	Alleles		Mean		Mean
116	Satt322	C2	112.352	3	0.2107		0.8225	
117	Satt365	C2	113.392	3	0.37498		1.3852	
118	Satt376	C2	113.96	3	0.55489		1.8288	
119	satt422	C2	117.766	4	0.59916		2.0337	
120	Satt450	C2	117.868	2	0.04163		0.2094	
121	Satt460	C2	118.782	4	0.70104		2.7692	
122	Satt489	C2	121.271	4	0.59163		1.9221	
123	Satt520	C2	126.236	3	0.50022		1.6812	
124	Satt557	C2	127.003	3	0.3774		1.3886	
125	Satt640	C2	127.668	5	0.57102		2.1123	
126	Sat_036	D1a	49.835	5	0.6428	0.53279	2.1988	1.88814
127	Sat_160	D1a	53.671	5	0.72672		2.7615	
128	Sat_201	D1a	54.499	4	0.5715		1.9121	
129	Sat_345	D1a	55.221	5	0.67411		2.4955	
130	Sat_346	D1a	55.681	4	0.49333		1.7195	
131	Sat_414	D1a	56.08	4	0.65992		2.1453	
132	Satt077	D1a	56.434	3	0.39902		1.473	
133	Satt198	D1a	56.566	2	0.36566		1.3611	
134	Satt254	D1a	60.969	4	0.62417		2.208	
135	Satt283	D1a	62.367	5	0.68417		2.7191	
136	Satt295	D1a	64.522	4	0.46467		1.6394	
137	Satt383	D1a	65.63	5	0.68049		2.3518	
138	Satt436	D1a	68.619	3	0.57747		1.8764	
139	Satt439	D1a	70.691	3	0.3723		1.3512	

140	Satt502	D1a	72.274	3	0.21249		0.6888	
141	satt507	D1a	75.251	4	0.45258		1.5982	
142	Satt515	D1a	77.49	4	0.59465		1.993	
143	Satt580	D1a	85.484	4	0.6291		2.2812	
144	Satt603	D1a	104.283	2	0.29789		1.1008	
145	Sat_089	D1b	0	4	0.34196	0.48464	1.2667	1.72289
146	Sat_096	D1b	9.8	5	0.69027		2.3084	
147	Sat_135	D1b	20.614	4	0.48443		1.6904	
148	Sat_254	D1b	37.073	5	0.66162		2.2098	
149	Sat_283	D1b	40.041	5	0.6833		2.7191	
150	Sat_289	D1b	46.617	3	0.58994		2.0354	
151	Sat_351	D1b	46.92	4	0.56439		1.8967	
152	Sat_423	D1b	52.613	3	0.42133		1.5148	
153	Satt005	D1b	59.61	4	0.57483		1.9302	
154	Satt041	D1b	67.625	3	0.34253		1.2432	
155	Satt141	D1b	70.653	5	0.43661		1.574	
156	Satt157	D1b	72.887	6	0.69531		2.3421	
157	Satt189	D1b	74.786	3	0.385		1.4267	
158	satt216	D1b	75.292	3	0.28127		1.0244	
159	Satt266	D1b	75.412	3	0.5888		1.901	
160	Satt274	D1b	75.674	3	0.49348		1.664	
161	Satt296	D1b	75.939	4	0.28062		1.054	

Continued Table 1

ID	SSR loci	Linkage group	Locus	Alleles		Mean		Mean
162	Satt350	D1b	76.283	3	0.36753		1.3269	
163	Satt428	D1b	76.323	3	0.57739		1.8763	
164	Satt459	D1b	76.596	3	0.36776		1.3078	
165	Satt506	D1b	77.349	3	0.38516		1.3652	
166	Satt537	D1b	84.04	5	0.54867		1.9121	
167	Satt546	D1b	87.204	3	0.38513		1.4272	
168	Satt579	D1b	98.745	8	0.73951		3.4182	
169	Satt600	D1b	116.35	4	0.48097		1.7092	
170	Satt634	D1b	118.618	4	0.25372		0.9555	
171	Satt701	D1b	131.917	4	0.63507		2.2868	
172	Satt703	D1b	136.659	3	0.41114		1.4344	
173	BE475343	D1b	30.743	4	0.38682		1.1434	
174	Sat_022	D2	16.756	6	0.77691	0.51852	3.526	1.90828
175	Sat_086	D2	26.049	4	0.59255		1.9966	
176	Sat_092	D2	47.726	6	0.76408		3.4678	
177	Sat_194	D2	57.07	4	0.63918		2.2046	
178	Sat_300	D2	57.505	7	0.72535		2.4703	
179	satt002	D2	67.712	3	0.47512		1.6324	
180	Satt031	D2	79.231	4	0.51217		1.8108	
181	Satt135	D2	85.148	4	0.261		1.0066	
182	Satt154	D2	85.686	3	0.53446		1.7829	
183	Satt186	D2	86.69	4	0.51316		1.77	
184	Satt226	D2	87.557	4	0.26224		0.9468	
185	Satt301	D2	87.666	6	0.67965		2.2944	
186	Satt328	D2	87.876	2	0.05159		0.25	

187	Satt386	D2	88.02	3	0.24551		0.8694	
188	Satt389	D2	93.709	8	0.80579		3.9422	
189	Satt514	D2	105.451	4	0.64713		2.1477	
190	Satt543	D2	114.966	3	0.56265		1.8458	
191	Satt574	D2	115.703	3	0.42995		1.5049	
192	Satt662	D2	118.662	3	0.53615		1.7877	
193	Satt669	D2	120.299	5	0.51649		1.8405	
194	Satt672	D2	124.998	4	0.59377		1.9389	
195	sct_137	D2	128.95	3	0.28245		0.9459	
196	sat_136	E	3.721	6	0.58268	0.43551	2.062	1.55723
197	Sat_273	E	12.919	3	0.39009		1.3722	
198	satt045	E	19.296	7	0.62122		2.4326	
199	Satt117	E	32.101	5	0.57102		2.1123	
200	satt151	E	32.272	4	0.5288		1.4972	
201	Satt185	E	34.197	3	0.56462		1.8449	
202	Satt212	E	39.162	2	0.34902		1.2832	
203	satt213	E	41.241	3	0.01507		0.0947	
204	Satt263	E	41.683	4	0.62908		2.0694	
205	Satt369	E	43.363	4	0.47681		1.6335	
206	Satt384	E	44.763	3	0.25448		0.97	
207	satt411	E	44.925	3	0.32224		1.1799	

Continued Table 1

ID	SSR loci	Linkage group	Locus	Alleles		Mean		Mean
208	satt452	E	44.976	3	0.33001		1.1896	
209	satt483	E	45.096	4	0.31921		1.1402	
210	satt598	E	45.397	2	0.33407		1.2094	
211	Satt602	E	45.627	4	0.47119		1.0434	
212	Satt651	E	45.782	6	0.77479		3.548	
213	Satt699	E	46.646	4	0.67403		2.5664	
214	satt706	E	47.501	3	0.34605		1.2723	
215	satt716	E	56.272	2	0.1558		0.6234	
216	AW186493	F	1.918	4	0.66191	0.48225	2.1548	1.6988
217	BE806387	F	2.233	4	0.70043		2.7536	
218	Sat_074	F	3.043	4	0.61974		2.0469	
219	Sat_090	F	3.634	3	0.57781		1.8804	
220	Sat_120	F	3.952	2	0.20053		0.7552	
221	Sat_133	F	5.361	3	0.39318		1.4246	
222	Sat_154	F	10.653	5	0.62944		2.1592	
223	Sat_240	F	15.291	4	0.66176		2.1482	
224	Sat_297	F	16.084	4	0.61957		2.0842	
225	Sat_309	F	18.125	3	0.29696		1.1082	
226	Satt030	F	20.564	4	0.61876		2.0712	
227	Satt114	F	21.036	7	0.72416		2.638	
228	Satt144	F	22.965	3	0.41667		0.6306	
229	Satt145	F	25.584	3	0.48368		1.6322	
230	Satt146	F	26.706	3	0.46761		1.5885	
231	Satt149	F	33.185	4	0.63749		2.104	
232	Satt160	F	41.471	6	0.731		3.152	
233	Satt252	F	43.013	4	0.28207		1.0523	

281	Sat_214	H	4.882	5	0.6208		2.0608
282	Sat_401	H	8.48	4	0.36984		1.3491
283	Satt052	H	28.803	4	0.45098		1.601
284	Satt181	H	38.894	4	0.61942		2.043
285	Satt192	H	44.035	5	0.40313		0.4031
286	Satt222	H	46.947	3	0.38577		1.324
287	Satt314	H	53.35	2	0.1323		0.5436
288	Satt353	H	58.906	6	0.53485		1.8389
289	Satt442	H	64.101	3	0.51824		1.7243
290	Satt469	H	66.21	6	0.48885		1.1473
291	Satt541	H	68.082	4	0.55234		1.8857
292	Satt635	H	68.182	6	0.5049		1.3944
293	Satt666	H	69.115	4	0.43283		0.7022
294	sctt009	H	91.116	3	0.42929		0.5645
295	GMGLPSI2	I	18.5	3	0.48991	0.50744	1.6607
296	Sat_268	I	27.979	4	0.62778		2.1139
297	Sat_299	I	31.494	3	0.43634		1.5025
298	Sat_418	I	33.984	6	0.67397		2.3073
299	Sat_419	I	35.347	5	0.67085		2.6366

Continued Table 1

ID	SSR loci	Linkage group	Locus	Alleles		Mean	Mean
300	Sat_421	I	36.935	4	0.28901		1.1023
301	Satt127	I	46.22	2	0.33848		1.2462
302	satt162	I	50.108	3	0.51703		1.725
303	Satt239	I	55.097	3	0.55406		1.8165
304	Satt270	I	74.263	6	0.59453		2.2092
305	Satt354	I	81.399	3	0.26727		1.0106
306	Satt367	I	86.741	5	0.70494		2.8303
307	Satt440	I	97.047	3	0.45525		1.5599
308	Satt571	I	98.113	4	0.5163		1.8032
309	Satt587	I	99.827	4	0.59155		1.9762
310	Sct_189	I	112.7	4	0.58683		1.9745
311	Sctt012	I	113.768	3	0.31238		1.1489
312	Sat_151	J	11.741	4	0.54032	0.56124	1.8385
313	Sat_224	J	12.409	4	0.65526		2.133
314	Sat_395	J	15.688	4	0.59092		1.9708
315	Satt132	J	25.513	3	0.25827		0.9826
316	Satt183	J	37.042	4	0.6954		2.231
317	Satt215	J	38.097	3	0.31264		1.1401
318	Satt244	J	38.192	4	0.64135		2.0991
319	Satt249	J	39.181	4	0.61686		2.2405
320	Satt285	J	39.643	2	0.27839		1.0336
321	Satt287	J	41.354	3	0.43416		1.5104
322	Satt405	J	41.903	5	0.70494		2.8324
323	Satt406	J	42.253	5	0.7318		2.6077
324	Satt414	J	42.505	4	0.50152		1.7259
325	Satt431	J	44.084	4	0.61755		2.2012
326	Satt529	J	65.037	3	0.57592		1.956
327	Satt547	J	67.786	4	0.64071		2.0982

328	Satt596	J	75.132	5	0.74567		2.4768	
329	satt622	J	78.569	4	0.50833		1.7885	
330	Satt654	J	89.478	6	0.69638		2.8364	
331	Scct011	J	62.885	4	0.47847		1.0908	
332	Sat_043	K	0.912	3	0.45163	0.52361	1.5486	1.83761
333	Sat_044	K	1.798	6	0.55547		1.9699	
334	Sat_167	K	14.354	4	0.63199		2.2716	
335	Sat_293	K	32.955	4	0.52374		1.7818	
336	Satt046	K	36.991	3	0.54748		1.836	
337	Satt055	K	40.864	4	0.38119		1.3853	
338	Satt137	K	42.392	4	0.12898		0.552	
339	Satt178	K	42.709	4	0.46309		1.6255	
340	Satt242	K	43.042	4	0.61698		2.0388	
341	Satt260	K	43.347	5	0.64042		2.1599	
342	Satt349	K	45.594	4	0.41849		1.5226	
343	Satt475	K	46.796	6	0.67197		2.7733	
344	Satt499	K	50.804	4	0.64149		2.0997	
345	satt539	K	58.005	2	0.36173		1.3271	

Continued Table 1

ID	SSR loci	Linkage group	Locus	Alleles		Mean		Mean
346	Satt544	K	61.674	5	0.56242		1.982	
347	Satt555	K	71.005	4	0.64636		2.3663	
348	Satt673	K	78.683	3	0.38707		1.418	
349	Satt715	K	80.119	3	0.51103		1.7121	
350	Satt727	K	85.188	4	0.68762		2.2123	
351	Sct_196	K	99.103	5	0.64298		2.1694	
352	Sat_150	L	0	3	0.42025	0.53029	1.5182	1.92074
353	Satt076	L	10.345	4	0.53176		1.7922	
354	Satt156	L	14.027	4	0.58681		1.9667	
355	Satt166	L	19.928	4	0.70162		2.762	
356	Satt182	L	27.922	4	0.70298		2.7714	
357	Satt229	L	34.54	5	0.63933		2.1431	
358	Satt232	L	53.671	4	0.49251		1.4448	
359	Satt238	L	54.574	2	0.19296		0.7474	
360	Satt313	L	56.142	6	0.80409		3.7604	
361	Satt373	L	61.349	4	0.60927		2.0166	
362	Satt448	L	64.661	4	0.64269		2.1033	
363	Satt481	L	66.51	4	0.59154		1.9654	
364	Satt495	L	70.364	2	0.36887		1.362	
365	Satt513	L	93.885	5	0.48611		1.7374	
366	Satt523	L	106.366	4	0.34262		1.2697	
367	Satt527	L	107.24	2	0.37118		1.3712	
368	Sat_226	M	7.841	4	0.5971	0.57091	1.993	1.91304
369	Satt150	M	18.582	3	0.39846		1.464	
370	Satt175	M	33.468	6	0.66982		2.2757	
371	Satt245	M	35.854	3	0.54631		1.8073	
372	Satt308	M	50.097	4	0.66961		2.2189	
373	Satt463	M	53.538	5	0.66713		2.2036	
374	Satt536	M	58.595	4	0.5509		1.8287	

375	Satt540	M	61.043	4	0.52401		1.8139	
376	Satt567	M	62.14	3	0.58253		1.9093	
377	Satt590	M	65.791	4	0.58024		1.93	
378	Satt626	M	66.988	4	0.5715		1.822	
379	Satt702	M	130.756	4	0.49334		1.6901	
380	Sat_084	N	28.52	4	0.49743	3.98272	1.6647	2.09624
381	Sat_208	N	32.848	5	0.59481		2.2084	
382	Satt009	N	34.649	5	0.62673		2.0724	
383	Satt022	N	35.32	6	0.80461		3.766	
384	Satt530	N	36.863	5	0.72424		2.4437	
385	Satt584	N	37.976	3	0.31794		1.1583	
386	Satt624	N	39.351	4	0.40296		1.4389	
387	Satt675	N	102.055	4	0.60887		2.0175	
388	BE801128	O	5.44	4	0.65455	3.98272	2.4379	1.63525
389	Sat_108	O	8.748	5	0.63254		2.104	
390	Sat_132	O	20.428	4	0.55059		1.9132	
391	Sat_231	O	39.817	3	0.16469		0.6767	

Continued Table 1

ID	SSR loci	Linkage group	Locus	Alleles		Mean	Mean
392	Sat_242	O	42.287	2	0.35703		1.3155
393	Sat_274	O	49.711	3	0.35487		1.3095
394	Sat_291	O	51.897	6	0.66662		2.383
395	Satt153	O	58.398	3	0.553		1.8169
396	Satt173	O	59.489	6	0.75699		2.8402
397	Satt241	O	68.97	3	0.36182		1.3121
398	Satt243	O	74.049	3	0.49466		1.6912
399	Satt259	O	100.376	3	0.45629		1.5549
400	Satt347	O	107.577	4	0.40434		0.4241
401	Satt358	O	118.137	4	0.44498		1.5297
402	Satt420	O	119.504	3	0.46921		1.6098
403	Satt445	O	128.443	3	0.49435		1.7002
404	Satt592	O	129.296	3	0.4251		1.4884
405	Sat_221	O	51.009	3	0.37486		1.3272