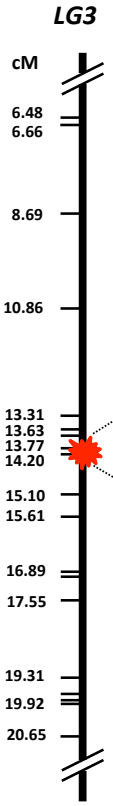
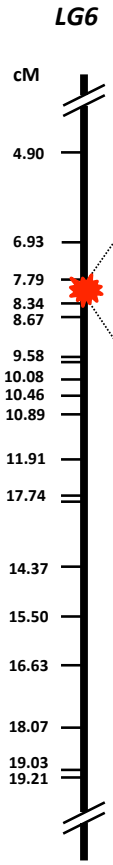


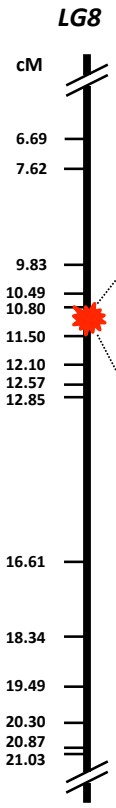
A

Position (cM)	Start	Symbol	Size (bp)	Function	Description
14.13	4946133	LOC657535	17156	mRNA	similar to CG2812-PA
14.13	4947077	LOC657454	3294	protein	similar to Probable cytochrome P450 9f2 (CYPIXF2)
14.19	4965706	LOC100141845	3565	ab initio	hypothetical protein LOC100141845
14.21	4972080	LOC100141631	6522	protein	similar to AGAP006113-PA



B

Position (cM)	Start	Symbol	Size (bp)	Function	Description
7.79	2726021	LOC663271	890	protein	similar to CG13618-PA
7.79	2726918	LOC663292	11247	mRNA	similar to CG4225-PA
7.85	2746389	LOC663334	8904	mRNA	similar to CG31116-PC, isoform C
7.87	2755664	LOC663354	13248	mRNA	similar to CG31116-PD, isoform D
7.89	2759979	LOC663367	1178	mRNA	similar to CG1227-PA
7.91	2769936	LOC663421	4322	mRNA	similar to CG17248-PA, isoform A
7.93	2776190	LOC663441	7675	mRNA	similar to CG1512-PB, isoform B
7.96	2785243	LOC663455	843	protein	similar to CG13618-PA
7.96	2787678	LOC663474	882	mRNA	similar to CG13618-PA
7.98	2793592	LOC663534	4834	protein	similar to CG1443-PA
8.10	2835857	LOC663587	190827	ab initio	similar to CG2052-PB, isoform B



C

Position (cM)	Start	Symbol	Size (bp)	Function	Description
10.78	3771637	LOC661897	1122	ab initio	similar to CG2713-PA
10.83	3791374	LOC661941	1654	mRNA	similar to CG4767-PA
10.87	3804037	LOC661984	27225	protein	similar to CG10889-PA
10.96	3835748	LOC662022	8261	mRNA	similar to CG4636-PA
10.98	3844344	LOC662059	401	protein	similar to LSM3 homolog, U6 small nuclear RNA associated
11.02	3856854	LOC662131	4959	mRNA	similar to toll-like receptor 13
11.04	3864695	LOC662165	22296	protein	similar to calpain 11
11.24	3932373	LOC662235	27566	mRNA	similar to CG17839-PB, isoform B
11.34	3969669	LOC662271	1120	mRNA	hypothetical protein LOC662271
11.35	3973123	LOC662311	1144	mRNA	hypothetical protein LOC662311
11.37	3980803	LOC662348	90308	protein	similar to CG8503-PA
11.64	4075128	LOC662383	6211	protein	similar to CG11160-PA, isoform A

Figure S1 Fine mapping of QTL on linkage group 3, 6 and 8. Results were scaled according to the physical position of markers on the *Tribolium castaneum* (red flour beetle) genome database. Tick marks appear at marker positions. **(A)** Linkage group 3 showing four protein coding genes located in the QTL region; **(B)** Linkage group 6 showing 11 genes located in the QTL region; and **(C)** Linkage group 8 showing 12 genes located in the QTL region.