Table S4. Likelihood ratio tests and parameter estimations for the six site models based on the coding sequences of *G. max* Hsf genes.

Site Model	Assumption	Estimates of Parameters	-lnL	LRT Statistic	Df	chi-square(0.01)	Positively selected sites
Data set: *G. max* Hsf family							
M0	One-ratio	$\omega=0.15765$	11472.31973				None
M1a	Nearly neutral	$p_0=0.64506$, $p_1=0.35494$ $\omega_0=0.11679$, $\omega_1=1$	11214.72377				Not allowed
M2a	Selection	$p_0=0.64506$, $p_1=0.16967$, $p_2=0.18527$ $\omega_0=0.11679$, $\omega_1=1$, $\omega_2=1$	11214.72377	M1a VS M2a: 0	2	9.21	None
M3	Discrete	$p_0=0.23362$, $p_1=0.40160$, $p_2=0.36478$ $\omega_0=0.00441$, $\omega_1=0.10859$, $\omega_2=0.39845$	10974.62579	M0 VS M3: 995.38788	4	13.28	None
M7	β	$p=0.53920$,$q=2.23895$	10966.95744				Not allowed
M8	β & ω	$p_0=0.99999$, ($p_1=0.00001$), $p=0.53920$, $q=2.23895$ $\omega=5.47020$	10966.95887	M7 VS M8: 0.00286	2	9.21	None
Data set: Class A *G. max* Hsfs							
M0	One-ratio	$\omega=0.20051$	11029.63101				None
M1a	Nearly neutral	$p_0=0.70765$, $p_1=0.29235$ $\omega_0=0.14421$, $\omega_1=1$	10783.30678				Not allowed
M2a	Selection	$p_0=0.70765$, $p_1=0.22183$, $p_2=0.07052$ $\omega_0=0.14421$, $\omega_1=1$, $\omega_2=1$	10783.30678	M1a VS M2a: 0	2	9.21	None
M3	Discrete	$p_0=0.29258$, $p_1=0.46116$, $p_2=0.24626$ $\omega_0=0.02343$, $\omega_1=0.19043$, $\omega_2=0.61686$	10642.48282	M0 VS M3: 774.29638	4	13.28	None
M7	β	$p=0.62699$,$q=1.88816$	10639.24953				Not allowed
M8	β & ω	$p_0=0.98516$, ($p_1=0.01484$), $p=0.64256$, $q=2.02031$ $\omega=1$	10639.19731	M7 VS M8: 0.10444	2	9.21	127 Q
Data set: Class B *G. max* Hsfs							
M0	One-ratio	$\omega=0.10951$	4928.91152				None
M1a	Nearly neutral	$p_0=0.79009$, $p_1=0.20991$ $\omega_0=0.07064$, $\omega_1=1$	4813.05665				Not allowed
M2a	Selection	$p_0=0.79009$, $p_1=0.15427$, $p_2=0.05564$ $\omega_0=0.07064$, $\omega_1=1$, $\omega_2=1$	4813.05665	M1a VS M2a: 0	2	9.21	None
M3	Discrete	$p_0=0.35383$, $p_1=0.43807$, $p_2=0.20810$ $\omega_0=0.00704$, $\omega_1=0.09464$, $\omega_2=0.44126$	4738.37109	M0 VS M3: 381.08086	4	13.28	None
M7	β	$p=0.44819$,$q=2.76153$	4740.65890				Not allowed
M8	β & ω	$p_0=0.99999$, ($p1=0.00001$), $p=0.44819$, $q=2.76153$ $\omega=27.16606$	4740.66047	M7 VS M8: 0.00314	2	9.21	None

Positively selected sites were inferred based on posterior probabilities calculated by the method of Bayes Empirical Bayes as only implemented under the models of M2a and M8.