

Table S1. Selected OJIP test parameters used in this study.

Parameter	Formula	Meaning
F_v/F_m or ϕ_{Po}	$(F_m - F_o)/F_m$	Maximum quantum efficiency of PSII
γ_{RC}	$\frac{Chl_{RC}}{Chl_{Total}} = \frac{RC/J_{ABS}}{1 + RC/J_{ABS}}$ $= \frac{M_o}{V_J \cdot \phi_{Po} + M_o}$	Probability that PSII acts as a reaction center
Ψ_{ET1}	$\frac{J_0^{TR}}{J^{ABS}} \cdot \frac{J^{ABS}}{CS} = \frac{F_m}{F_o} \cdot F_m$	Efficiency of electron transfer from Q _a to Q _b
δ_{RE1}	$\frac{J_o^{RE1}}{J_o^{ET2}} = \frac{1 - V_I}{1 - V_J}$	Efficiency of electron transfer from Q _b to PSI
PI _{abs}	$\frac{\phi_{Po}}{1 - \phi_{Po}} \cdot \frac{\Psi_{ET1}}{1 - \Psi_{ET1}} \cdot \frac{\gamma_{RC}}{1 - \gamma_{RC}}$ $\cdot \frac{\delta_{RE1}}{1 - \delta_{RE1}}$	Performance index of energy conservation from photons absorbed by PSII antenna until the reduction of PSI acceptors

3 **Table S2. Diagnosis of *Candidatus Liberibacter asiaticus* infection based on qPCR *Ct* value**

HLB Diagnosis*	HLB Positive	No HLB Found	Total	Mean	Range
First Diagnosis	325	113	438	33.5±0.2	20.1-40.0
Second Diagnosis	208	236	444	36.2±4.8	23.4-40.0
Combine Diagnosis	362	108	444	33.63±0.2	20.1-40.0

4 * Leaf sample was collected for first diagnosis on December 24, 2019, and second was on April 20, 2020. Combine diagnosis was
5 chosen from the lowest ct value of first and second diagnosis

Table S3. Analysis of variance for morphological and physiological traits under different HLB score

Variable	Source	DF	Sum of Squares	Mean Square	F value	P value
LAI	Model	8	193.7484	24.2186	57.1411	<.0001
	Error	438	185.6409	0.4238		
	C.Total	446	379.3893			
Leaf area ()	Model	8	12698.01	1587.25	4.5052	<.0001
	Error	439	154666.5	352.32		
	C.Total	447	167364.5			
Dry weight ()	Model	8	1.702692	0.212837	3.451	0.0007
	Error	422	26.02633	0.061674		
	C.Total	430	27.72902			
PI _{abs}	Model	8	13.79524	1.72441	2.0822	0.0362
	Error	439	363.5642	0.82816		
	C. Total	447	377.3595			
Fv/Fm	Model	8	0.008395	0.001049	1.0091	0.4282
	Error	439	0.456556	0.00104		
	C. Total	447	0.464952			
Fv/Fo	Model	8	2.7978	0.349725	1.4535	0.1722
	Error	439	105.6264	0.240607		
	C. Total	447	108.4242			
LMA ()	Model	8	4.3E-05	5.37E-06	1.4585	0.1704
	Error	422	0.001555	3.68E-06		
	C. Total	430	0.001598			
Ct value	Model	8	156.2934	19.5367	0.9502	0.4748
	Error	428	8799.823	20.5603		
	C. Total	436	8956.117			

Table S4 Summary of Fit

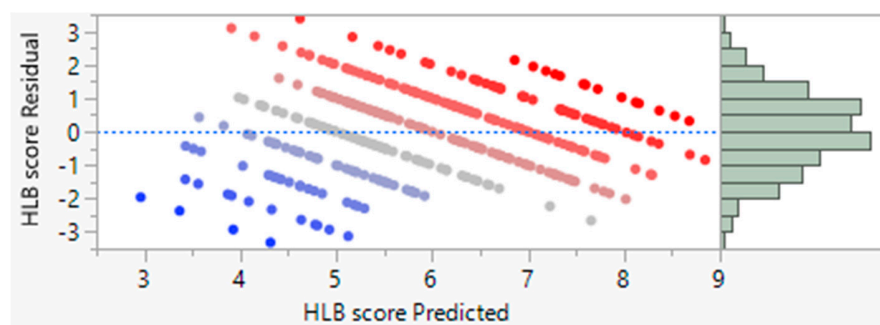
RSquare	0.496601
RSquare Adj	0.49547
Root Mean Square Error	1.161089
Mean of Response	5.872483
Observations	447

Table S5 Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio
Model	1	591.8152	591.815	438.9909
Error	445	599.9163	1.348	Prob > F
C. Total	446	1191.7315		<.0001*

Table S6 Parameter Estimates

Term	Estimate	Std Error	t Ratio	Prob> t
Intercept	2.111378	0.187722	11.25	<.0001*
LAI	1.2489657	0.059611	20.95	<.0001*

**Figure S1.** Regression analysis of HLB visual score of mandarin hybrids with distribution of HLB visual score residuals.

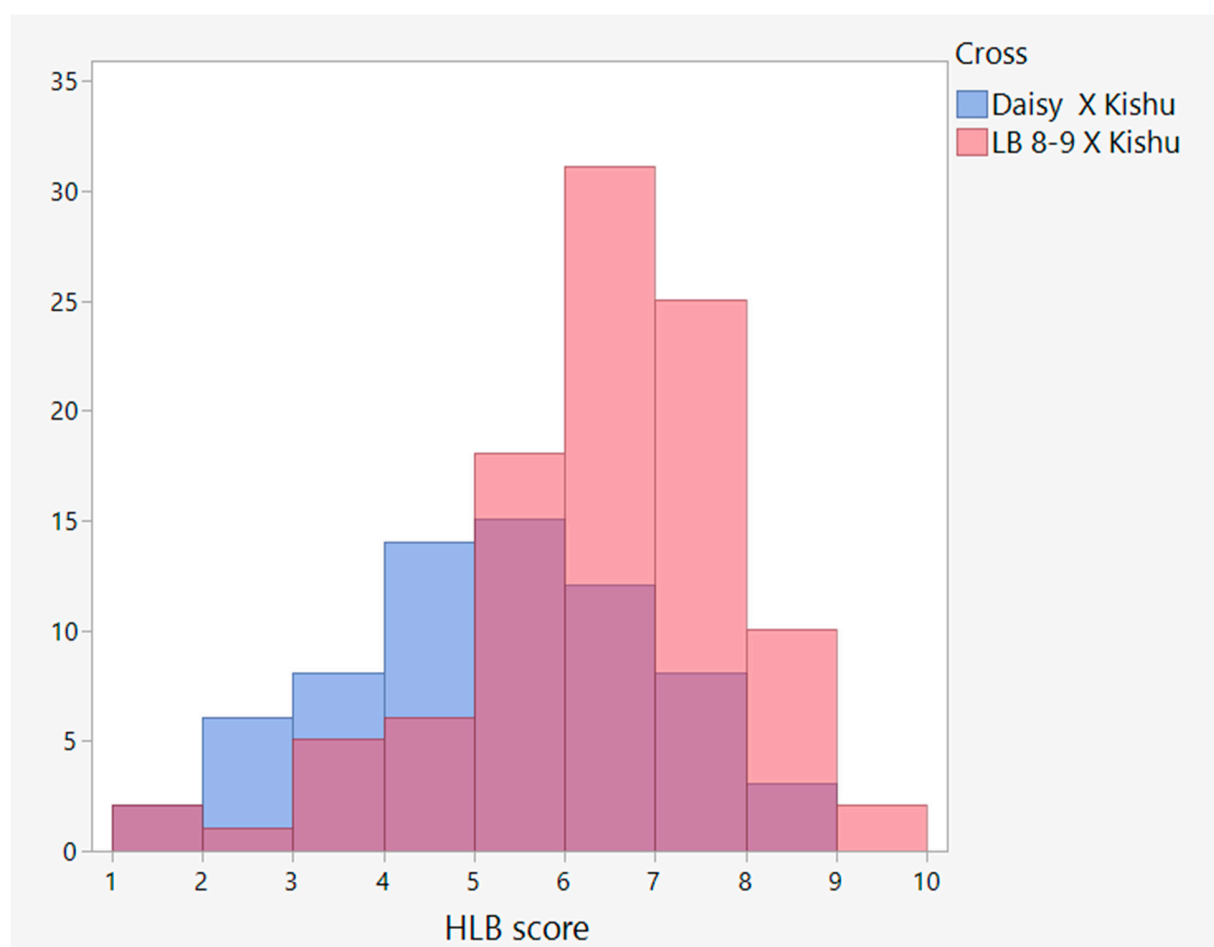


Figure S2. Distribution of HLB visual score in progenies of Daisy x Kishu and LB 8-9 x Kishu.