Supplementary Material

Functional variations in efficiency of PSII during leaf ontogeny in the tropical plant *Saraca asoca*

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Table S1: The polynomial regression equations and coefficient of correlation between the days after opening of lamina and the bioenergetic parameters derived from the OJIP fluorescence transients.

Bioenergetic parameters	Regression equation	Correlation coefficient
W_L	$y = 2*10^{-5}x^3 - 9*10^{-4}x^2 - 8.2*10^{-3}x + 0.7241$	-0.928^c
W_K	$y = 2*10^{-5}x^3 - 1.1*10^{-3}x^2 + 1*10^{-3}x + 0.8575$	-0.917^c
V_L	$y = 2*10^{-5}x^3 - 8*10^{-4}x^2 - 9.1*10^{-3}x + 0.5765$	-0.904^c
V_K	$y = 3*10^{-5}x^3 - 1.2*10^{-3}x^2 - 8*10^{-4}x + 0.6806$	-0.933^c
M_0	$y = 1*10^{-4}x^3 - 4.9*10^{-3}x^2 - 3.2*10^{-3}x + 2.7222$	-0.923^c
OEC (F)	$y = -8*10^{-5}x^3 + 3.8*10^{-3}x^2 - 0.017x + 0.444$	0.942^c
F_V	$y = -0.052x^3 + 1.561x^2 + 50.12x + 138.7$	0.908^c
φP_0	$y = -3*10^{-6}x^3 - 5*10^{-4}x^2 + 0.0374x + 0.1842$	0.886^b
ψ_0	$y = -2*10^{-5}x^3 + 1*10^{-3}x^2 - 3.4*10^{-3}x + 0.2169$	0.873^b
φE_0	$y = -2*10^{-5}x^3 + 8*10^{-4}x^2 + 2.4*10^{-3}x + 0.0476$	0.934^c
φD_0	$y = 3*10^{-6}x^3 + 5*10^{-4}x^2 - 3.7*10^{-2}x + 0.8158$	-0.879^b
φRE	$y = -4*10^{-6}x^3 + 6*10^{-5}x^2 + 7*10^{-3}x + 0.0086$	0.905^c
ψRE	$y = -1*10^{-6}x^3 - 8*10^{-5}x^2 + 7.9*10^{-3}x + 0.084$	0.816^b
ABS/RC	$y = -3*10^{-4}x^3 + 0.0318x^2 - 1.0565x + 14.263$	-0.922^c
TR_0/RC	$y = 9*10^{-5}x^3 - 4.3*10^{-3}x^2 + 3.8*10^{-3}x + 3.4301$	-0.898^b
ET_0/RC	$y = -2*10^{-5}x^3 + 6*10^{-4}x^2 + 7*10^{-3}x + 0.7079$	0.794^a
DI_0/RC	$y = -4*10^{-4}x^3 + 0.0361x^2 - 1.0603x + 10.833$	-0.937^c
PI_φ	$y = -2*10^{-4}x^3 + 7.3*10^{-3}x^2 + 0.0273x + 0.2459$	0.946^c
PI_ψ	$y = -5*10^{-5}x^3 + 2.8*10^{-3}x^2 - 0.017x + 0.3021$	0.939^c
PI_{ABS}	$y = -1*10^{-4}x^3 + 5.4*10^{-3}x^2 - 0.0521x + 0.1239$	0.917^c
PI_{TOTAL}	$y = -6*10^{-5}x^3 + 3.4*10^{-3}x^2 - 0.0214x + 0.0394$	0.953^c

Note: For abbreviations see table 1. [a]significant at P≥0.05; [b]significant at P≥0.01; [c]significant at P≥0.001.

Table S2: The coefficients of correlations between the OJIP parameters, and the morphometric and physiological attributes of *Saraca asoca* during leaf ontogeny.

OJIP parameters	Morphometric and physiological parameters														
	Leaf length	Leaf breadth	FW	DW	Chl	Car	Chl *a/b*	Chl/Car	P_N	P_N/Chl	E	g_s	C_i/C_a	WUE	CE
W_L	-0.81^b	-0.73^a	-0.96^c	-0.98^c	-0.98^c	-0.94^c	-0.89^b	-0.98^c	-0.96^c	-0.96^c	-0.93^c	-0.96^c	0.94^c	-0.95^c	-0.96^c
W_K	-0.77^a	-0.68^a	-0.94^c	-0.98^c	-0.97^c	-0.94^c	-0.86^b	-0.96^c	-0.96^c	-0.95^c	-0.89^b	-0.94^c	0.96^c	-0.94^c	-0.97^c
V_L	-0.83^b	-0.74^a	-0.96^c	-0.98^c	-0.99^c	-0.94^c	-0.90^c	-0.99^c	-0.97^c	-0.97^c	-0.94^c	-0.97^c	0.94^c	-0.96^c	-0.97^c
V_K	-0.80^b	-0.70^a	-0.95^c	-0.98^c	-0.98^c	-0.95^c	-0.88^b	-0.98^c	-0.98^c	-0.98^c	-0.91^c	-0.96^c	0.96^c	-0.97^c	-0.98^c
φP_0	0.90^c	0.84^b	0.98^c	0.94^c	0.97^c	0.90^c	0.95^c	0.99^c	0.92^c	0.95^c	0.97^c	0.98^c	-0.86^b	0.94^c	0.92^c
ψ_0	0.78^a	0.67^a	0.93^c	0.98^c	0.98^c	0.97^c	0.87^b	0.97^c	0.99^c	0.98^c	0.87^b	0.95^c	-0.96^c	0.99^c	0.99^c
φE_0	0.82^b	0.72^a	0.95^c	0.98^c	0.99^c	0.96^c	0.90^c	0.99^c	0.99^c	0.98^c	0.92^c	0.97^c	-0.95^c	0.98^c	0.99^c
φD_0	-0.90^c	-0.84^b	-0.98^c	-0.94^c	-0.97^c	-0.90^c	-0.95^c	-0.99^c	-0.92^c	-0.95^c	-0.97^c	-0.98^c	0.86^b	-0.94^c	-0.92^c
ψRE	0.86^b	0.77^a	0.94^c	0.92^c	0.95^c	0.88^b	0.92^c	0.96^c	0.91^c	0.93^c	0.92^c	0.95^c	-0.83^b	0.93^c	0.90^c
φRE	0.86^b	0.78^a	0.96^c	0.96^c	0.98^c	0.92^c	0.93^c	0.99^c	0.95^c	0.96^c	0.95^c	0.98^c	-0.89^b	0.95^c	0.95^c
M_0	-0.80^b	-0.70^a	-0.95^c	-0.98^c	-0.98^c	-0.95^c	-0.88^b	-0.98^c	-0.98^c	-0.98^c	-0.91^c	-0.96^c	0.96^c	-0.97^c	-0.98^c
ABS/RC	-0.95^c	-0.90^c	-0.98^c	-0.91^c	-0.95^c	-0.87^b	-0.97^c	-0.97^c	-0.88^b	-0.92^c	-0.99^c	-0.97^c	0.81^b	-0.90^c	-0.87^b
TR_0/RC	-0.77^a	-0.68^a	-0.94^c	-0.98^c	-0.97^c	-0.94^c	-0.86^b	-0.96^c	-0.96^c	-0.95^c	-0.89^b	-0.94^c	0.96^c	-0.94^c	-0.97^c

ET_0/RC	0.75^a	0.64	0.80^b	0.79^a	0.84^b	0.82^b	0.78^a	0.84^b	0.86^b	0.89^b	0.78^a	0.85^b	-0.72^a	0.89^b	0.85^b
DI_0/RC	-0.96^c	-0.92^c	-0.97^c	-0.88^b	-0.92^c	-0.84^b	-0.97^c	-0.95^c	-0.84^b	-0.90^c	-0.98^c	-0.96^c	0.77^a	-0.88^b	-0.84^b
PI_φ	0.81^b	0.73^a	0.95^c	0.99^c	0.99^c	0.96^c	0.91^c	0.99^c	0.98^c	0.97^c	0.92^c	0.97^c	-0.96^c	0.97^c	0.98^c
PI_ψ	0.74^a	0.64	0.91^c	0.98^c	0.97^c	0.97^c	0.85^b	0.96^c	0.99^c	0.97^c	0.85^b	0.93^c	-0.98^c	0.98^c	0.99^c
PI_{ABS}	0.65	0.56	0.86^b	0.96^c	0.93^c	0.94^c	0.79^a	0.91^c	0.95^c	0.90^c	0.77^a	0.87^b	-0.99^c	0.93^c	0.96^c
PI_{TOTAL}	0.72^a	0.62	0.90^c	0.99^c	0.97^c	0.96^c	0.85^b	0.95^c	0.98^c	0.94^c	0.83^b	0.92^c	-0.99^c	0.96^c	0.98^c
$OEC(F)$	0.76^a	0.66	0.93^c	0.98^c	0.98^c	0.97^c	0.86^b	0.97^c	0.99^c	0.97^c	0.87^b	0.94^c	-0.98^c	0.98^c	0.99^c
F_V	0.85^b	0.77^a	0.96^c	0.97^c	0.99^c	0.94^c	0.93^c	0.99^c	0.97^c	0.97^c	0.94^c	0.98^c	-0.92^c	0.97^c	0.96^c

Note: For abbreviations see table 1. [a]significant at P≥0.05; [b]significant at P≥0.01; [c]significant at P≥0.001.

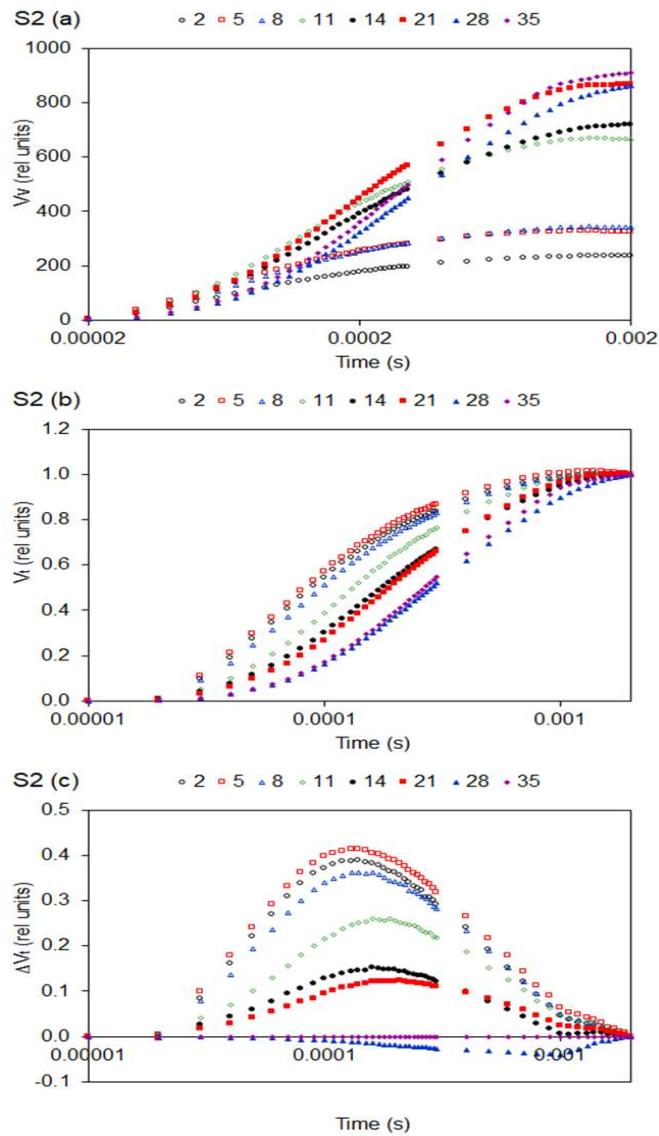**Fig. S1.** The pattern of leaf growth and colouration of *S. asoca* during 35 DAOL.

Fig. S2. The 2 ms OJIP fluorescence transients of *S. asoca* leaflets. **a** - The variable spectra standardised at F_0. **b** -The variable fluorescence spectra (V_t) standardised at F_0 and F_m. **c** - The relative variable fluorescence spectra (ΔV_t) derived from (**b**) by taking the V_t at 35 DAOL as the control. The legends are the DAOL.