

Table 1 Suppl. The summary of parameters, formulae and their description using data extracted from chlorophyll *a* fluorescence (OJIP) transient.

Fluorescence parameters	Description
$F_t$	Fluorescence intensity at time $t$ after the onset of actinic illumination
$F_{50 \mu s}$ or $F_{20 \mu s}$	Minimum reliable recorded fluorescence, at 50 $\mu s$ with the PEA- or 20 $\mu s$ with the Handy-PEA-fluorimeter
$F_{300 \mu s}$	Fluorescence intensity at 300 $\mu s$
$F_J$	Fluorescence intensity at the J-step (2 ms) of OJIP
$F_I$	Fluorescence intensity at the I-step (30 ms) of OJIP
$F_p$	Maximum recorded (= maximum possible) fluorescence intensity at P-step of OJIP
$F_m$	Maximal fluorescence intensity
$M_0$	Initial slope of the induction curve. $M_0 = 4(F_{300 \mu s} - F_0)/(F_m - F_0)$
$V_J$	Relative variable fluorescence at 2 ms. $V_J = (F_{2ms} - F_0)/(F_m - F_0)$
$V_I$	Relative variable fluorescence at 30 ms. $V_I = (F_{30ms} - F_0)/(F_m - F_0)$
$W_k$	It represents the damage to oxygen evolving complex OEC. $W_k = (F_{300 \mu s} - F_0)/(F_J - F_0)$
Specific energy fluxes per active PS II reaction center (RC)	
ABS/RC	Absorption flux (of antenna Chls) per RC. $ABS/RC = M_0(1/V_J) (1/\phi P_0)$
TR <sub>0</sub> /RC	Trapped energy flux (leading to Q <sub>A</sub> reduction) per RC. $TR_0/RC = M_0 (1/V_J)$
ET <sub>0</sub> /RC	Electron transport flux (further than Q <sub>A</sub> <sup>-</sup> ) per RC. $ET_0/RC = M_0 (1/V_J)(1-V_J)$
DI <sub>0</sub> /RC	Dissipation flux. $DI_0/RC = ABS/RC - TR_0/RC$
RE <sub>0</sub> /RC	Electron flux leading to the reduction of the PS I end acceptor. $RE_0/RC = M_0 (1/V_J)(1 - V_I)$
Quantum efficiency/flux ratios	
$\phi P_0$	Maximum quantum yield of primary photochemistry at $t = 0$ . $\phi P_0 = TR_0/ABS = 1 - (F_0/F_m) = F_v/F_m$
$\phi E_0$	Quantum yield for electron transport at $t = 0$ . $\phi E_0 = ET_0/ABS = (F_v/F_m) \times (1 - V_J)$
$\psi E_0$	Probability (at time 0) that a trapped exciton moves an electron into the electron transport chain beyond Q <sub>A</sub> <sup>-</sup> . $\psi E_0 = ET_0/TR_0 = 1 - V_J$
$\delta R_0$	Efficiency with which an electron from the intersystem electron carriers moves to reduce end electron acceptors at the PSI acceptor side (RE). $\delta R_0 = RE_0/ET_0 = (1 - V_I)/(1 - V_J)$
$\phi D_0$	It expresses the probability that the energy of an absorbed photon is dissipated as heat. $\phi D_0 = 1 - \phi P_0$
$\phi R_0$	It expresses the probability that an absorbed photon leads to a reduction of the PSI end acceptor. $\phi R_0 = RE_0/ABS$
Area above the induction curve	
Area	Integrated area between the induction curve and $F = F_m$
$S_m$	Normalized area. $S_m = \text{area}/(F_m - F_0)$
Performance index	
PI <sub>ABS</sub>	Performance index for energy conservation from excitation to the reduction of intersystem electron acceptors. $PI_{ABS} = (RC/ABS) [(\phi P_0/(1 - \phi P_0)) [(1 - V_J)/1 - (1 - V_J)]]$
PI <sub>Total</sub>	Performance index for energy conservation from excitation to the reduction of PS I end acceptors. $PI_{Total} = PI_{ABS} \delta R_0/(1 - \delta R_0)$