

Glossary of terms

ABS – absorption (light energy absorbed by PSII antenna pigments)

TR – trapping (energy trapped in PSII reaction centers leading to charge separation by QA reduction)

ET – electron transport (energy used to move electrons further down the chain, beyond QA)

RE – reduction (energy reaching PSI end acceptors)

DI – dissipation (energy lost as heat or fluorescence)












RC – reaction center











QA - primary quinone electron acceptor of PSII (accepts first electron from PSII reaction center)















QB - secondary quinone electron acceptor of PSII (accepts electron from QA)

PQ-pool - plastoquinone pool (moves electrons from QB to cytochrome b6f)

PSII - Photosystem II (first major protein-pigment complex in the photosynthetic electron transport chain)

Name	Type	Symbol	Description	Sources
Minimal fluorescence	Raw fluorescence	F _o	Minimal fluorescence yield at 50 μs. Arbitrary value	
Fluorescence at J-plateau	Raw fluorescence	F _j	Fluorescence yield at the J-plateau, measured at 3 ms	
Fluorescence at I-plateau	Raw fluorescence	F _i	Fluorescence yield at the I-plateau, measured at 33 ms	
Fluorescence at P-plateau	Raw fluorescence	F _m	Fluorescence yield at the P-plateau, measured between 300-800 ms	
Performance Index absorption	Multicomponent	PI _{ABS}	Sensitive parameter that combines multiple processes: Reflects reaction center activity, energy conversion efficiency and electron transport to first electron acceptors.	<ul style="list-style-type: none"> • Low light (45, 46) • Light stress (6, 38, 40, 44) • Drought (8, 15, 16, 28, 30, 31). • Heat stress (6, 9, 11, 32, 33, 35, 36, 37). • Cold stress (47, 48, 49, 50, 51) • Nutrient deficiency (6, 13). • Salt stress (6, 14, 17, 18, 22, 25, 26) 
				<ul style="list-style-type: none"> • Salt stress (21) 
Performance Index total	Multicomponent	PI _{TOTAL}	Reflecting reaction center activity, energy conversion efficiency and electron transport to end acceptors of PSI.	<ul style="list-style-type: none"> • Low light (46) • Heat stress (33, 35, 36) • Cold stress (48, 49, 50) • Salt stress (17, 22, 25, 26, 27) 
				<ul style="list-style-type: none"> • Drought (27) 
	Normalized fluorescence parameter	V _i	Relative variable fluorescence at I plateau (relative to maximum variable fluorescence)	<ul style="list-style-type: none"> • Salt stress (7) 
				<ul style="list-style-type: none"> • Salt stress (21) 
	Normalized fluorescence parameter	V _j	Relative variable fluorescence at J plateau (relative to maximum variable fluorescence)	<ul style="list-style-type: none"> • Light stress (42, 44) • Drought (15) • Heat stress (35, 36, 37) • Salt stress (7, 18, 23, 26) 
				<ul style="list-style-type: none"> • Salt stress (20) (21) 
	Normalized fluorescence parameter	V _{IP}		
	Normalized fluorescence parameter	M _o	Initial slope of the OJIP curve; indicating QA closing rate	<ul style="list-style-type: none"> • Drought (29) • Heat stress (5, 37) • Salt stress (7, 17, 23, 26) • Chilling stress (5) 
				<ul style="list-style-type: none"> • Salt stress (21) 
		Area	Area above the OJIP curve up to F _m ; represents the total electron transport capacity	<ul style="list-style-type: none"> • Light stress (42) • Heat stress (37) • Salt stress (21, 23) 
Sm	Normalized fluorescence parameter	Area/F _v	Normalized total complementary area above the OJIP transient. Indicating the number of reduction cycles that occur during the fluorescence rise. Proportional to the number of electron carriers per reaction center.	<ul style="list-style-type: none"> • Salt stress (7, 21, 23, 26) • Drought stress (29) • Heat stress (37) 

Name	Type	Symbol	Description	Sources
Absorption flux	Energy flux	Abs/RC	Absorption flux per RC. Apparent antenna size of active PSII	<ul style="list-style-type: none"> • Low light (45, 46) • Light stress (6, 39, 40, 41, 43, 44) • Drought (16, 27, 30, 31) • Heat stress (5, 6, 11, 32, 37) • Nutrient deficiency (6) • Salt stress (6, 26) • Cold stress (6, 47, 48, 49, 50, 51) 
				<ul style="list-style-type: none"> • Drought (8) • Salt stress (23) 
Trapping flux	Energy flux	TR _o /RC	QA reduction flux (trapping) per RC	<ul style="list-style-type: none"> • Low light (45, 46) • Light stress (41, 44) • Drought (16, 27) • Heat stress (5, 32, 37) • Cold stress (48, 50) • Salt stress (17) (25, 26) 
				<ul style="list-style-type: none"> • Light stress (43) • Drought (30) • Heat stress (34) • Cold stress (47, 49, 51) • Salt stress (23) 
Dissipation flux	Energy flux	DI _o /RC	Dissipated energy flux per RC	<ul style="list-style-type: none"> • Low light (45, 46) • Light stress (39, 40, 41, 42, 43, 44) • Drought (15, 16, 27, 28) • Heat stress (5, 11, 32, 34, 37) • Cold stress (51) • Salt stress (7, 17, 23, 25, 26) 
				<ul style="list-style-type: none"> • Salt stress (18, 21) 
Electron transport flux	Energy flux	ET _o /RC	Electron transport (from QA to QB and PQ pool) flux per RC	<ul style="list-style-type: none"> • Low light (46) • Light stress (40, 41) • Drought (4, 16) • Salt stress (17) • Cold stress (48, 50) 
				<ul style="list-style-type: none"> • Light stress (43, 44) • Drought (30) • Heat stress (5, 32, 34) • Cold stress (5, 47, 49, 51) • Salt stress (23, 24, 26) 
Electron reduction flux	Energy flux	RE _o /RC	Flux of electron reduction of end acceptors of PSI	<ul style="list-style-type: none"> • Light stress (41) • Drought (16, 27) • Heat stress (5) • Salt stress (17) • Cold stress (5, 48, 50) 
				<ul style="list-style-type: none"> • Drought (27) • Heat stress (37) • Cold stress (49) • Salt stress (25) 

Name	Type	Symbol	Description	Sources
Potential maximum quantum efficiency of photosynthesis	Quantum yield	F_v/F_m or ϕ_{Po}	Potential maximum quantum efficiency of PSII. The probability that an absorbed photon leads to a reduction of Q_A	
Actual quantum efficiency of photosynthesis under light	Quantum yield	F_q'/F_m' or Φ_{PSII}	Operating efficiency of PSII	
	Quantum yield	ϕ_{Eo}	Quantum yield of electron transport (from Q_A to Q_B and PQ pool). Probability that an absorbed photon leads to electron transport beyond Q_A	<ul style="list-style-type: none"> • Low light (45) • Light stress (40, 42) • Drought (16, 27, 28, 29, 31) • Heat stress (5, 32, 36) • Cold stress (5, 48, 50, 52) • Salt stress (6, 20, 23, 24, 25, 26) 
				<ul style="list-style-type: none"> • Light stress (40) • Salt stress (21) 
	Quantum yield	ϕ_{Ro}	Quantum yield of reduction of end electron acceptors at PSI. Probability that an absorbed photon leads to a reduction in the PSI end acceptor.	<ul style="list-style-type: none"> • Heat stress (5) • Cold stress (5) 
				<ul style="list-style-type: none"> • Low light (45) • Drought (16, 27, 28) • Heat stress (33, 36) • Cold stress (50, 52) • Salt stress (25, 26) 
	Quantum yield	ϕ_{Do}	Quantum yield of non-photochemical energy dissipation at time zero. Probability that the energy of an absorbed photon is dissipated as heat	<ul style="list-style-type: none"> • Salt stress (26) • Heat stress (36) • Light stress (40, 42) • Low light stress (45) 
	Efficiency/Probability	δR_o	Efficiency of electrons transported to end electron acceptor of PSI	<ul style="list-style-type: none"> • Drought (4, 27) • Heat stress (5, 36) • Cold stress (5) 
				<ul style="list-style-type: none"> • Drought (16, 27, 31) • Heat stress (33) • Salt stress (25, 26) 
	Efficiency/Probability	Ψ_{Eo}	Efficiency of electrons transported beyond Q_A (to Q_B and PQ pool).	<ul style="list-style-type: none"> • Drought (4) • Light stress (6, 40) • Heat stress (6) • Nutrient deficiency (6) • Salt stress (6, 7, 21) 
				<ul style="list-style-type: none"> • Salt stress (18, 20, 23, 24, 25, 26) • Light stress (42) • Drought (16, 27, 28, 29, 31) • Heat stress (5, 32, 36) • Cold stress (52) 
	Probability/fraction	γ_{RC}	Probability that a PSII Chl a molecule functions as RC. Reflects the density of active PSII reaction centers	<ul style="list-style-type: none"> • Heat stress (33) • Cold stress (50) 
		F_v/F_o	Indicator of the maximum primary photochemical yield of PSII; sensitive to donor-side (water-splitting complex) efficiency.	<ul style="list-style-type: none"> • Heat stress (6) • Cold stress (6) • Light stress (6) • Salt stress (6) • Nutrient deficiency (6) 
				<ul style="list-style-type: none"> • Salt stress (17, 19, 23, 25) • Drought (29) • High light (38, 39, 42) • Low light (38) 
		N_{to}	Number of Q_A reductions per reaction center until F_m ; reflects the turnover cycles of PSII electron acceptors during the OJIP rise	
	Probability	B_{av}	Average probability that a trapped exciton moves an electron further than Q_A^- ; indicator of electron transport efficiency beyond Q_A	

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