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	Fo	Minimal fluorescence yield at 50 µs. Arbitrary value	
Fluorescence at J-plateau	Raw fluorescence	Fj	Fluorescence yield at the J-plateau, measured at 3 ms	
Fluorescence at I-plateau	Raw fluorescence	Fi	Fluorescence yield at the I-plateau, measured at 33 ms	
Fluorescence at P-plateau	Raw fluorescence	Fm	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.	• 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) ↘ • Salt stress (21) ↗
Performance Index total	Multicomponent	PI_{TOTAL}	Reflecting reaction center activity, energy conversion efficiency and electron transport to end acceptors of PSI.	• Low light (46) • Heat stress (33, 35, 36) • Cold stress (48, 49, 50) • Salt stress (17, 22, 25, 26, 27) ↘ • Drought (27) ↗
	Normalized fluorescence parameter	V_I	Relative variable fluorescence at I plateau (relative to maximum variable fluorescence)	• Salt stress (7) ↘ • Salt stress (21) ↗
	Normalized fluorescence parameter	V_J	Relative variable fluorescence at J plateau (relative to maximum variable fluorescence)	• Light stress (42, 44) • Drought (15) • Heat stress (35, 36, 37) • Salt stress (7, 18, 23, 26) ↗ • Salt stress (20) (21) ↘
	Normalized fluorescence parameter	V_{IP}		
	Normalized fluorescence parameter	Mo	Initial slope of the OJIP curve; indicating QA closing rate	• Drought (29) • Heat stress (5, 37) • Salt stress (7, 17, 23, 26) • Chilling stress (5) ↗ • Salt stress (21) ↘
		Area	Area above the OJIP curve up to Fm; represents the total electron transport capacity	• Light stress (42) • Heat stress (37) • Salt stress (21, 23) ↘
Sm	Normalized fluorescence parameter	Area/Fv	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.	• 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	• 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) ↗
				• Drought (8) • Salt stress (23) ↘
Trapping flux	Energy flux	TR_O/RC	QA reduction flux (trapping) per RC	• 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) ↗
				• 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	• 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) ↗
				• Salt stress (18, 21) ↘
Electron transport flux	Energy flux	ET_O/RC	Electron transport (from QA to QB and PQ pool) flux per RC	• Low light (46) • Light stress (40, 41) • Drought (4, 16) • Salt stress (17) • Cold stress (48, 50) ↗
				• 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	• Light stress (41) • Drought (16, 27) • Heat stress (5) • Salt stress (17) • Cold stress (5, 48, 50) ↗
				• Drought (27) • Heat stress (37) • Cold stress (49) • Salt stress (25) ↘

Name	Type	Symbol	Description	Sources
Potential maximum quantum efficiency of photosynthesis	Quantum yield	Fv/Fm or ϕPo	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	Fq'/Fm' or ΦPSII	Operating efficiency of PSII	↘
	Quantum yield	ϕE_O	Quantum yield of electron transport (from QA to QB and PQ pool). Probability that an absorbed photon leads to electron transport beyond QA	• 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) ↘ • Light stress (40) • Salt stress (21) ↗
	Quantum yield	ϕR_O	Quantum yield of reduction of end electron acceptors at PSI. Probability that an absorbed photon leads to a reduction in the PSI end acceptor.	• Heat stress (5) • Cold stress (5) ↗ • Low light (45) • Drought (16, 27, 28) • Heat stress (33, 36) • Cold stress (50, 52) • Salt stress (25, 26) ↘
	Quantum yield	ϕ_{D0}	Quantum yield of non-photochemical energy dissipation at time zero. Probability that the energy of an absorbed photon is dissipated as heat	• 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	• Drought (4, 27) • Heat stress (5, 36) • Cold stress (5) ↗ • Drought (16, 27, 31) • Heat stress (33) • Salt stress (25, 26) ↘
	Efficiency/Probability	ΨE_O	Efficiency of electrons transported beyond QA (to QB and PQ pool).	• Drought (4) • Light stress (6, 40) • Heat stress (6) • Nutrient deficiency (6) • Salt stress (6, 7, 21) ↗ • 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	γRC	Probability that a PSII Chl a molecule functions as RC. Reflects the density of active PSII reaction centers	• Heat stress (33) • Cold stress (50) ↘
		Fv/Fo	Indicator of the maximum primary photochemical yield of PSII; sensitive to donor-side (water-splitting complex) efficiency.	• Heat stress (6) • Cold stress (6) • Light stress (6) • Salt stress (6) • Nutrient deficiency (6) ↗ • Salt stress (17, 19, 23, 25) • Drought (29) • High light (38, 39, 42) • Low light (38) ↘
		Nto	Number of QA reductions per reaction center until Fm; reflects the turnover cycles of PSII electron acceptors during the OJIP rise	
	Probability	Bav	Average probability that a trapped exciton moves an electron further than QA^-; indicator of electron transport efficiency beyond QA	