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| **Fluorescence parameters** | **Description** |
| F0 ≅ F20μs | Minimal fluorescence, when all RCs are open. |
| FM (= FP) | Maximal fluorescence, when all RCs are closed (= FP when the actinic light intensity is above 500 μmol photons m−2 s−1 and provided that all RCs are active as QA reducing). |
| FV ≡ FM − F0  | Maximal variable fluorescence. |
| FV / F0 = (FM - F0) / F0 | The activity of the water splitting complex on the donor site of the PSII. |
| FV / FM = (FM - F0) / FM | Maximum quantum yield of PSII. |
| VJ = (FJ - FO) / (FM - F0) | Relative variable fluorescence at the J-step. |
| ϕPo = 1 - FO/FM | Maximum quantum yield of primary photochemistry (at t=0). |
| ϕDo = F0/FM | Quantum yield (at t=0) of energy dissipation. |
| PIABS = ϒRC/ (1 - ϒRC).  ϕPo/ (1 - ϕPo). ψEo/ (1 - ψEo) | Performance index (potential) for energy conservation from exciton to the reduction of intersystem electron acceptors. |
| M0ABS/RC = (MO/VJ). (1/φPo) | Approximated initial slope (in ms-1) of the fluorescence transient V = f (t).Apparent antenna size of an active PS II RC. |
| TRO/RC = M0 (1/VJ) | Trapping flux (leading to QA reduction) per RC. |
| ETO/RC = M0 (1/VJ)ψO | Electron transport flux (further than QA) per RC. |
| DIO/RC = (ABS/RC - TRO/RC) | Dissipated energy flux per RC (at t=0). |

Suplimentary Table 1: Photochemicals tratis and there description which is used in the present study.